

**ANNUAL REPORT OF UNIT OPERATIONS - FORM 24**

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 54260 (09-2004)

For Year **2023**
2024

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL.

Field DICKINSON		Unitized Pool HEATH-MADISON	Unit DICKINSON HEATH UNIT
Operator SCOUT ENERGY MANAGMENT LLC		Current OOIP Estimate Bbls	Cumulative Oil Production 26802559 Bbls
Address 13800 MONTFORT DRIVE		City DALLAS	Telephone Number (469) 485-3122
		State TX	Zip Code 75240

YEAR 2023 PRODUCTION / INJECTION

Oil Produced (Bbls)	Gas Produced (MCF)	Water Produced (Bbls)	GOR (SCF/Bbl)	Injection Volume Bbls	Make-Up Water Produced (Bbls)
12483	373	505071	0	0 MCF	0

YEAR 2023 WELL COUNT

Producing Wells	Injection Wells	Shut-In Wells	Temporarily Abandoned Wells	SWD Wells	Water Supply Wells
6	3	7	0	1	0

YEAR 2023 RESERVOIR PRESSURE DATA (Report 3 most representative bottom hole pressures from more than one well, if possible.)

Datum (Feet Below S.L.)	Date Of Test	Well Name and Number	Well File Number	Extrapolated Reservoir Pressure (PSIG)

YEAR 2023 OPERATIONS

Producers Drilled	Injectors Drilled	Injectors Converted	Wells Shut-in	Wells TA	SWD Wells Drilled	SWD Wells Converted	Water Supply Wells Drilled	Water Supply Wells Converted
0	0	0	7	0	0	0	0	0

YEAR 2024 PROPOSED OPERATIONS

Producing Wells To Be Drilled	Injection Wells To Be Drilled	Injection Wells To Be Converted	Wells To Be Plugged	Wells To Be TA	SWD Wells To Be Drilled	SWD Wells To Be Converted	Water Supply Wells To Be Drilled	Water Supply Wells To Be Converted
0	0	0	3	0	0	0	0	0

YEAR 2023 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PERFORMED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description
DHSU 18	4437	P&A
DHSU 71	12037	Plugged on 9/19/2023
DHSU 58	6430	P&A

YEAR 2024 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PROPOSED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description
DHSU 20		Well in AB status - Plugging Well
DHSU 72		Well in AB status - Plugging Well
DHSU 10		Plan to P&A well

Comments

Signature 	Printed Name Mikey Pham	Title Regulatory Analyst	Date March 13, 2024
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ANNUAL REPORT OF UNIT OPERATIONS FORM 24

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 54260 (09-2004)

For Year **2022**

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Field DICKINSON		Unitized Pool HEATH-MADISON	Unit DICKINSON HEATH UNIT	
Operator SCOUT ENERGY MANAGMENT LLC		Current OOIP Estimate Bbls	Cumulative Oil Production 26790076 Bbls	
Address 13800 MONTFORT DRIVE, SUITE 100		City DALLAS	State TX	Zip Code 75240

YEAR 2022 PRODUCTION / INJECTION

Oil Produced (Bbls)	Gas Produced (MCF)	Water Produced (Bbls)	GOR (SCF/Bbl)	Injection Volume Bbls	Make-Up Water Produced (Bbls)
6668	4042	522223	0	0 MCF	0

YEAR 2022 WELL COUNT

Producing Wells	Injection Wells	Shut-In Wells	Temporarily Abandoned Wells	SWD Wells	Water Supply Wells
2	3	14	0	1	0

YEAR 2022 RESERVOIR PRESSURE DATA (Report 3 most representative bottom hole pressures from more than one well, if possible.)

Datum (Feet Below S.L.)	Date Of Test	Well Name and Number	Well File Number	Extrapolated Reservoir Pressure (PSIG)

YEAR 2022 OPERATIONS

Producers Drilled	Injectors Drilled	Injectors Converted	Wells Shut-in	Wells TA	SWD Wells Drilled	SWD Wells Converted	Water Supply Wells Drilled	Water Supply Wells Converted
0	0	0	0	0	0	0	0	0

YEAR 2023 PROPOSED OPERATIONS

Producing Wells To Be Drilled	Injection Wells To Be Drilled	Injection Wells To Be Converted	Wells To Be Plugged	Wells To Be TA	SWD Wells To Be Drilled	SWD Wells To Be Converted	Water Supply Wells To Be Drilled	Water Supply Wells To Be Converted
0	0	0	0	0	0	0	0	0

YEAR 2022 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PERFORMED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description
DHSU 4	4762	P&A
DHSU 45	5370	P&A
DHSU 48	5434	P&A
DHSU 73	12342	P&A

YEAR 2023 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PROPOSED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description

Comments

No major workovers or artificial lift changes planned for 2023.

Signature 	Printed Name Mikey Pham	Title Regulatory Tech	Date March 9, 2023
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ANNUAL REPORT OF UNIT OPERATIONS - FORM 24

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For Year

2021

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 54260 (09-2004)

N.D. INDUSTRIAL COMMISSION

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Unit DICKINSON HEATH UNIT	
Current OOIP Estimate Bbls	Cumulative Oil Production 26783408 Bbls
Operator SCOUT ENERGY MANAGEMENT LLC	
Telephone Number (972) 590-6353	
Address 13800 Montfort Road, Suite 100	City DALLAS
State TX	Zip Code 75240

YEAR 2021 PRODUCTION / INJECTION

Oil Produced (Bbls)	Gas Produced (MCF)	Water Produced (Bbls)	GOR (SCF/Bbl)	Injection Volume Bbls	Make-Up Water Produced (Bbls)
6967	122	217805		0 MCF	0

YEAR 2021 WELL COUNT

Producing Wells	Injection Wells	Shut-In Wells	Temporarily Abandoned Wells	SWD Wells	Water Supply Wells
14	3	6	1	1	0

YEAR 2021 RESERVOIR PRESSURE DATA (Report 3 most representative bottom hole pressures from more than one well, if possible.)

Datum (Feet Below S.L.)	Date Of Test	Well Name and Number	Well File Number	Extrapolated Reservoir Pressure (PSIG)

YEAR 2021 OPERATIONS

Producers Drilled	Injectors Drilled	Injectors Converted	Wells Shut-in	Wells TA	SWD Wells Drilled	SWD Wells Converted	Water Supply Wells Drilled	Water Supply Wells Converted
0	0	0	0	0	0	0	0	0

YEAR 2022 PROPOSED OPERATIONS

Producing Wells To Be Drilled	Injection Wells To Be Drilled	Injection Wells To Be Converted	Wells To Be Plugged	Wells To Be TA	SWD Wells To Be Drilled	SWD Wells To Be Converted	Water Supply Wells To Be Drilled	Water Supply Wells To Be Converted

YEAR 2021 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PERFORMED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description
DHSU 8	4919	P&A
DHSU 51	5599	P&A
DHSU 59	6431	P&A

YEAR 2022 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PROPOSED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description
DHSU 4	4762	P&A
DHSU 45	5370	P&A
DHSU 48	5434	P&A
DHSU 73	12342	P&A

Comments

Signature <i>Sharon Sequera</i>	Printed Name Sharon Sequera	Title Senior Regulatory Analyst	Date March 29, 2022
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**ANNUAL REPORT OF UNIT OPERATIONS - FORM 24**

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 54260 (09-2004)

For Year **2020****Received****JUN 04 2021**

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Field Dickinson		Unitized Pool ND Oil & Gas Division Heath/Madison	Unit Dickinson Heath	Current OOIP Estimate Bbls	Cumulative Oil Production 26776441 Bbls
Operator Scout Energy Management LLC				Telephone Number (972) 277-1397	
Address 13800 Montfort Drive, Suite 100			City Dallas	State TX	Zip Code 75240

YEAR 2020 PRODUCTION / INJECTION

Oil Produced (Bbls)	Gas Produced (MCF)	Water Produced (Bbls)	GOR (SCF/Bbl)	Injection Volume 219282 Bbls	Make-Up Water Produced (Bbls)
11730	242	215676		0 MCF	0

YEAR 2020 WELL COUNT

Producing Wells	Injection Wells	Shut-In Wells	Temporarily Abandoned Wells	SWD Wells	Water Supply Wells
1	7	21	2	1	0

YEAR 2020 RESERVOIR PRESSURE DATA (Report 3 most representative bottom hole pressures from more than one well, if possible.)

Datum (Feet Below S.L.)	Date Of Test	Well Name and Number	Well File Number	Extrapolated Reservoir Pressure (PSIG)

YEAR 2020 OPERATIONS

Producers Drilled	Injectors Drilled	Injectors Converted	Wells Shut-in	Wells TA	SWD Wells Drilled	SWD Wells Converted	Water Supply Wells Drilled	Water Supply Wells Converted
0	0	0	0	0	0	0	0	0

YEAR 2021 PROPOSED OPERATIONS

Producing Wells To Be Drilled	Injection Wells To Be Drilled	Injection Wells To Be Converted	Wells To Be Plugged	Wells To Be TA	SWD Wells To Be Drilled	SWD Wells To Be Converted	Water Supply Wells To Be Drilled	Water Supply Wells To Be Converted
0	0	0	3	0	0	0	0	0

YEAR 2020 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PERFORMED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description
N/A		

YEAR 2021 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PROPOSED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description
N/A		

Comments

No major workovers or artificial lift changes in 2020.
No major workovers or artificial lift changes planned for 2021.

Signature <i>Sheronda Greenwood</i>	Printed Name Sheronda Greenwood	Title Regulatory Analyst	Date June 2, 2021
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ANNUAL REPORT OF UNIT OPERATIONS - FORM 24

1. This report is to be filed annually, by April 1, for the preceding calendar year.
2. The unit, field, unitized pool, operator, well names and numbers, and file numbers shall coincide with the official records on file with the Commission.
3. All oil volumes shall be reported as barrels (42 gallons), corrected to 14.73 psia and 60 degrees F. All other liquid volumes shall be reported as barrels (42 gallons). All liquid volumes shall be rounded to the nearest full barrel. All gas volumes shall be reported as MCF and corrected to 14.73 psia and 60 degrees F.
4. The "Current OOIP Estimate" shall be the most recently updated figure.
5. The "Cumulative Oil Production" shall be from the effective date of the unit.
6. Well status' shall coincide with the official definitions of the Commission.
7. The datum used for reservoir pressure measurements shall coincide with the respective field order.
8. The original of this report shall be filed with the Industrial Commission of North Dakota, Oil and Gas Division, 600 East Boulevard, Dept. 405, Bismarck, ND 58505-0840.



ANNUAL REPORT OF UNIT OPERATIONS - FORM 24

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 54260 (09-2004)

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JUN 04 2021

For Year

2019

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ND Oil & Gas Division

Field Dickinson		Unitized Pool Heath/Madison	Current OOIP Estimate Bbls	Cumulative Oil Production 26764711 Bbls
Operator Scout Energy Management LLC				Telephone Number (972) 277-1397
Address 13800 Montfort Drive, Suite 100		City Dallas	State TX	Zip Code 75240

YEAR 2019 PRODUCTION / INJECTION

Oil Produced (Bbls)	Gas Produced (MCF)	Water Produced (Bbls)	GOR (SCF/Bbl)	Injection Volume Bbls	Make-Up Water Produced (Bbls)
33004	170	607778		0 MCF	0

YEAR 2019 WELL COUNT

Producing Wells	Injection Wells	Shut-In Wells	Temporarily Abandoned Wells	SWD Wells	Water Supply Wells
1	7	21	2	1	0

YEAR 2019 RESERVOIR PRESSURE DATA (Report 3 most representative bottom hole pressures from more than one well, if possible.)

Datum (Feet Below S.L.)	Date Of Test	Well Name and Number	Well File Number	Extrapolated Reservoir Pressure (PSIG)

YEAR 2019 OPERATIONS

Producers Drilled	Injectors Drilled	Injectors Converted	Wells Shut-in	Wells TA	SWD Wells Drilled	SWD Wells Converted	Water Supply Wells Drilled	Water Supply Wells Converted
0	0	0	21	0	0	0	0	0

YEAR 2020 PROPOSED OPERATIONS

Producing Wells To Be Drilled	Injection Wells To Be Drilled	Injection Wells To Be Converted	Wells To Be Plugged	Wells To Be TA	SWD Wells To Be Drilled	SWD Wells To Be Converted	Water Supply Wells To Be Drilled	Water Supply Wells To Be Converted
0	0	0	1	0	0	0	0	0

YEAR 2019 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PERFORMED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description
Dickinson Heath Sand Unit 25	4293	Cement squeeze on the DHSU 25 water injection well

YEAR 2020 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PROPOSED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description

Comments

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Signature <i>Sheronda Greenwood</i>	Printed Name Sheronda Greenwood	Title Regulatory Analyst	Date May 12, 2021
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ANNUAL REPORT OF UNIT OPERATIONS - FORM 24

1. This report is to be filed annually, by April 1, for the preceding calendar year.
2. The unit, field, unitized pool, operator, well names and numbers, and file numbers shall coincide with the official records on file with the Commission.
3. All oil volumes shall be reported as barrels (42 gallons), corrected to 14.73 psia and 60 degrees F. All other liquid volumes shall be reported as barrels (42 gallons). All liquid volumes shall be rounded to the nearest full barrel. All gas volumes shall be reported as MCF and corrected to 14.73 psia and 60 degrees F.
4. The "Current OOIP Estimate" shall be the most recently updated figure.
5. The "Cumulative Oil Production" shall be from the effective date of the unit.
6. Well status' shall coincide with the official definitions of the Commission.
7. The datum used for reservoir pressure measurements shall coincide with the respective field order.
8. The original of this report shall be filed with the Industrial Commission of North Dakota, Oil and Gas Division, 600 East Boulevard, Dept. 405, Bismarck, ND 58505-0840.

**ANNUAL REPORT OF UNIT OPERATIONS - FORM 24**

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
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SFN 54260 (09-2004)

For Year
2018

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Field Dickinson		Unitized Pool Heath/Madison		Unit Dickinson Heath	
Operator Scout Energy Management LLC		Current OOIP Estimate Bbls		Cumulative Oil Production 26,734,475 Bbls	
Address 4901 LBJ Freeway, Suite 300		City Dallas		Telephone Number (972) 588-4798	
		State TX		Zip Code 75244	

YEAR 2018 PRODUCTION / INJECTION

Oil Produced (Bbls)	Gas Produced (MCF)	Water Produced (Bbls)	GOR (SCF/Bbl)	Injection Volume Bbls	Make-Up Water Produced (Bbls)
37,675	0	919,521		0 MCF	

YEAR 2018 WELL COUNT

Producing Wells	Injection Wells	Shut-In Wells	Temporarily Abandoned Wells	SWD Wells	Water Supply Wells
17	2	4	4	1	0

YEAR RESERVOIR PRESSURE DATA (Report 3 most representative bottom hole pressures from more than one well, if possible.)

Datum (Feet Below S.L.)	Date Of Test	Well Name and Number	Well File Number	Extrapolated Reservoir Pressure (PSIG)

YEAR 2018 OPERATIONS

Producers Drilled	Injectors Drilled	Injectors Converted	Wells Shut-in	Wells TA	SWD Wells		Water Supply Wells	
					Drilled	Converted	Drilled	Converted
0	0	0	0	0	0	0	0	0

YEAR 2019 PROPOSED OPERATIONS

Producing Wells To Be Drilled	Injection Wells To Be Drilled	Injection Wells To Be Converted	Wells To Be Plugged	Wells To Be TA	SWD Wells To Be		Water Supply Wells To Be	
					Drilled	Converted	Drilled	Converted
0	0	0	0	1	0	0	0	0

YEAR 2018 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PERFORMED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description

YEAR 2019 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PROPOSED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description
DHSU 21	4266	Temporarily abandon

Comments

Signature <i>Sherri Daley</i>	Printed Name Sherri Daley	Title Regulatory Specialist	Date March 5, 2019
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**ANNUAL REPORT OF UNIT OPERATIONS - FORM 24**

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
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Received**AUG 20 2018****ND Oil & Gas Division**

For Year
2017

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Unit Dickinson Heath Unit	
Field Dickinson	Unitized Pool Heath/Madison
Current OOIP Estimate Bbls	Cumulative Oil Production 26711761 Bbls
Operator Scout Energy Management LLC	
Telephone Number (972) 588-4798	
Address 4901 LBJ Freeway, Suite 300	City Dallas
State TX	Zip Code 75244

YEAR 2017 PRODUCTION / INJECTION

Oil Produced (Bbls)	Gas Produced (MCF)	Water Produced (Bbls)	GOR (SCF/Bbl)	Injection Volume Bbls	Make-Up Water Produced (Bbls)
33158	0	718444		0 MCF	

YEAR 2017 WELL COUNT

Producing Wells	Injection Wells	Shut-In Wells	Temporarily Abandoned Wells	SWD Wells	Water Supply Wells
11	5	7	4	1	0

YEAR RESERVOIR PRESSURE DATA (Report 3 most representative bottom hole pressures from more than one well, if possible.)

Datum (Feet Below S.L.)	Date Of Test	Well Name and Number	Well File Number	Extrapolated Reservoir Pressure (PSIG)

YEAR 2017 OPERATIONS

Producers Drilled	Injectors Drilled	Injectors Converted	Wells Shut-in	Wells TA	SWD Wells Drilled	SWD Wells Converted	Water Supply Wells Drilled	Water Supply Wells Converted
0	0	0	0	0	0	0	0	0

YEAR 2018 PROPOSED OPERATIONS

Producing Wells To Be Drilled	Injection Wells To Be Drilled	Injection Wells To Be Converted	Wells To Be Plugged	Wells To Be TA	SWD Wells To Be Drilled	SWD Wells To Be Converted	Water Supply Wells To Be Drilled	Water Supply Wells To Be Converted
0	0	0	0	0	0	0	0	0

YEAR MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PERFORMED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description

YEAR 2017 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PROPOSED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description

Comments

Signature <i>Sherri Daley</i>	Printed Name Sherri Daley	Title Regulatory Specialist	Date August 13, 2018
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**ANNUAL REPORT OF UNIT OPERATIONS - FORM 24**

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
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2017*Cure 1095***ND Oil & Gas Div.**

Unit DHSU	
Field Dickinson	Unitized Pool Heath/Madison
Current OOIP Estimate Bbls	Cumulative Oil Production 12808010 Bbls
Operator Scout Energy Management, LLC	
Telephone Number (972) 865-7597	
Address 4901 LBJ Freeway, Suite 300	City Dallas
State TX	Zip Code 75244

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YEAR 2016 PRODUCTION / INJECTION

Oil Produced (Bbls)	Gas Produced (MCF)	Water Produced (Bbls)	GOR (SCF/Bbl)	Injection Volume Bbls	Make-Up Water Produced (Bbls)
36230	0	920429	0	0 MCF	0

YEAR 2016 WELL COUNT

Producing Wells	Injection Wells	Shut-In Wells	Temporarily Abandoned Wells	SWD Wells	Water Supply Wells
16	7	0	4	1	1

YEAR 2016 RESERVOIR PRESSURE DATA (Report 3 most representative bottom hole pressures from more than one well, if possible.)

Datum (Feet Below S.L.)	Date Of Test	Well Name and Number	Well File Number	Extrapolated Reservoir Pressure (PSIG)

YEAR 2016 OPERATIONS

Producers Drilled	Injectors Drilled	Injectors Converted	Wells Shut-in	Wells TA	SWD Wells Drilled	SWD Wells Converted	Water Supply Wells Drilled	Water Supply Wells Converted
0	0	0	0	0	0	0	0	0

YEAR 2017 PROPOSED OPERATIONS

Producing Wells To Be Drilled	Injection Wells To Be Drilled	Injection Wells To Be Converted	Wells To Be Plugged	Wells To Be TA	SWD Wells To Be Drilled	SWD Wells To Be Converted	Water Supply Wells To Be Drilled	Water Supply Wells To Be Converted
0	0	0	0	0	0	0	0	0

YEAR 2016 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PERFORMED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description

YEAR 2017 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PROPOSED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description

Comments

Scout began operating these wells on 3/1/17. Prior to Scout taking ownership, C12 Energy operated the unit. Production numbers were taken from the NDIC website. There are no current major work overs planned for the unit at this time. If major work overs do occur, NOI sundries will be submitted to the NDIC.

Signature	Printed Name Justin Whitfield	Title Environmental Analyst	Date July 13, 2017
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INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 54260 (09-2004)

For Year

2015

Received

Case 1095

FEB 18 2016

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Field Dickinson	Unitized Pool Heath	Unit Dickinson Heath Sand Unit	Current OOIP Estimate 61,700,000 Bbls	Cumulative Oil Production 26,625,009 Bbls
Operator C12 Energy: North Dakota LLC			Telephone Number 303-848-3832	
Address 1900 Wazee St. Ste 200		City Denver	State CO	Zip Code 80202

YEAR 2015 PRODUCTION / INJECTION

Oil Produced (Bbls)	Gas Produced (MCF)	Water Produced (Bbls)	GOR (SCF/Bbl)	Injection Volume 1,351,834 Bbls	Make-Up Water Produced (Bbls)
49,439	0	1,335,758	0	0 MCF	132,433

YEAR 2015 WELL COUNT

Producing Wells	Injection Wells	Shut-In Wells	Temporarily Abandoned Wells	SWD Wells	Water Supply Wells
17	6	0	4	1	1

YEAR 2015 RESERVOIR PRESSURE DATA (Report 3 most representative bottom hole pressures from more than one well, if possible.)

Datum (Feet Below S.L.)	Date Of Test	Well Name and Number	Well File Number	Extrapolated Reservoir Pressure (PSIG)

YEAR 2015 OPERATIONS

Producers Drilled	Injectors Drilled	Injectors Converted	Wells Shut-in	Wells TA	SWD Wells Drilled	SWD Wells Converted	Water Supply Wells Drilled	Water Supply Wells Converted
0	0	0	0	0	0	0	0	0

YEAR 2016 PROPOSED OPERATIONS

Producing Wells To Be Drilled	Injection Wells To Be Drilled	Injection Wells To Be Converted	Wells To Be Plugged	Wells To Be TA	SWD Wells To Be Drilled	SWD Wells To Be Converted	Water Supply Wells To Be Drilled	Water Supply Wells To Be Converted
0	0	0	0	0	0	0	0	0

YEAR 2015 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PERFORMED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description
Dickinson Heath Sand Unit 13	4653	P&A
Dickinson Heath Sand Unit 06	4831	Converted from ESP to Rod Pump

YEAR 2016 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PROPOSED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description

Comments

Signature 	Printed Name Colin Leonard	Title Engineering Technician	Date February 16, 2016
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INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 54260 (09-2004)

For Year

2014*Case 1095*

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Field Dickinson		Unitized Pool Heath	Unit Dickinson Heath Sand Unit	Current OOIP Estimate 61,700,000 Bbls	Cumulative Oil Production 26,575,570 Bbls
Operator C12 Energy, LLC				Telephone Number 303-848-3900	
Address 1900 Wazee Street, Suite 200			City Denver	State CO	Zip Code 80202

YEAR 2014 PRODUCTION / INJECTION

Oil Produced (Bbls)	Gas Produced (MCF)	Water Produced (Bbls)	GOR (SCF/Bbl)	Injection Volume 1,165,595 Bbls 0 MCF	Make-Up Water Produced (Bbls) 76,974
42,628	0	1,088,621	0		

YEAR 2014 WELL COUNT

Producing Wells	Injection Wells	Shut-In Wells	Temporarily Abandoned Wells	SWD Wells	Water Supply Wells
17	6	1	4	1	1

YEAR 2014 RESERVOIR PRESSURE DATA (Report 3 most representative bottom hole pressures from more than one well, if possible.)

Datum (Feet Below S.L.)	Date Of Test	Well Name and Number	Well File Number	Extrapolated Reservoir Pressure (PSIG)

YEAR 2014 OPERATIONS

Producers Drilled	Injectors Drilled	Injectors Converted	Wells Shut-in	Wells TA	SWD Wells Drilled	SWD Wells Converted	Water Supply Wells Drilled	Water Supply Wells Converted
0	0	0	1	0	0	0	0	0

YEAR 2015 PROPOSED OPERATIONS

Producing Wells To Be Drilled	Injection Wells To Be Drilled	Injection Wells To Be Converted	Wells To Be Plugged	Wells To Be TA	SWD Wells To Be Drilled	SWD Wells To Be Converted	Water Supply Wells To Be Drilled	Water Supply Wells To Be Converted
0	0	0	1	0	0	0	0	0

YEAR 2014 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PERFORMED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description
Dickinson Heath Sand Unit 09	4381	Cleaned out well and reperforated. Recommended water injection.
Dickinson Heath Sand Unit 70	11971	Fixed casing leak. Reperforated. Recommended water injection.

YEAR 2015 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PROPOSED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description
Dickinson Heath Sand Unit 13	4653	Plan to P & A well.

Comments

No static bottom hole pressure samples were taken in 2014. We have taken numerous samples in early 2015 including DHSU #10 - 2568 psi, DHSU #20 - 2063 psi, DHSU #71 - 2450 psi.

Signature 	Printed Name Gavin Ramsay	Title Production Engineer	Date May 7, 2015
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**ANNUAL REPORT OF UNIT OPERATIONS - FORM 24**

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 54260 (09-2004)

*Case 1095*

For Year
2013

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL.

Field Dickinson		Unitized Pool Heath	Unit Dickinson Heath Sand Unit	Current OOIP Estimate 61700000 Bbls	Cumulative Oil Production Bbls
Operator C12 Energy, LLC.			Telephone Number (617) 674-2478		
Address 2054 University Ave, Suite 400		City Berkeley	State CA	Zip Code 94704	

YEAR 2013 PRODUCTION / INJECTION

Oil Produced (Bbls)	Gas Produced (MCF)	Water Produced (Bbls)	GOR (SCF/Bbl)	Injection Volume 1046052 Bbls	Make-Up Water Produced (Bbls)
48216	915	1157401	19	MCF	0

YEAR 2013 WELL COUNT

Producing Wells	Injection Wells	Shut-In Wells	Temporarily Abandoned Wells	SWD Wells	Water Supply Wells
18	5	0	5	1	0

YEAR 2013 RESERVOIR PRESSURE DATA (Report 3 most representative bottom hole pressures from more than one well, if possible.)

Datum (Feet Below S.L.)	Date Of Test	Well Name and Number	Well File Number	Extrapolated Reservoir Pressure (PSIG)
	07/18/13	DHSU #20	3700	1720
	07/29/13	DHSU #10	4326	2802
	07/18/13	DHSU #68	11953	2183

YEAR 2013 OPERATIONS

Producers Drilled	Injectors Drilled	Injectors Converted	Wells Shut-in	Wells TA	SWD Wells Drilled	SWD Wells Converted	Water Supply Wells Drilled	Water Supply Wells Converted
0	0	0	0	0	0	0	0	0

YEAR 2014 PROPOSED OPERATIONS

Producing Wells To Be Drilled	Injection Wells To Be Drilled	Injection Wells To Be Converted	Wells To Be Plugged	Wells To Be TA	SWD Wells To Be Drilled	SWD Wells To Be Converted	Water Supply Wells To Be Drilled	Water Supply Wells To Be Converted
0	0	0	0	0	0	0	0	0

YEAR 2013 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PERFORMED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description

YEAR 2013 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PROPOSED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description
DHSU #9	4381	TA to Injector

Comments

C12 Energy, LLC. purchased DHSU #44, a water production well, from Conoco. The water will be used to re-pressureize the field to improve production.

Signature 	Printed Name Tyson Taylor	Title Operations Manager	Date March 25, 2014
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**ANNUAL REPORT OF UNIT OPERATIONS - FORM 244N 2013**

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 54260 (09-2004)



For Year

2012

Case 1095

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL.

Unit Dickinson Heath Sand Unit	
Field Dickinson	Unitized Pool Heath
Current OOIP Estimate 61700000 Bbls	Cumulative Oil Production Bbls
Operator Cline Production Company	
Telephone Number (406) 254-0496	
Address PO Box 20736	City Billings
State MT	Zip Code 59104

YEAR 2012 PRODUCTION / INJECTION

Oil Produced (Bbls)	Gas Produced (MCF)	Water Produced (Bbls)	GOR (SCF/Bbl)	Injection Volume 1163455 Bbls	Make-Up Water Produced (Bbls)
52688	1797	1164119	26	MCF	0

YEAR 2012 WELL COUNT

Producing Wells	Injection Wells	Shut-In Wells	Temporarily Abandoned Wells	SWD Wells	Water Supply Wells
18	5	0	5	1	0

YEAR 2012 RESERVOIR PRESSURE DATA (Report 3 most representative bottom hole pressures from more than one well, if possible.)

Datum (Feet Below S.L.)	Date Of Test	Well Name and Number	Well File Number	Extrapolated Reservoir Pressure (PSIG)
				3200

YEAR 2012 OPERATIONS

Producers Drilled	Injectors Drilled	Injectors Converted	Wells Shut-in	Wells TA	SWD Wells Drilled	SWD Wells Converted	Water Supply Wells Drilled	Water Supply Wells Converted
0	0	0	0	0	0	0	0	0

YEAR 2013 PROPOSED OPERATIONS

Producing Wells To Be Drilled	Injection Wells To Be Drilled	Injection Wells To Be Converted	Wells To Be Plugged	Wells To Be TA	SWD Wells To Be Drilled	SWD Wells To Be Converted	Water Supply Wells To Be Drilled	Water Supply Wells To Be Converted
0	0	0	0	0	0	0	0	0

YEAR 2012 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PERFORMED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description
DHSU 35	3809	Plugged
DHSU 53	5606	Squeezed

YEAR 2012 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PROPOSED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description

Comments

Signature <i>Dee Blair</i>	Printed Name Dee Blair	Title Agent	Date
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**ANNUAL REPORT OF UNIT OPERATIONS - FORM 24**

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 54260 (09-2004)



For Year **2011**
2012

Case 1095

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL.

Dickinson Heath Sand Unit			
Field Dickinson	Unitized Pool Heath	Current OOIIP Estimate 61700000 Bbls	Cumulative Oil Production Bbls
Operator Cline Production Company			Telephone Number (406) 254-9496
Address PO Box 20736		City Billings	State MT Zip Code 59104

YEAR 2011 PRODUCTION / INJECTION

Oil Produced (Bbls)	Gas Produced (MCF)	Water Produced (Bbls)	GOR (SCF/Bbl)	Injection Volume 1005320 Bbls	Make-Up Water Produced (Bbls)
46665	1899	1011103	26	MCF	0

YEAR 2011 WELL COUNT

Producing Wells	Injection Wells	Shut-In Wells	Temporarily Abandoned Wells	SWD Wells	Water Supply Wells
18	5	0	6	1	0

YEAR 2011 RESERVOIR PRESSURE DATA (Report 3 most representative bottom hole pressures from more than one well, if possible.)

Datum (Feet Below S.L.)	Date Of Test	Well Name and Number	Well File Number	Extrapolated Reservoir Pressure (PSIG)
				3200

YEAR 2011 OPERATIONS

Producers Drilled	Injectors Drilled	Injectors Converted	Wells Shut-in	Wells TA	SWD Wells Drilled	SWD Wells Converted	Water Supply Wells Drilled	Water Supply Wells Converted
0	0	0	0	0	0	0	0	0

YEAR 2012 PROPOSED OPERATIONS

Producing Wells To Be Drilled	Injection Wells To Be Drilled	Injection Wells To Be Converted	Wells To Be Plugged	Wells To Be TA	SWD Wells To Be Drilled	SWD Wells To Be Converted	Water Supply Wells To Be Drilled	Water Supply Wells To Be Converted
0	0	0	3	0	0	0	0	0

YEAR 2011 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PERFORMED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description
DHSU 57	6237	Plugged

YEAR 2012 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PROPOSED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description
DHSU 13	4653	Possible remedial treatment
DHSU 35	3809	Possible P&A
DHSU 48	5434	Possible P&A

Comments

Signature <i>Dee Blair</i>	Printed Name Dee Blair	Title Agent	Date 1/26/12
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**ANNUAL REPORT OF UNIT OPERATIONS**

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN _____ (09-2004)



For Year

2010*Cue 1095*

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL.

Field Dickinson		Unitized Pool Heath	Unit Dickinson Heath Sand Unit
Operator Cline Production Company		Current OOIP Estimate 61,700,000 Bbls	Cumulative Oil Production Bbls
Address P.O. Box 20736		City Billings	Telephone Number
		State MT	Zip Code 59104-0736

YEAR 2010 PRODUCTION / INJECTION

Oil Produced (Bbls)	Gas Produced (MCF)	Water Produced (Bbls)	GOR (SCF/Bbl)	Injection Volume 1,081,430 Bbls MCF	Make-Up Water Produced (Bbls)
51,834	1,937	1,085,699	26		0

YEAR 2010 WELL COUNT

Producing Wells	Injection Wells	Shut-In Wells	Temporarily Abandoned Wells	SWD Wells	Water Supply Wells
18	6	0	6	1	0

YEAR 2010 RESERVOIR PRESSURE DATA (Report 3 most representative bottom hole pressures from more than one well, if possible.)

Datum (Feet Below S.L.)	Date Of Test	Well Name and Number	Well File Number	Extrapolated Reservoir Pressure (PSIG)
				3100

YEAR 2010 OPERATIONS

Producers Drilled	Injectors Drilled	Injectors Converted	Wells Shut-in	Wells TA	SWD Wells Drilled	SWD Wells Converted	Water Supply Wells Drilled	Water Supply Wells Converted
0	0	0	0	0	0	0	0	0

YEAR 2011 PROPOSED OPERATIONS

Producing Wells To Be Drilled	Injection Wells To Be Drilled	Injection Wells To Be Converted	Wells To Be Plugged	Wells To Be TA	SWD Wells To Be Drilled	SWD Wells To Be Converted	Water Supply Wells To Be Drilled	Water Supply Wells To Be Converted
0	0	0	0	0	0	0	0	0

YEAR 2010 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PERFORMED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description

YEAR 2011 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PROPOSED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description

Comments

Signature <i>Dee Blair</i>	Printed Name Dee Blair	Title Agent	Date January 31, 2011
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**ANNUAL REPORT OF UNIT OPERATIONS - FORM 24**

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN _____ (09-2004)

For Year

2009

Case 1095

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM
PLEASE SUBMIT THE ORIGINAL.

Field Dickinson	Unitized Pool Heath	Unit Dickinson Heath Sand Unit	Current OOIP Estimate 61,700,000 Bbls	Cumulative Oil Production Bbls
Operator Cline Production Company		Telephone Number 406-254-9496		
Address P.O. Box 20736		City Billings	State MT	Zip Code 59104-0736

YEAR 2009 PRODUCTION / INJECTION

Oil Produced (Bbls)	Gas Produced (MCF)	Water Produced (Bbls)	GOR (SCF/Bbl)	Injection Volume 796,495 Bbls	Make-Up Water Produced (Bbls)
41,806	1,871	842,889	22	MCF	0

YEAR 2009 WELL COUNT

Producing Wells	Injection Wells	Shut-In Wells	Temporarily Abandoned Wells	SWD Wells	Water Supply Wells
18	5	0	7	1	0

YEAR 2009 RESERVOIR PRESSURE DATA (Report 3 most representative bottom hole pressures from more than one well, if possible.)

Datum (Feet Below S.L.)	Date Of Test	Well Name and Number	Well File Number	Extrapolated Reservoir Pressure (PSIG)
				3100

YEAR 2009 OPERATIONS

Producers Drilled	Injectors Drilled	Injectors Converted	Wells Shut-in	Wells TA	SWD Wells Drilled	SWD Wells Converted	Water Supply Wells Drilled	Water Supply Wells Converted
0	0	0	0	1	0	0	0	0

YEAR 2010 PROPOSED OPERATIONS

Producing Wells To Be Drilled	Injection Wells To Be Drilled	Injection Wells To Be Converted	Wells To Be Plugged	Wells To Be TA	SWD Wells To Be Drilled	SWD Wells To Be Converted	Water Supply Wells To Be Drilled	Water Supply Wells To Be Converted
0	0	0	0	0	0	0	0	0

YEAR MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PERFORMED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description

YEAR MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PROPOSED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description

Comments

Signature <i>Dee Blair</i>	Printed Name Dee Blair	Title Agent	Date January 26, 2010
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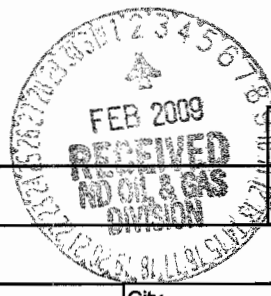
**ANNUAL REPORT OF UNIT OPERATIONS - FORM 24**

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN _____ (09-2004)

Case 1095

For Year
2008

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL.



Field Dickinson		Unitized Pool Heath	Unit Dickinson Heath Sand Unit	
Operator Cline Production Company		Current OOIP Estimate 61,700,000 Bbls		Cumulative Oil Production Bbls
Address P.O. Box 20736		City Billings	State MT	Zip Code 59104-0736

YEAR 2008 PRODUCTION / INJECTION

Oil Produced (Bbls)	Gas Produced (MCF)	Water Produced (Bbls)	GOR (SCF/Bbl)	Injection Volume	Make-Up Water Produced (Bbls)
65,126	2,071	1,191,191	31	1,190,665 Bbls	0
				MCF	

YEAR 2008 WELL COUNT

Producing Wells	Injection Wells	Shut-In Wells	Temporarily Abandoned Wells	SWD Wells	Water Supply Wells
18	6	0	6	1	0

YEAR 2008 RESERVOIR PRESSURE DATA (Report 3 most representative bottom hole pressures from more than one well, if possible.)

Datum (Feet Below S.L.)	Date Of Test	Well Name and Number	Well File Number	Extrapolated Reservoir Pressure (PSIG)
				3100 (EST.)

YEAR 2008 OPERATIONS

Producers Drilled	Injectors Drilled	Injectors Converted	Wells Shut-in	Wells TA	SWD Wells	Water Supply Wells
0	0	0	0	0	Drilled	Converted
					0	0
					0	0

YEAR 2009 PROPOSED OPERATIONS

Producing Wells To Be Drilled	Injection Wells To Be Drilled	Injection Wells To Be Converted	Wells To Be Plugged	Wells To Be TA	SWD Wells To Be	Water Supply Wells To Be
0	0	0	0	0	Drilled	Converted
					0	0
					0	0

YEAR 2005 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PERFORMED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description

YEAR 2006 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PROPOSED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description

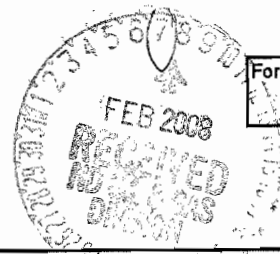
Comments

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Signature <i>Dee Blair</i>	Printed Name Dee Blair	Title Agent	Date January 30, 2009
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**ANNUAL REPORT OF UNIT OPERATIONS - FORM 24**

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN _____ (09-2004)

*Case 1095*

For Year

2007

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL.

Unit Dickinson Heath Sand Unit	
Current OOIP Estimate 61700000 Bbls	Cumulative Oil Production ? Bbls
Telephone Number (406) 254-9496	
Address P.O. Box 20736	City Billings
State MT	Zip Code 59104-0736

YEAR 2007 PRODUCTION / INJECTION

Oil Produced (Bbls)	Gas Produced (MCF)	Water Produced (Bbls)	GOR (SCF/Bbl)	Injection Volume 840375 Bbls	Make-Up Water Produced (Bbls)
49252	1948	863652	25	MCF	

YEAR 2007 WELL COUNT

Producing Wells	Injection Wells	Shut-In Wells	Temporarily Abandoned Wells	SWD Wells	Water Supply Wells
18	6	0	6	1	0

YEAR 2007 RESERVOIR PRESSURE DATA (Report 3 most representative bottom hole pressures from more than one well, if possible.)

Datum (Feet Below S.L.)	Date Of Test	Well Name and Number	Well File Number	Extrapolated Reservoir Pressure (PSIG)
				3100 (est.)

YEAR 2007 OPERATIONS

Producers Drilled	Injectors Drilled	Injectors Converted	Wells Shut-in	Wells TA	SWD Wells Drilled	SWD Wells Converted	Water Supply Wells Drilled	Water Supply Wells Converted
0	0	0	0	0	0	0	0	0

YEAR 2008 PROPOSED OPERATIONS

Producing Wells To Be Drilled	Injection Wells To Be Drilled	Injection Wells To Be Converted	Wells To Be Plugged	Wells To Be TA	SWD Wells To Be Drilled	SWD Wells To Be Converted	Water Supply Wells To Be Drilled	Water Supply Wells To Be Converted

YEAR 2007 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PERFORMED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description

YEAR 2008 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PROPOSED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description

Comments

Signature <i>Dee Blair</i>	Printed Name Dee Blair	Title Agent	Date January 31, 2008
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**ANNUAL REPORT OF UNIT OPERATIONS - FORM 24**

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN _____ (09-2004)

For Year

2006

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL.

Field Dickinson		Unitized Pool Heath	Unit	Current OOIP Estimate 61700000 Bbls	Cumulative Oil Production ? Bbls
Operator Cline Production Company				Telephone Number (406) 254-9496	
Address P.O. Box 20736			City Billings	State MT	Zip Code 59104-0736

YEAR 2006 PRODUCTION / INJECTION

Oil Produced (Bbls)	Gas Produced (MCF)	Water Produced (Bbls)	GOR (SCF/Bbl)	Injection Volume 898994 Bbls MCF	Make-Up Water Produced (Bbls)
51185	2329	925515	22		

YEAR 2006 WELL COUNT

Producing Wells	Injection Wells	Shut-In Wells	Temporarily Abandoned Wells	SWD Wells	Water Supply Wells
18	6	0	6	1	0

YEAR 2006 RESERVOIR PRESSURE DATA (Report 3 most representative bottom hole pressures from more than one well, if possible.)

Datum (Feet Below S.L.)	Date Of Test	Well Name and Number	Well File Number	Extrapolated Reservoir Pressure (PSIG)
				3100 (EST)

YEAR 2006 OPERATIONS

Producers Drilled	Injectors Drilled	Injectors Converted	Wells Shut-in	Wells TA	SWD Wells Drilled	SWD Wells Converted	Water Supply Wells Drilled	Water Supply Wells Converted
0	0	0	0	0	0	0	0	0

YEAR 2007 PROPOSED OPERATIONS

Producing Wells To Be Drilled	Injection Wells To Be Drilled	Injection Wells To Be Converted	Wells To Be Plugged	Wells To Be TA	SWD Wells To Be Drilled	SWD Wells To Be Converted	Water Supply Wells To Be Drilled	Water Supply Wells To Be Converted
0	0	0	0	0	0	0	0	0

YEAR 2006 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PERFORMED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description
DHSU #16	4284	Plugged 1/06
DHSU #41	4337	Plugged 1/06

YEAR 2007 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PROPOSED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description

Comments

Signature 	Printed Name Dee Blair	Title Agent	Date March 2, 2007
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**ANNUAL REPORT OF UNIT OPERATIONS - FORM 24**

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN _____ (09-2004)

For Year

2005

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL.

Field Dickinson	Unitized Pool Heath	Unit Dickinson Heath Sand Unit	Current OOIP Estimate 61,700,000 Bbls	Cumulative Oil Production ? Bbls
Operator Cline Production Company		Telephone Number		
Address P.O. Box 20736		City Billings	State MT	Zip Code 59104-0736

YEAR 2005 PRODUCTION / INJECTION

Oil Produced (Bbls)	Gas Produced (MCF)	Water Produced (Bbls)	GOR (SCF/Bbl)	Injection Volume 1,020,383 Bbls	Make-Up Water Produced (Bbls)
53,392	1,802	1,023,066	30	MCF	0

YEAR 2005 WELL COUNT

Producing Wells	Injection Wells	Shut-In Wells	Temporarily Abandoned Wells	SWD Wells	Water Supply Wells
18	6	0	8	1	0

YEAR 2005 RESERVOIR PRESSURE DATA (Report 3 most representative bottom hole pressures from more than one well, if possible.)

Datum (Feet Below S.L.)	Date Of Test	Well Name and Number	Well File Number	Extrapolated Reservoir Pressure (PSIG)
				3100 (est.)

YEAR 2005 OPERATIONS

Producers Drilled	Injectors Drilled	Injectors Converted	Wells Shut-in	Wells TA	SWD Wells Drilled	SWD Wells Converted	Water Supply Wells Drilled	Water Supply Wells Converted
0	0	0	0	0	0	0	0	0

YEAR 2006 PROPOSED OPERATIONS

Producing Wells To Be Drilled	Injection Wells To Be Drilled	Injection Wells To Be Converted	Wells To Be Plugged	Wells To Be TA	SWD Wells To Be Drilled	SWD Wells To Be Converted	Water Supply Wells To Be Drilled	Water Supply Wells To Be Converted
0	0	0	2	0	0	0	0	0

YEAR 2005 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PERFORMED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description
DHSU 52	5600	Plugged 1/6/05

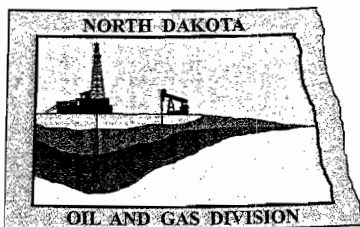
YEAR 2006 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PROPOSED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description
DHSU 16	4284	Plan to plug
DHSU 41	4337	Plan to plug

Comments

ALL INFORMATION CONTAINED HEREIN IS UNCLASSIFIED
DATE 10-01-2009 BY 60322 UCBAW/ALP/STP

Signature <i>Dee Blair</i>	Printed Name Dee Blair	Title Agent	Date May 12, 2006
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Oil and Gas Division

Lynn D. Helms - Director

Bruce E. Hicks - Assistant Director

Department of Mineral Resources

Lynn D. Helms - Director

North Dakota Industrial Commission

www.oilgas.nd.gov

May 3, 2006

case 1095

Ms. Dee Blair
Cline Production Company
P.O. Box 20736
Billings, MT 59104-0736

**RE: ANNUAL REPORT OF UNIT OPERATIONS – FORM 24
Dickinson-Heath-Sand Unit**

Dear Ms. Blair:

The Annual Report of Unit Operations – Form 24 is due annually on March 31 for all units. To date, this report has not been submitted for the above captioned unit. At this time, please submit the 2005 Annual Report of Unit Operations – Form 24 for the captioned unit.

If you have any questions, do not hesitate to contact me.

Sincerely,

David J. McCusker
Petroleum Engineer

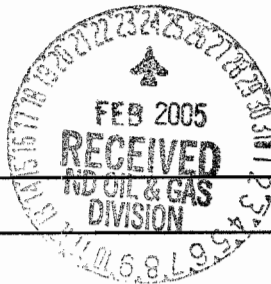
**ANNUAL REPORT OF UNIT OPERATIONS - FORM 24**

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN _____ (09-2004)

1095

For Year
2004

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL.



Field Dickinson		Unitized Pool Heath	Unit Dickinson Heath Sand Unit	
Operator Cline Production Company		Current OOIP Estimate 61700000 Bbls		Cumulative Oil Production ? Bbls
Address P O Box 20736		City Billings		Telephone Number (406) 254-9496
		State mt	Zip Code 59104-0736	

YEAR 2004 PRODUCTION / INJECTION

Oil Produced (Bbls)	Gas Produced (MCF)	Water Produced (Bbls)	GOR (SCF/Bbl)	Injection Volume	Make-Up Water Produced (Bbls)
57297	2045	1072136	41	984019 Bbls	0
				MCF	

YEAR 2004 WELL COUNT

Producing Wells	Injection Wells	Shut-In Wells	Temporarily Abandoned Wells	SWD Wells	Water Supply Wells
18	6	0	9	1	0

YEAR RESERVOIR PRESSURE DATA (Report 3 most representative bottom hole pressures from more than one well, if possible.)

Datum (Feet Below S.L.)	Date Of Test	Well Name and Number	Well File Number	Extrapolated Reservoir Pressure (PSIG)
				3100 (act.)

YEAR 2004 OPERATIONS

Producers Drilled	Injectors Drilled	Injectors Converted	Wells Shut-in	Wells TA	SWD Wells Drilled	SWD Wells Converted	Water Supply Wells Drilled	Water Supply Wells Converted
0	0	0	0	0	0	0	0	0

YEAR 2005 PROPOSED OPERATIONS

Producing Wells To Be Drilled	Injection Wells To Be Drilled	Injection Wells To Be Converted	Wells To Be Plugged	Wells To Be TA	SWD Wells To Be Drilled	SWD Wells To Be Converted	Water Supply Wells To Be Drilled	Water Supply Wells To Be Converted
0	0	0	0	0	0	0	0	0

YEAR 2004 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PERFORMED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description
DHSU 50	5525	Plugged 6/04
DHSU 52	5600	Plugged 1/6/05

YEAR 2004 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PROPOSED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description
DHSU 32	4332	Possibly return to production
DHSU 16	4284	Plug & Abandon

Comments

Signature <i>Dee Blair</i>	Printed Name Dee Blair	Title Agent	Date February 21, 2005
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**ANNUAL REPORT OF UNIT OPERATIONS - FORM 24**

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
(03-2001)

For Year

2003

1095

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL.

Field DICKINSON		Unitized Pool HEATH	Unit DICKINSON HEATH SAND UNIT
Operator CLINE PRODUCTION CO.		Current OOIP Estimate 61,700,000 Bbls	Cumulative Oil Production ? Bbls
Address P.O. Box 20736		City BILLINGS	State MT Zip Code 59104

YEAR 2003 PRODUCTION / INJECTION

Oil Produced (Bbls)	Gas Produced (MCF)	Water Produced (Bbls)	GOR (SCF/Bbl)	Injection Volume	Make-Up Water Produced (Bbls)
64,416	2308	955,937	89	605,037 Bbls MCF	0

YEAR 2003 WELL COUNT

Producing Wells	Injection Wells	Shut-In Wells	Temporarily Abandoned Wells	SWD Wells	Water Supply Wells
18	6	1	9	1	0

YEAR RESERVOIR PRESSURE DATA (Report 3 most representative bottom hole pressures from more than one well, if possible.)

Datum (Feet Below S.L.)	Date Of Test	Well Name and Number	Well File Number	Extrapolated Reservoir Pressure (PSIG)
				3100 psig (estimated)

YEAR 2003 OPERATIONS

YEAR 2003 OPERATIONS					SWD Wells		Water Supply Wells	
Producers Drilled	Injectors Drilled	Injectors Converted	Wells Shut-in	Wells TA	Drilled	Converted	Drilled	Converted
0	0	0	0	0	0	0	0	0

YEAR 2004 PROPOSED OPERATIONS

Producing Wells To Be Drilled	Injection Wells To Be Drilled	Injection Wells To Be Converted	Wells To Be Plugged	Wells To Be TA	SWD Wells To Be		Water Supply Wells To Be	
					Drilled	Converted	Drilled	Converted
0	0	0	0	0	0	0	0	0

YEAR 2003 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PERFORMED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description
DHSH 2	4905	P+A'd
DHSH 3	5041	P+A'd
DHSH 21	4266	Returned to active injector
DHSH 45	5370	" " "
DHSH 56	6236	P+A'd
DHSH 71	12037	CHANGED FROM ESP TO PUMPING UNIT

YEAR 2004 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PROPOSED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description
DHSH 32	4332	RETURN TO PRODUCTION
DHSH 16	4284	P+A
DHSH 52	5600	P+A

Comments

Signature <i>Dee Blair</i>	Printed Name DEE BLAIR	Title AGENT	Date 2/2/04
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ANNUAL REPORT OF UNIT OPERATIONS - FORM 24

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
(03-2001)

For Year
2002

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL.

Field DICKINSON	Unitized Pool HEATH	Unit DICKINSON HEATH SAND UNIT	Current OOIP Estimate 61,700,000 Bbls	Cumulative Oil Production ? Bbls
Operator CLINE PRODUCTION Co.			Telephone Number	
Address P.O. Box 20736		City BILLINGS	State MT	Zip Code 59104

YEAR 2002 PRODUCTION / INJECTION

Oil Produced (Bbls)	Gas Produced (MCF)	Water Produced (Bbls)	GOR (SCF/Bbl)	Injection Volume	Make-Up Water Produced (Bbls)
56,454	2180	896,685	39	857,978 Bbls MCF	0

YEAR 2002 WELL COUNT

Producing Wells	Injection Wells	Shut-In Wells	Temporarily Abandoned Wells	SWD Wells	Water Supply Wells
17	4	3	12	1	0

YEAR 2002 RESERVOIR PRESSURE DATA (Report 3 most representative bottom hole pressures from more than one well, if possible.)

Datum (Feet Below S.L.)	Date Of Test	Well Name and Number	Well File Number	Extrapolated Reservoir Pressure (PSIG)
				2100 PSIG (estimated)

YEAR 2002 OPERATIONS

YEAR 2010 OPERATIONS					SWD Wells		Water Supply Wells	
Producers Drilled	Injectors Drilled	Injectors Converted	Wells Shut-in	Wells TA	Drilled	Converted	Drilled	Converted
0	0	0	0	0	0	0	0	0

YEAR 2002 PROPOSED OPERATIONS

Producing Wells To Be Drilled	Injection Wells To Be Drilled	Injection Wells To Be Converted	Wells To Be Plugged	Wells To Be TA	SWD Wells To Be		Water Supply Wells To Be	
					Drilled	Converted	Drilled	Converted
0	0	0	0	0	0	0	0	0

YEAR 2002 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PERFORMED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description
DHSH #40	4150	PLACED BACK IN PRODUCTION (PUMPING UNIT)

YEAR 2003 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PROPOSED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description
NONE		

Comments

Signature <i>Dee Blair</i>	Printed Name DEE BLAIR	Title AGENT	Date 1/31/03
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ANNUAL REPORT OF UNIT OPERATIONS - FORM 24

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
(03-2001)

1095

For Year
2001

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL.



Field DICKINSON	Unitized Pool HEATH	Current OOIP Estimate 41,700,000 Bbls	Cumulative Oil Production ? Bbls
Operator CLINE PRODUCTION COMPANY		Telephone Number 406-254-9496	
Address P.O. Box 20736		City BILLINGS	State MT
		Zip Code 57104	

YEAR 2001 PRODUCTION / INJECTION

Oil Produced (Bbls)	Gas Produced (MCF)	Water Produced (Bbls)	GOR (SCF/Bbl)	Injection Volume	Make-Up Water Produced (Bbls)
60,967	2084	1,044,123	34	1,044,123 Bbls	
				MCF	0

YEAR 2001 WELL COUNT

Producing Wells	Injection Wells	Shut-In Wells	Temporarily Abandoned Wells	SWD Wells	Water Supply Wells
17	4	3	15	1	0

YEAR 2001 RESERVOIR PRESSURE DATA (Report 3 most representative bottom hole pressures from more than on well, if possible.)

Datum (Feet Below S.L.)	Date Of Test	Well Name and Number	Well File Number	Extrapolated Reservoir Pressure (PSIG)
				3100 PSIG (estimated)

YEAR 2001 OPERATIONS

Producers Drilled	Injectors Drilled	Injectors Converted	Wells Shut-in	Wells TA	SWD Wells	Water Supply Wells
0	0	0	0	0	Drilled	Converted
					0	0
					0	0

YEAR 2002 PROPOSED OPERATIONS

Producing Wells To Be Drilled	Injection Wells To Be Drilled	Injection Wells To Be Converted	Wells To Be Plugged	Wells To Be TA	SWD Wells To Be	Water Supply Wells To Be
					Drilled	Converted
0	0	0	0	0	0	0
					0	0

YEAR 2001 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PERFORMED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description
NONE		

YEAR 2002 MAJOR WORKOVERS OR ARTIFICIAL LIFT CHANGES PROPOSED (Attach additional pages if necessary.)

Well Name and Number	Well File Number	Brief Description
NONE		

Comments

Signature <i>Dee Blair</i>	Printed Name DEE BLAIR	Title AGENT	Date 1/23/02
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BEFORE THE INDUSTRIAL COMMISSION
OF THE STATE OF NORTH DAKOTA

CASE NO. 1095
ORDER NO. 1173

IN THE MATTER OF A HEARING CALLED ON A
MOTION OF THE COMMISSION TO CONSIDER THE
APPLICATION OF CONTINENTAL OIL COMPANY
FOR AN ORDER CREATING THE DICKINSON
HEATH UNIT, PROVIDING FOR THE UNITIZED
MANAGEMENT, OPERATION AND FURTHER
DEVELOPMENT OF THE DICKINSON HEATH SAND
SOURCE OF SUPPLY OF OIL AND GAS LOCATED
IN TOWNSHIPS 140 AND 139 NORTH, RANGE 97
WEST, AND TOWNSHIP 140 NORTH, RANGE 96
WEST, STARK COUNTY, NORTH DAKOTA,
DEFINING THE UNIT AREA AND APPROVAL OF
THE PLAN OF UNITIZATION TO SUCH UNIT AND
UNIT AREA.

ORDER OF THE COMMISSION

BY THE COMMISSION:

Pursuant to legal notice this cause came on for hearing at 9:30 a.m. on the 12th day of September, 1972, at Bismarck, North Dakota, before the Industrial Commission of North Dakota, hereinafter referred to as the "Commission."

NOW, on this 10th day of October, 1972, the Commission, a quorum being present, having considered the testimony adduced and the exhibits received at said hearing, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That Continental Oil Company has duly filed with the Commission an application for an order creating the Dickinson Heath Sand Unit and prescribing a plan of unitization pursuant to Section 38-08-09.1 et seq. of the North Dakota Century Code.

(3) That more than 45 days prior to the hearing, Continental Oil Company mailed, postage prepaid, notice of the purpose, time and place of the hearing, along with a copy of the application and the proposed plan of unitization, to each affected person owning an interest of record in the unit outline at such person's last known post office address, and that an affidavit of such mailing was filed with the application.

(4) That more than 45 days prior to the hearing, the applicant filed with the Commission all engineering, geological and other technical exhibits subsequently used at the hearing, and the above described notice stated that such exhibits had been so filed and were available for inspection.

(5) That the unitized management, operation and further development of the common source of supply of oil and gas known as the Dickinson Heath and West Dickinson Heath Pools is reasonably necessary in order to effectively carry on pressure maintenance or repressuring operations,

cycling operations, waterflooding operations, or any combination thereof, or any other form of joint effort calculated to substantially increase the ultimate recovery of oil and gas from the common source of supply.

(6) That one or more of such unitized methods of operation as applied to such common source are feasible, will prevent waste and will with reasonable probability result in the increased recovery of substantially more oil and gas from the common source of supply than would otherwise be recovered.

(7) That the estimated additional cost, if any, of conducting such operations will not exceed the value of the additional oil and gas so recovered.

(8) That such unitization and adoption of one or more of such unitized methods of operation is for the common good and will result in the general advantage of the owners of the oil and gas rights in the common source of supply directly affected.

(9) That the plan of unitization proposed by the applicant, as attached to the application in this cause and received in evidence as applicant's Exhibit No. 3, contains fair, reasonable and equitable provisions for:

(a) The efficient unitized management or control of the further development and operation of the Unit Area for the recovery of oil and gas from the common source of supply affected.

(b) The division of interest or formula for the apportionment and allocation of the unit product among and to the several and separately owned tracts within the Unit Area is such as will reasonably permit persons otherwise entitled to share in or benefit by the production from such separately owned tracts to produce or receive in lieu thereof their fair, equitable and reasonable share of the unit production or other benefits thereof.

(c) The manner in which the unit and the further development and operation of the Unit Area shall or may be financed and the basis, terms and conditions upon which the cost and expense thereof shall be apportioned among and assessed against the tracts and interests made chargeable therewith, including a detailed accounting procedure governing all charges and credits incident to such operations, and makes reasonable provision for carrying or otherwise financing lessees who are unable to promptly meet their financial obligations in connection with the unit.

(d) The procedure and basis upon which wells, equipment and other properties of the several lessees within the Unit Area are to be taken over and used for unit operations, including the method of arriving at the compensation therefore, or of otherwise proportionately equalizing or adjusting the investment of the several lessees in the project as of the effective date of unit operation.

(e) The creation of an operating committee to have general overall management and control of the unit and the conduct of its business and affairs and the operations carried on by it, together with the creation or designation of such other sub-committees, boards, or officers to function under authority of the operating committee as may be necessary, proper or convenient in the efficient management of the unit, defining the powers and duties of all such committees, boards, or officers and prescribing their tenure and time and method for their selection.

(f) The time when the plan of unitization shall become and be effective.

(g) The time when and conditions under which and the method by which the unit shall or may be dissolved and its affairs wound up.

(10) That the proposed Dickinson Heath Sand Unit embraces the whole common source of supply of oil and gas heretofore defined by the Commission as the Dickinson and West Dickinson Heath Pools.

(11) That the plan of unitization proposed by the applicant, provides that each lessee grants to Unit Operator a lien upon its Oil and Gas Rights in each Tract and a security interest in its share of Unitized Substances when extracted and its interest in all unit equipment to secure payment of its share of Unit Expense, together with interest thereon at the rate of ten percent (10%) per annum. And that said rate of interest exceeds the legal rate permitted by the North Dakota Century Code.

(12) That David J. Sorenson, owner of a leasehold interest in a spacing unit within the unit Area described as the north half (N/2) of Section 1, Township 139 North, Range 97 West, Stark County, North Dakota, desires to drill a well at the proper location on said spacing unit.

IT IS THEREFORE ORDERED:

(1) That as described in the plan of unitization, the Dickinson Heath Sand Unit shall consist of the following land in Stark County, North Dakota:

TOWNSHIP 139 NORTH, RANGE 96 WEST, 5TH PM
SECTION 5: N/2,

TOWNSHIP 139 NORTH, RANGE 97 WEST, 5TH PM
SECTION 1: N/2
SECTION 2: ALL
SECTION 3: N/2, SE/4
SECTION 4: NE/4,

TOWNSHIP 140 NORTH, RANGE 96 WEST, 5TH PM
SECTION 14: ALL
SECTION 15: ALL
SECTION 16: S/2, NW/4
SECTION 17: S/2, NE/4
SECTION 19: S/2, NE/4
SECTION 20: ALL
SECTION 21: ALL
SECTION 22: ALL
SECTION 23: ALL
SECTION 27: W/2
SECTION 28: ALL
SECTION 29: ALL
SECTION 30: ALL
SECTION 31: ALL
SECTION 32: ALL
SECTION 33: N/2, N/2 SW/4,

TOWNSHIP 140 NORTH, RANGE 97 WEST, 5TH PM
SECTION 22: SE/4

SECTION 23: S/2
SECTION 24: S/2
SECTION 25: ALL
SECTION 26: ALL
SECTION 27: ALL
SECTION 33: ALL
SECTION 34: ALL

SECTION 35: ALL
SECTION 36: ALL,

containing 16,400 acres, more or less.

(2) That paragraph 8.5, Part III, of the Proposed Plan of Unitization for the Dickinson Heath Sand Unit is hereby, amended, in part, to read as follows: "Each lessee grants to Unit Operator a lien upon its oil and gas rights in each tract, and a security interest in its share of unitized substances when extracted and its interest in all Unit equipment, to secure payment of its share of Unit expense, together with interest thereon at the rate of seven percent (7%) per annum."

(3) That David J. Sorenson, owner of a leasehold interest in a spacing unit within the Unit Area described as the North Half (N/2) of Section 1, Township 139 North, Range 97 West, Stark County, North Dakota, be permitted to drill a well at the proper location on said spacing unit and that new information obtained from production from the well be used in the formula for the apportionment and allocation of Unit production, so as to be fair, reasonable and equitable.

(4) That, upon ratification by the prescribed 80% of persons who would bear cost of unit operation and 80% of the production or proceeds that will be credited to interests that are free of costs, the Dickinson Heath Sand Unit will be created, and the Plan of Unitization proposed by Continental Oil Company, and amended herein, is hereby prescribed for such unit.

(5) That as provided in the Plan of Unitization, Continental Oil Company is hereby designated as Unit Operator.

(6) That said Plan of Unitization as proposed and herein amended, is hereby incorporated in this order by reference and shall apply to the same extent and with the same force and effect as if it were actually set forth herein.

(7) That this order shall remain in full force and effect until further order of the Commission.

DONE, at Bismarck, North Dakota, this 10th day of October, 1972.

THE NORTH DAKOTA
INDUSTRIAL COMMISSION

/s/ William L. Guy
William L. Guy, Governor

/s/ Helgi Johanneson
Helgi Johanneson, Attorney General

/s/ Arne Dahl
Arne Dahl, Commissioner of Agriculture



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Montana State Office

5001 Southgate Drive, P.O. Box 36800

Billings, Montana 59107-6800

<http://www.mt.blm.gov/>

IN REPLY TO:

Dickinson Heath Sand Unit
NDM 78145X (922.PL)

Mr. A.B. Cline, Jr.
Cline Production Company
P.O. Box 20736
Billings, Montana 59104

Dear Mr. Cline:

On May 25, 2000, this office received the Notice of Transfer of Oil and Gas Wells - Form 15 from the North Dakota Industrial Commission (NDIC) whereby Conoco, Inc. resigned as Unit Operator and Cline Production Company was designated as Successor Unit Operator for the Dickinson Heath Sand Unit, Stark County, North Dakota. The notice was executed by both parties and the NDIC approved the change in unit operator on April 25, 2000.

The Authorized Officer recognizes the change of unit operator, and neither warrants nor certifies that the designated party has obtained approval from the interest owners that would entitle it to conduct operations under the Dickinson Heath Sand Unit Agreement.

No federal bond will need to be posted at this time since the wells within the unit are located on private tracts. However, should a federal well ever be proposed within the unit, a statement must be submitted to this office identifying the bond that will be used to cover operations on the federal well.

We are making distribution to the appropriate federal offices. If you have any questions, please contact Pascual Laborda at (406) 896-5102.

Sincerely,

Jay R. Spielman, Acting Chief
Reservoir Management and
Operations Section

1 Enclosure

1-Approved Successor Unit Operator (2 pp)

cc:(w/o encl.)

North Dakota FO

George Staigle, ND State Auditor, P.O. Box 3009, Bismarck, ND 58502-3009

✓ North Dakota Industrial Commission, Oil and Gas Division, 600 E. Blvd.,
Bismarck, ND 58505

Fluids Adjudication (922.KJ)

MMS, Attn: Gail Ryer, MS 3132, PO Box 5760, Denver, CO 80217

1
2 BEFORE THE INDUSTRIAL COMMISSION
3 OF THE STATE OF NORTH DAKOTA

Case #
1095

4 IN THE MATTER OF THE APPLICATION)
5 OF CONTINENTAL OIL COMPANY FOR)
6 THE CREATION OF THE DICKINSON)
7 HEATH SAND UNIT; PROVIDING FOR)
8 THE UNITIZED MANAGEMENT, OPERA-)
9 TION AND FURTHER DEVELOPMENT OF)
10 THE DICKINSON HEATH SAND SOURCE)
11 OF SUPPLY OF OIL AND GAS LOCATED)
12 IN STARK COUNTY, NORTH DAKOTA,)
13 DEFINING THE UNIT AREA AND APPRO-)
14 VAL OF THE PLAN OF UNITIZATION)
15 TO SUCH UNIT AND UNIT AREA.)

NOTICE OF HEARING

12 ** * **

13 TO ALL OPERATORS, LESSORS, AND OTHER INTERESTED PERSONS:

14 NOTICE IS HEREBY GIVEN that the Industrial Commission of the
15 State of North Dakota will hold a hearing on the 12th day of
16 September, 1972, at 9:30 o'clock A.M. in the Hearing
17 Room, State Capitol Building, Bismarck, North Dakota on the application
18 of Continental Oil Company for an Order creating the Dickinson Heath
19 Sand Unit, and authorizing the unitized management, operation and
20 further development of the Dickinson Heath Sand common source of supply
21 of oil and gas, Stark County, North Dakota, as fully set forth in the
22 application hereto attached.
23

24 There is on file with the Industrial Commission at the State
25 Capitol, Bismarck, North Dakota, and available for inspection, engineer-
26 ing, geological and all other technical exhibits to be used at the
27 above described hearing.
28

29 All persons interested in such matter may appear on said date
30 and be heard.
31

32 Done and performed this 13th day of July, 1972.

33 CONTINENTAL OIL COMPANY (Applicant)
34 by Fleck, Mather, Strutz & Mayer
35 Suite 200 Professional Bldg.
36 Bismarck, North Dakota 58501
Attorneys for said Applicant

By: 
Ernest R. Fleck

Case# 1095

PLAN OF UNITIZATION
DICKINSON HEATH SAND UNIT
STARK COUNTY, NORTH DAKOTA

PLAN OF UNITIZATION
DICKINSON HEATH SAND UNIT
STARK COUNTY, NORTH DAKOTA

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PLAN OF UNITIZATION
DICKINSON HEATH SAND UNIT
STARK COUNTY, NORTH DAKOTA

This Plan of Unitization, entered into as of the 1st day of January, 1972, by the parties who have signed the original of this instrument, a counterpart thereof or other instrument agreeing to be bound by the provisions hereof;

WITNESSETH:

WHEREAS, the unitized management, operation and further development of a common source of supply of oil and gas is reasonably necessary in order to effectively carry out a form of joint effort calculated to substantially increase the ultimate recovery of oil and gas from that common source of supply; and

WHEREAS, unitized methods of operation as applied to the common source of supply hereinafter defined as the Unitized Formation are feasible, will prevent waste and will with reasonable probability result in the increased recovery of substantially more oil and gas from the common source of supply than would otherwise be recoverable; and

WHEREAS, the estimated additional cost of conducting such unitized methods of operation will not exceed the estimated value of the additional oil and gas so recovered; and

WHEREAS, unitization in accordance with this Plan of Unitization and adoption of one or more unitized methods of operation is for the common good and will result in the general advantage of the owners of the oil and gas rights within the common source of supply affected thereby;

NOW, THEREFORE, in consideration of the premises and of the mutual agreements herein contained, it is agreed as follows:

PART I
CREATION OF UNIT

ARTICLE 1
CREATION

1.1 Plan and Agreement. This Plan of Unitization for the Dickinson Heath Sand Unit, Stark County, North Dakota, consists of and is set forth in this Part I, in Part II, Unit Agreement, in Part III, Unit Operating Agreement and in Exhibits A, B, C, D, E, F, and G and constitutes an agreement for the creation and operation of such Unit. The Unit Operating Agreement contains provisions which only affect the Lessees, as hereinafter defined; if there is any conflict between this Part I or the Unit Agreement and the Unit Operating Agreement, Part I or the Unit Agreement shall govern.

1.2 Creation. In accordance with the terms hereafter set out the Dickinson Heath Sand Unit may be declared effective as to qualified Tracts, as hereinafter defined, by determination of the Lessees or may be created by order of the Industrial Commission of North Dakota under Sections 38-08-09.1 through 38-08-09.16 of the North Dakota Century Code.

ARTICLE 2
DEFINITIONS

As used in this Plan of Unitization, Parts I, II and III and the Exhibits, the following listed terms shall have the following meaning:

2.1 "Unit Area" means the lands described by Tracts in Exhibit A and shown on Exhibit B as to which this agreement becomes effective or to which it may be extended as herein provided.

2.2 "Unitized Formation" shall mean that subsurface portion or portions of the Unit Area commonly known or described as the Heath Sand which is found between the intervals of 7822 feet and 7900 feet on the Schlumberger Laterolog in Continental Oil Company's Frenzel Well No. 2 located in the SW $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 30, Township 140 North, Range 96 West, Stark County, North Dakota.

2.3 "Unitized Substances" means all oil, gas, gaseous substances, sulphur contained in gas, condensate, distillate, and all associated and constituent liquid or liquefiable hydrocarbons within or produced from the Unitized Formation.

2.4 "Lessee Interest" means an interest in Unitized Substances by virtue of a lease, operating agreement, fee title, or otherwise, including a carried interest, which interest is chargeable with and obligated to pay or bear, either in cash or out of production or otherwise, all or a portion of the cost of drilling, developing, producing, and operating the Unitized Formation.

2.5 "Royalty Interest" means a right to or interest in any portion of the Unitized Substances or proceeds thereof other than a Lessee Interest.

2.6 "Royalty Owner" means a party hereto who owns a Royalty Interest.

2.7 "Lessee" means a party hereto who owns a Lessee Interest. The owner of oil and gas rights that are free of lease or other instrument conveying the Lessee Interest to another shall be regarded as a Lessee to the extent of seven-eighths (7/8ths) of his interest in Unitized Substances, and as a Royalty Owner with respect to his remaining one eighth (1/8th) interest therein.

2.8 "Tract" means each parcel of land described as such and given a Tract number on Exhibit A.

2.9 "Unit Operating Agreement" means Part III of this Plan of Unitization.

2.10 "Unit Operator" means the Lessee designated by Lessees under the Unit Operating Agreement to develop and operate the Unitized Formation, acting as operator and not as a Lessee.

2.11 "Tract Participation" means the percentage shown on Exhibit A for allocating Unitized Substances to a Tract under this agreement.

2.12 "Unit Participation" of each Lessee means the sum of the percentages obtained by multiplying the Lessee Interest of such Lessee in each Tract by the Tract Participation of such Tract.

2.13 "Phase I" means the period of time beginning at 7:00 a.m., on the effective date hereof and continuing to 7:00 a.m., on the first day of the calendar month next following the date on which there has been produced and saved from the Unitized Formation underlying the Unit Area as shown on Exhibit B after September 1, 1971, a total volume of three million nine hundred sixty-eight thousand (3,968,000) barrels of oil as determined from the oil production reports required by and submitted to the Industrial Commission of North Dakota.

2.14 "Phase II" means the remainder of the term of this agreement after the end of Phase I.

2.15 "Outside Substances" means all substances obtained from any source other than the Unitized Formation and which are injected into the Unitized Formation.

2.16 "Oil and Gas Rights" means the right to explore, develop and operate lands within the Unit Area for the production of Unitized Substances, or to share in the production so obtained or the proceeds thereof.

2.17 "Unit Operations" means all operations conducted by Lessees or Unit Operator pursuant to this Plan of Unitization for or on account of the development and operation of the Unitized Formation for the production of Unitized Substances.

2.18 "Unit Equipment" means all personal property, lease and well equipment, plants, and other facilities and equipment taken over or otherwise acquired for the joint account for use in Unit Operations.

2.19 "Unit Expense" means all cost, expense or indebtedness incurred by Lessees or Unit Operator pursuant to this Plan of Unitization for or on account of Unit Operations.

2.20 Unless the context otherwise clearly indicates, words used in the singular include the plural, the plural include the singular, and the neuter gender include the masculine and the feminine.

ARTICLE 3 EXHIBITS

3.1 Exhibits. Attached, following Part III, hereto are the following exhibits which are incorporated into Parts I, II and III by reference.

3.1.1 Exhibit A, is a schedule that describes each Tract in the Unit Area and shows its Tract Participation.

3.1.2 Exhibit B, is a map that shows the boundary lines of the Unit Area and the Tracts therein.

3.1.3 Exhibit C reflects the name of each Lessee, each Tract under which such Lessee owns an interest, its interest under such Tract, its Unit Participation under such Tract and total Unit Participation of such Lessee.

3.1.4 Exhibit D is a schedule which sets forth the percentage and kind of ownership of oil and gas interests in the Unit Area.

3.1.5 Exhibit E is the Accounting Procedure applicable to Unit Operations. If there is any conflict between Parts I, II or III of this Plan of Unitization and Exhibit E, the provisions of Parts I, II, or III shall prevail.

3.1.6 Exhibit F sets forth the equal opportunity clause applicable to operations hereunder.

3.1.7 Exhibit G is a schedule for use in determining intangible investment adjustments between Lessees.

3.2 Reference to Exhibits. When reference herein is made to an exhibit, the reference is to the Exhibit as originally attached or, if revised, to the latest revision.

3.3 Exhibits Considered Correct. An exhibit shall be considered to be correct until revised as herein provided.

3.4 Correcting Errors. The shapes and descriptions of the respective Tracts have been established by using the best information available. If it subsequently appears that any Tract, because of diverse Royalty or Lessee Interest ownership on the effective date hereof, should be divided into more than one Tract, or that any mechanical miscalculation has been made, Unit Operator, with the approval of Lessees, shall correct the mistake by revising the exhibits to conform to the facts. The revision shall not include any re-evaluation of engineering or geological interpretations used in determining Tract Participation. Each such revision of an exhibit shall be effective at 7:00 a.m. on the first day of the calendar month next following the filing for record of the revised exhibit or on such other date as may be determined by Lessees and set forth in the revised exhibit.

3.5 Filing Revised Exhibits. If an exhibit is revised pursuant to this agreement, Unit Operator shall certify and file the revised exhibit for record in the county in which this agreement is filed.

ARTICLE 4 EXECUTION

4.1 Original, Counterpart, or Other Instrument. An owner of Oil and Gas Rights may become a party to this Plan of Unitization by signing the original of this instrument, a counterpart thereof, or other instrument agreeing to be bound by the provisions hereof. The signing of any such instrument shall have the same effect as if all the parties had signed the same instrument.

4.2 Joinder in Dual Capacity. Execution as herein provided by any party as either a Lessee or a Royalty Owner shall commit all interests that may be owned or controlled by such party.

ARTICLE 5
GENERAL

5.1 Amendments Affecting Lessees. Amendments hereto relating wholly to the rights and obligations as between Lessees may be made if signed by all Lessees.

PART II
UNIT AGREEMENT

ARTICLE 1
CREATION AND EFFECT OF UNIT

1.1 Oil and Gas Rights Unitized. Subject to the provisions of this Plan of Unitization, all Oil and Gas Rights of Royalty Owners in and to the lands described on Exhibit A, and all Oil and Gas Rights of Lessees in and to said lands, are hereby unitized insofar as the respective Oil and Gas Rights pertain to the Unitized Formation, so that operations may be conducted as if the Unitized Formation had been included in a single lease executed by all Royalty Owners, as Lessors, in favor of all Lessees, as Lessees, and as if the lease had been subject to all of the provisions of this Plan of Unitization.

1.2 Personal Property Excepted. All lease and well equipment, materials, and other facilities heretofore or hereafter placed by any of the Lessees on the lands covered hereby shall be deemed to be and shall remain personal property belonging to and may be removed by the Lessees. The rights and interests therein as among Lessees are covered by the Unit Operating Agreement.

1.3 Amendments of Leases and Other Agreements. The provisions of the various leases, agreements, division and transfer orders, or other instruments covering the respective Tracts or the production therefrom are amended to the extent necessary to make them conform to the provisions of this Plan of Unitization, but otherwise shall remain in effect.

1.4 Continuation of Leases and Term Royalties. Operations, including drilling operations, conducted with respect to the Unitized Formation on any part of the Unit Area, or

production from any part of the Unitized Formation, except for the purpose of determining payments to Royalty Owners, shall be considered as operations upon or production from each Tract, and such operations or production shall continue in effect each lease or term royalty interest as to all lands covered thereby just as if such operations had been conducted and a well had been drilled on and was producing from each Tract.

1.5 Titles Unaffected by Unitization. Nothing herein shall be construed to result in the transfer of title to the Oil and Gas Rights by any party hereto to any other party or to Unit Operator. The intention is to provide for the cooperative development and operation of the Tracts and for the sharing of Unitized Substances as herein provided.

1.6 Injection Rights. Royalty owners hereby grant unto Lessees the right to inject into the Unitized Formation any substances in whatever amounts Lessees deem expedient for Unit Operations, including the right to drill and maintain injection wells on the Unit Area and to use producing or abandoned oil or gas wells, including wells which have never produced, for such purposes.

1.7 Development Obligation. Nothing in this Plan of Unitization shall be construed as increasing or decreasing the express or implied covenants of a lease in respect to either lands or a common source of supply not included within the Unit Area.

ARTICLE 2 PLAN OF OPERATIONS

2.1 Unit Operator. As provided in the Unit Operating Agreement, Lessees have designated Continental Oil Company Unit Operator. Unit Operator shall have the exclusive right to conduct Unit Operations. The operations shall conform to the provisions of this Plan of Unitization.

2.2 Operating Methods. To the end that the quantity of Unitized Substances ultimately recoverable may be increased and waste prevented, Lessees shall, with diligence and in accordance

with good engineering and production practices, within a reasonable time after this Plan of Unitization becomes effective, commence pressure maintenance operations by means of the injection of water, gas, and other substances, or any of them into the Unitized Formation.

2.3 Change of Operating Methods. Nothing herein shall prevent Lessees from discontinuing or changing in whole or in part any method of operation which, in their opinion, is no longer in accord with good engineering or production practices. Other methods of operation may be conducted or changes may be made by Lessees from time to time if determined by them to be feasible, necessary or desirable to increase the ultimate recovery of Unitized Substances.

Article 3 Tract Participations

3.1 Tract Participations. The Phase I and Phase II Tract Participations of each Tract are shown on Exhibit A.

3.1.1 The Phase I Tract Participation of each Tract was calculated and determined using the following formula:

$$\begin{array}{lcl}
 0.70 & \times & \frac{\text{Each Tract's current rate of oil production from March 1, 1971, thru August 31, 1971}}{\text{Total current rate of oil production from the Unitized Formation from March 1, 1971, thru August 31, 1971}} \\
 \text{plus} & & \\
 0.25 & \times & \frac{\text{Each Tract's primary reserves on September 1, 1971}}{\text{Total primary reserves in the Unitized Formation on September 1, 1971}} \\
 \text{plus} & & \\
 0.05 & \times & \frac{\text{Acre feet of each Tract}}{\text{Total acre feet in the Unitized Formation}}
 \end{array}$$

3.1.2 The Phase II Tract Participation of each Tract was calculated and determined using the following formula:

$$\begin{array}{lcl}
 0.70 & \times & \frac{\text{Acre feet of each Tract}}{\text{Total acre feet in the Unitized Formation}} \\
 \text{plus} & & \\
 0.17 & \times & \frac{\text{Each Tract's ultimate primary oil production}}{\text{Total ultimate primary oil production from the Unitized Formation}} \\
 \text{plus} & & \\
 0.13 & \times & \frac{\text{Each Tract's cumulative oil production to August 31, 1971}}{\text{Total cumulative oil production to August 31, 1971, from the Unitized Formation}}
 \end{array}$$

3.2 Relative Tract Participations. If the Unit Area is enlarged or reduced, the revised Tract Participations of the Tracts remaining in the Unit Area and which were within the Unit Area prior to the enlargement or reduction, shall remain in the same ratio one to another.

ARTICLE 4
ALLOCATION OF UNITIZED SUBSTANCES

4.1 Allocation to Tracts. All Unitized Substances produced and saved shall be allocated to the several Tracts in accordance with the respective Tract Participations effective during the period that the Unitized Substances were produced. The amount of Unitized Substances allocated to each Tract, regardless of whether it is more or less than the actual production of Unitized Substances from the well or wells, if any, on such Tract, shall be deemed for all purposes to have been produced from such Tract.

4.2 Distribution Within Tracts. The Unitized Substances allocated to each Tract shall be distributed among, or accounted for to, the parties entitled to share in the production from such Tract in the same manner, in the same proportions, and upon the same conditions as they would have participated and shared in the production from such Tract, or in the proceeds thereof, had this Plan of Unitization not been entered into, and with the same legal effect. If any Oil and Gas Rights in a Tract are now or hereafter become divided and owned in severalty as to different parts of the Tract, the owners of the divided interests, in the absence of an agreement providing for a different division, shall share in the Unitized Substances allocated to the Tract, or in the proceeds thereof, in proportion to the surface acreage of their respective parts of the Tract.

4.3 Taking Unitized Substances in Kind. The Unitized Substances allocated to each Tract shall be taken in kind or separately disposed of by the respective parties entitled thereto by virtue of the ownership of Oil and Gas Rights therein or by

purchase from such owners. Such parties shall have the right to construct, maintain, and operate within the Unit Area all necessary facilities for that purpose, provided that they are so constructed, maintained, and operated as not to interfere with Unit Operations. Any extra expenditures incurred by Unit Operator by reason of the delivery in kind of any portion of the Unitized Substances shall be borne by the receiving party. If a Royalty Owner has the right to take in kind a share of the Unitized Substances and fails to do so, the Lessee whose Lessee Interest is subject to such Royalty Interest shall be entitled to take in kind such share of the Unitized Substances.

4.4 Failure to Take in Kind. If any party fails to take in kind or separately dispose of its share of Unitized Substances, Unit Operator shall have the right, for the time being and subject to revocation at will by the party owning the share, to purchase for its own account or sell to others such share; provided that, all contracts of sale by Unit Operator of any other party's share of Unitized Substances shall be only for such reasonable periods of time as are consistent with the minimum needs of the industry under the circumstances, but in no event shall any such contract be for a period in excess of one year. The proceeds of the Unitized Substances so disposed of by Unit Operator shall be paid to the party entitled thereto. Notwithstanding the foregoing, Unit Operator shall not make a sale into interstate commerce of any other party's share of gas production without first giving such other party sixty (60) days notice of such intended sale.

4.5 Responsibility for Royalty Settlements. Any party receiving in kind or separately disposing of all or part of the Unitized Substances allocated to any Tract or receiving the proceeds therefrom shall be responsible for the payment thereof to the persons entitled thereto, and shall indemnify all parties hereto, including Unit Operator, against any liability for all royalties, overriding royalties, production payments, and all

other payments chargeable against or payable out of such Unitized Substances or the proceeds therefrom. If the amount of production accruing to any Royalty Interest in a Tract, by the terms of the instrument reserving or creating it depends on the per well production from such Tract during any period of time, the determination of such per well production shall be made by dividing the total quantity of Unitized Substances produced from the Unitized Formation during the period by the total number of usable wells completed in the Unitized Formation at the beginning of such period, either as producing or injection wells.

4.6 Royalty on Outside Substances. No payments shall be due or payable to Royalty Owners on Outside Substances.

4.6.1 If gas is the Outside Substance injected, one hundred percent (100%) of any gas subsequently produced from the Unitized Formation and sold, or used for other than Unit Operations, shall be deemed to be the Outside Substance so injected until the total volume thereof equals the total volume of the Outside Substances so injected, and no payments shall be due or payable to Royalty Owners on said one hundred percent (100%).

4.6.2 If Liquid Petroleum Gas (LPG), is the Outside Substance injected, ten percent (10%) of all Unitized Substances produced from the Unitized Formation subsequent to one year after the initial injection of such LPG into the Unitized Formation shall be deemed Outside Substance so injected until the total value thereof equals the total cost of Outside Substances so injected.

ARTICLE 5
PRODUCTION AS OF THE EFFECTIVE DATE

5.1 Oil in Lease Tanks. Unit Operator shall gauge all lease and other tanks within the Unit Area to ascertain the amount of merchantable oil produced from the Unitized Formation in such tanks, above the pipeline connections as of 7:00 a.m., on

the effective date hereof. The oil that is above pipeline connections shall remain the property of the parties entitled thereto the same as if the unit had not been formed. Any such oil not promptly removed may be sold by the Unit Operator for the account of the parties entitled thereto, subject to the payment of all royalties, overriding royalties, production payments, and all other payments under the provisions of the applicable lease or other contracts.

ARTICLE 6
USE OR LOSS OF UNITIZED SUBSTANCES

6.1 Use of Unitized Substances. Lessees may use as much of the Unitized Substances as they deem necessary for Unit Operations, including but not limited to the injection thereof into the Unitized Formation.

6.2 Royalty Payments. No royalty, overriding royalty, production, or other payments shall be payable upon, or with respect to, oil and gas used or consumed in Unit Operations, or Unitized Substances which otherwise may be lost or consumed in the production, handling, treating, transportation, or storing of Unitized Substances.

ARTICLE 7
TRACTS TO BE INCLUDED IN UNIT

7.1 Statutory Unit. In the event the Dickinson Heath Sand Unit is created by order of the Industrial Commission of North Dakota under Sections 38-08-09.1 through 38-08-09.16 of the North Dakota Century Code, the Unit Area shall be composed of the Tracts unitized by such order.

7.2 Contractual Unit. In the event the Dickinson Heath Sand Unit is made effective by determination of Lessees, subject to the applicable provisions of this Plan of Unitization, and not under Section 15.1 of this Part II, then the following provisions shall prevail:

7.2.1 Qualification of Tracts. On and after the effective date hereof and until the enlargement or reduction thereof, the Unit Area shall be composed

of the Tracts listed in Exhibit C that corner or have a common boundary (Tracts separated only by a public highway or a railroad right of way shall be considered to have a common boundary), and that otherwise qualify as follows:

7.2.1.1 Each Tract as to which Lessees owning one hundred percent (100%) of the Lessee Interest have become parties to this Plan of Unitization and as to which Royalty Owners owning seventy-five percent (75%) or more of the Royalty Interest have become parties to this Plan of Unitization.

7.2.1.2 Each Tract as to which Lessees owning one hundred percent (100%) of the Lessee Interest have become parties to this Plan of Unitization, and as to which Royalty Owners owning less than seventy-five percent (75%) of the Royalty Interest have become parties to this Plan of Unitization, and as to which (a) all Lessees in such Tract have joined in a request for the inclusion of such Tract in the Unit Area, and as to which (b) seventy-five percent (75%) of the combined voting interests of Lessees in all Tracts that meet the requirements of Sections 7.2.1.1 have voted in favor of the inclusion of such Tract. For the purpose of this Section 7.2.1.2, the voting interest of a Lessee shall be equal to the ratio that its Unit Participation attributable to Tracts that qualify under Section 7.2.1.1 bears to the total Unit Participation of all Lessees attributable to all Tracts that qualify under Section 7.2.1.1. Phase I Unit Participation shall apply herein until Phase II Unit Participation becomes effective.

7.2.1.3 Each Tract as to which Lessees owning less than one hundred percent (100%) of the Lessee Interest have become parties to this Plan of Unitization, regardless of the percentage of Royalty Interest therein that is committed hereto; and as to which (a) the Lessee who operates the Tract and all of the other Lessees in such Tract who have become parties to this Plan of Unitization have joined in a request for inclusion of such Tract in the Unit Area, and have executed and delivered an indemnity agreement indemnifying and agreeing to hold harmless the other Lessees in the Unit Area, their successors and assigns, against all claims, and demands, that may be made by the owners of Lessee Interests in such Tract who are not parties to this agreement, and which arise out of the inclusion of the Tract in the Unit Area; and as to which (b) seventy-five percent (75%) of the combined voting interest of Lessees in all Tracts that meet the requirements of Sections 7.2.1.1 and 7.2.1.2 have voted in favor of the inclusion of such Tract and to accept the indemnity agreement. For the purpose of this Section 7.2.1.3, the voting interest of each Lessee shall be equal to the ratio that its Unit Participation attributable to Tracts that qualify under Sections 7.2.1.1 and 7.2.1.2 bears to the total Unit Participation of all Lessees attributable to all Tracts that qualify under Sections 7.2.1.1 and 7.2.1.2. Upon the inclusion of such a Tract in the Unit Area, the Unit Participation that would have been attributed to the nonsubscribing owners of the Lessee Interest in such Tract, had they become parties of this Plan of Unitization, shall be attributed to the Lessees in such Tract who have become parties to

such Plan of Unitization, in proportion to their respective Lessee Interests in the Tract. Phase I Unit Participation shall apply herein until Phase II Unit Participation becomes effective.

7.2.2 Subsequent Commitment of Interest to Unit. After the effective date of this Plan of Unitization, the commitment of any interest in any Tract within the Unit Area shall be upon such terms as may be negotiated by Lessees and the owner of such interest.

7.2.3 Removal of Tract from Unit Area. If a Tract ceases to have sufficient Lessees committed to this agreement to meet the conditions of Section 7.2.1 because of failure of title of any party hereto, such Tract shall be removed from the Unit Area effective as of the first day of the calendar month in which the failure of title is finally determined; however, the Tract shall not be removed from the Unit Area if, within ninety (90) days of the date of final determination of the failure of title, the Tract requalifies under Section 7.2.1.

7.2.4 Revision of Exhibits. If any of the Tracts described on Exhibit A fail to qualify for inclusion in the Unit Area, Unit Operator shall recompute, using the original basis of computation, the Tract Participation of each of the qualifying Tracts. If a Tract is removed from the Unit Area because of failure of title, Unit Operator, subject to Section 3.2, shall recompute the Tract Participation of each of the Tracts remaining in the Unit Area.

7.2.4.1 In either such event, Unit Operator shall revise Exhibits A, B, C and D accordingly. If such revision is because of Tracts failing to qualify for inclusion in the Unit Area as of the effective date, the revised exhibits shall be effective as

of the effective date hereof. If such revision is because of failure of title, the revised exhibits shall be effective as of the first day of the calendar month in which such failure of title is finally determined.

ARTICLE 8
TITLES

8.1 Lessee Interest Titles. If title to a Lessee Interest fails, the rights and obligations of Lessees by reason of the failure of title shall be governed by the Unit Operating Agreement.

8.2 Royalty Owner Titles. If title to a Royalty Interest fails, but the Tract to which it relates is not removed from the Unit Area, the party whose title failed shall not be entitled to share hereunder with respect to such interest.

8.3 Production Where Title is in Dispute. If the title or right of any party claiming the right to receive in kind all or any portion of the Unitized Substances allocated to a Tract is in dispute, Unit Operator at the discretion of Lessees shall either:

(a) require that the party to whom such Unitized Substances are delivered or to whom the proceeds thereof are paid, furnish security for the proper accounting therefor to the rightful owner if the title or right of such party fails in whole or in part, or

(b) withhold and market the portion of Unitized Substances with respect to which title or right is in dispute, and impound the proceeds thereof until such time as the title or right thereto is established by a final judgment of a court of competent jurisdiction or otherwise to the satisfaction of Lessees, whereupon the proceeds so impounded shall be paid to the party rightfully entitled thereto.

8.4 Taxes. Should any party hereto fail to pay when due any ad valorem tax on real or personal property, which failure might result in a loss of title to any interest in the Unit Area, Unit Operator may pay the same and discharge any tax liens arising from nonpayment. Lessees shall reimburse Unit Operator for any amount so paid and Unit Operator shall withhold and distribute among the Lessees, in proportion to their contribution toward such payment, an amount sufficient to defray the cost of such payment out of any sums due to the delinquent taxpayer or taxpayers as proceeds from the sale of any Unitized Substances.

ARTICLE 9
EASEMENTS OR USE OF SURFACE

9.1 Grant of Easements. The parties hereto, to the extent of their rights and interests, hereby grant to Lessees the right to use as much of the surface of the land within the Unit Area as may reasonably be necessary for Unit Operations; provided that, nothing herein shall be construed as leasing or otherwise conveying to Lessees a site for a water, gas injection, processing or other plant, or camp site.

9.2 Use of Water. Lessees shall have free use of water from the Unit Area for Unit Operations, except water from any well, lake, pond, or irrigation ditch of a Royalty Owner.

9.3 Surface Damages. Lessees shall pay the owner for damages to growing crops, timber, fences, improvements, and structures on the Unit Area that results from Unit Operations.

ARTICLE 10
ENLARGEMENTS OF UNIT AREA

10.1 Statutory Unit. In the event the Dickinson Heath Sand Unit is created by order of the Industrial Commission of North Dakota under Sections 38-08-09.1 through 38-08-09.16 of the North Dakota Century Code, enlargements of the Unit Area shall be made in accordance with such Sections 38-08-09.1 through 38-08-09.16.

10.2 Contractual Unit. In the event the Dickinson Heath Sand Unit is made effective by determination of the Lessees, subject to the applicable provisions of this Plan of Unitization, and not under Section 15.1 of this Part II, the Unit Area may be enlarged to include acreage reasonably proved to be productive, upon such terms as may be determined by Lessees, including but not limited to, the following:

10.2.1 The acreage shall qualify under a section of Article 7.

10.2.2 The participation to be allocated to the acreage shall be reasonable, fair, and based on all available information.

10.3 Adjustments. If the Unit Area is enlarged under either Section 10.1 or Section 10.2, there shall be no retroactive allocation or adjustment of Unit Expense or of interests in the Unitized Substances produced, or proceeds thereof; however, this limitation shall not prevent an adjustment of investment by reason of the enlargement, and an adjustment of investment, as determined by the Lessees will be made in the event the Unit Area is enlarged.

10.4 Determination of Tract Participations. If the Unit Area is enlarged under either Section 10.1 or Section 10.2, Unit Operator, subject to Section 3.2, shall determine the Tract Participation of each Tract within the Unit Area as enlarged, and shall revise Exhibits A, B, C and D accordingly.

10.5 Effective Date. The effective date of any enlargement of the Unit Area under Section 10.2 shall be 7:00 a.m. on the first day of the calendar month following compliance with conditions for enlargement as specified by Lessees, approval of the enlargement by the appropriate governmental authority, if required, and the filing for record of revised Exhibits A, B, C and D in the records of the County in which this Plan of Unitization is recorded.

ARTICLE 11
CHANGE OF TITLE

11.1 Covenant Running with the Land. This Plan of Unitization shall extend to, be binding upon, and inure to the benefit of, the respective heirs, devisees, legal representatives, successors, and assigns of the parties hereto, and shall constitute a covenant running with the lands, leases, and interests covered hereby.

11.2 Notice of Transfer. Any conveyance of all or any part of any interest owned by any party hereto with respect to any Tract shall be made expressly subject to this Plan of Unitization. No change of title shall be binding on the Unit Operator, or upon any party hereto other than the party so transferring, until the first day of the calendar month next succeeding the date of receipt by Unit Operator of a photocopy or a certified copy of the recorded instrument evidencing such change in ownership.

11.3 Waiver of Rights to Partition. Each party hereto covenants that, during the existence of this Plan of Unitization, it will not resort to any action to partition the Unit Area or the Unit Equipment, and to that extent waives the benefits of all laws authorizing such partition.

ARTICLE 12
RELATIONSHIP OF PARTIES

12.1 No Partnership. The duties, obligations and liabilities of the parties hereto are intended to be several and not joint or collective. This Plan of Unitization is not intended to create, and shall not be construed to create, an association or trust, or to impose a partnership duty, obligation, or liability with regard to any one or more of the parties hereto. Each party hereto shall be individually responsible for its own obligations as herein provided.

12.2 No Sharing of Market. This Plan of Unitization is not intended to provide, and shall not be construed to provide, directly or indirectly, for any cooperative refining, joint sale, or marketing of Unitized Substances.

12.3 Royalty Owners Free of Costs. This Plan of Unitization is not intended to impose, and shall not be construed to impose, upon any Royalty Owner any obligation to pay for Unit Expense unless such Royalty Owner is otherwise so obligated.

12.3.1 Carved-out Interest. In the event any Lessee shall, after the time a Lessee Interest of that Lessee becomes subject to this Plan of Unitization, create a Royalty Interest out of its Lessee Interest then subject to this Plan of Unitization, such carved-out Royalty Interest shall be subject to all the terms of this Plan of Unitization. In the event the Lessee owning the Lessee Interest out of which the carved-out Royalty Interest was created fails to pay any cost or expense chargeable to such Lessee hereunder, the owner of the carved-out Royalty Interest will be liable for its pro rata portion of such costs and expenses. In this event, the lien provided in Section 8.5 of the Unit Operating Agreement may be enforced against such carved-out Royalty Interest in the same manner as the lien was enforceable against the Lessee Interest out of which the carved-out Royalty Interest was created.

12.4 Information to Royalty Owners. Each Royalty Owner shall be entitled to all information in the possession of Unit Operator to which such Royalty Owner is entitled by an existing agreement with any Lessee.

ARTICLE 13 LAWS AND REGULATIONS

13.1 Laws and Regulations. This Plan of Unitization shall be subject to the conservation laws of the State of North Dakota; to the valid rules, regulations, and orders of the Industrial Commission of North Dakota; and to all other applicable federal, state and municipal laws, rules, regulations and orders.

13.2 Non-Discrimination. In connection with the performance of work under this Agreement, the Unit Operator agrees to comply with all the provisions of Section 202(1) to (7) inclusive, of Executive Order 11246, 30 F.R. 12319, the provisions of which are set forth on Exhibit "F," attached hereto.

ARTICLE 14
FORCE MAJEURE

14.1 Force Majeure. All obligations imposed by this Plan of Unitization on each party, except for the payment of money, shall be suspended while and to the extent compliance is prevented, in whole or in part, by a strike, fire, war, civil disturbance, act of God; by federal, state or municipal laws; by any rule, regulation, or order of a governmental agency; by inability to secure materials; or by any other cause of causes beyond reasonable control of the party. No party shall be required against its will to adjust or settle any labor dispute. Neither this agreement nor any lease or other instrument subject hereto shall be terminated by reason of suspension of Unit Operations due to any one or more of the causes set forth in this Article.

ARTICLE 15
EFFECTIVE DATE

15.1 Statutory Unit. In the event the Dickinson Heath Sand Unit is created by order of the Industrial Commission of North Dakota under Sections 38-08-09.1 through 38-08-09.16 of the North Dakota Century Code, this Plan of Unitization shall become effective in accordance with the order of such Industrial Commission, subject to which this Plan of Unitization shall become binding upon each party executing the same as of the date such party signs the instrument by which it becomes a party hereto.

15.1.1 If this Dickinson Heath Sand Unit becomes effective pursuant to Section 15.1, Unit Operator shall within thirty (30) days after the effective date

file a certificate for record in Stark County, North Dakota, which certificate shall set forth: (1) the hour, day and year on which the Unit becomes effective and Unit Operations commenced; (2) a description or plat of the lands included within the Unit Area; and (3) the order number and date of the Order or Orders of the Industrial Commission of North Dakota approving this Plan of Unitization and creating the Dickinson Heath Sand Unit.

15.2 Contractual Unit. In the event the Dickinson Heath Sand Unit is made effective by determination of the Lessees, subject to the applicable provisions of this Plan of Unitization, and not under Section 15.1, the following provisions shall prevail:

15.2.1 Effective Date. This Plan of Unitization shall become binding upon each party as of the date such party signs the instrument by which it becomes a party hereto, and, unless sooner terminated as provided in Section 15.2.2 shall become effective as to qualified Tracts at the time and date as determined by the Lessees in all the qualified Tracts, and set forth in a certificate filed for record by Unit Operator in Stark County, North Dakota. The certificate shall also identify the Tracts qualified under Article 7, recite the percentage of the Unit Area represented by such Tracts, the book and page in which a counterpart of this agreement has been recorded. The certificate shall not be filed until after the following requirements have been met:

15.2.1.1 Tracts comprising eighty percent (80%) or more of the Unit Area as shown on the original Exhibit B have qualified under the provisions of Article 7.

15.2.1.2 At least one counterpart of this agreement has been filed for record by Unit Operator in Stark County, North Dakota.

15.3 Ipso Facto Termination. If the requirements of Sections 15.1 or 15.2 are not accomplished on or before December 1, 1973, this Plan of Unitization shall ipso facto terminate on that date (hereinafter called "termination date") and thereafter be of no further effect, unless prior thereto Lessee owning a combined Phase I Unit Participation of at least seventy-five percent (75%) have become parties to this Plan of Unitization and have decided to extend the termination date for a period not to exceed twelve (12) months. If the termination date is so extended and the requirements of Sections 15.1 or 15.2 are not accomplished on or before the extended termination date, this Plan of Unitization shall ipso facto terminate on the extended termination date and thereafter be of no further effect.

ARTICLE 16
TERM

16.1 Term. The term of this Plan of Unitization shall be for the time that Unitized Substances are produced in paying quantities and as long thereafter as Unit Operations are conducted without a cessation of more than ninety (90) consecutive days, unless sooner terminated by Lessees in the manner herein provided.

16.2 Termination by Lessees. This Plan of Unitization may be terminated by Lessees having a combined Phase II Unit Participation of at least eighty-five percent (85%) whenever such Lessees determine that Unit Operations are no longer profitable or feasible.

16.3 Effect of Termination. Upon termination of this Plan of Unitization, the further development and operation of the Unitized Formation as a unit shall be abandoned, Unit Operations shall cease, and thereafter the parties shall be governed by the provisions of the leases and other instruments affecting the separate Tracts.

16.4 Certificate of Termination. When Unit Operations are abandoned and the affairs of the Unit terminated, Unit Operator shall file a certificate for record in Stark County, North Dakota, setting forth the fact and time of termination of the Unit.

16.5 Salvaging Equipment Upon Termination. If not otherwise granted by the leases or other instruments affecting each Tract unitized under this Plan of Unitization, Royalty Owners hereby grant Lessees a period of six (6) months after the date of termination of this Plan of Unitization within which to salvage and remove Unit Equipment.

PART III
UNIT OPERATING AGREEMENT

ARTICLE 1
CREATION OF OPERATING COMMITTEE
AND SUPERVISION OF UNIT OPERATIONS

1.1 Creation of Operating Committee. An Operating Committee is hereby created to consist of one representative to be designated by each Lessee, provided that an individual Lessee may be a member of the Committee. Each Lessee shall, in writing, inform Unit Operator of the names and addresses of the representative and alternate who are authorized to represent and bind such Lessee with respect to Unit Operations. The representative or alternate may be changed from time to time by written notice to Unit Operator.

1.2 Officers. The representative of the Unit Operator shall be Chairman of the Operating Committee. The Operating Committee shall select a Secretary and other officers as such Committee deems proper. The Secretary and other officers, other than the Chairman, need not be members of the Operating Committee. The Secretary shall keep and maintain the records of the actions of the Operating Committee. The officers shall serve at the will of the Operating Committee and perform such duties as are directed by that Committee.

1.3 Over-all Supervision. The Operating Committee shall exercise over-all management and control of all matters pertaining to Unit Operations, pursuant to the Plan of Unitization.

1.4 Specific Authorities and Duties. The matters with respect to which the Operating Committee shall decide and take action shall include, but not be limited to, the following:

1.4.1 Method of Operation. The method of operation, including any type of pressure maintenance, secondary recovery, or other recovery program to be employed.

1.4.2 Drilling of Wells. The drilling of any well whether for production of Unitized Substances, for use as an injection well, or for other purposes.

1.4.3 Well Recompletions and Change of Status. The recompletion, abandonment, or change of status of any well, or the use of any well for injection or other purposes.

1.4.4 Expenditures. The making of any single expenditure in excess of Fifteen Thousand Dollars (\$15,000.00); provided that, approval by the Operating Committee of the drilling, redrilling, deepening, or plugging back of any well shall include approval of any necessary expenditures required therefor, and for completing, testing, and equipping the same, including necessary flow lines, separators, and lease tankage.

1.4.5 Disposition of Unit Equipment. The selling or otherwise disposing of any major item of surplus Unit Equipment, if the current list price of new equipment similar thereto is Three Thousand Dollars (\$3,000.00) or more.

1.4.6 Appearance Before a Court or Regulatory Agency. The designating of a representative to appear before any court or regulatory agency in matters pertaining to Unit Operations; provided that, such designation shall not prevent any Lessee from appearing in person or from designating another representative in its own behalf.

1.4.7 Audits. The auditing of the accounts of Unit Operator pertaining to Unit Operations hereunder; provided that, the audits shall

(a) not be conducted more than once each year except upon the resignation or removal of Unit Operator,

(b) be made at the expense of all Lessees other than the Lessee designated as Unit Operator, and

(c) be made upon not less than thirty (30) days' written notice to Unit Operator.

1.4.8 Inventories. The taking of periodic inventories under the terms of Exhibit E.

1.4.9 Technical Services. The authorizing of charges to the joint account for services by consultants or Unit Operator's technical personnel not covered by the overhead charges provided by Exhibit E.

1.4.10 Assignments to Committees. The appointment of committees to study any problems in connection with Unit Operations.

1.4.11 Removal and Successor. The removal of Unit Operator and the selection of a successor.

1.4.12 Enlargement. The enlargement of the Unit Area under Section 10.2 of Part II.

1.4.13 Adjustment of Investment. The adjustment and readjustment of investments.

1.4.14 Termination of Unit. The termination of the Unit Agreement.

1.4.15 Border Agreements. Unit Operator may, after approval of Operating Committee, enter into border agreements with respect to lands adjacent to the Unit Area for the purpose of coordinating operations.

1.5 Meetings of Operating Committee. All meetings of the Operating Committee shall be called by Unit Operator upon its own motion or at the request of one or more Lessees having a total Unit Participation of not less than five percent (5%). No meeting shall be called on less than fourteen (14) days' advance written notice, with agenda for the meeting attached. The Operating Committee shall have the right to amend items included in the agenda and to decide the amended item or other items presented at the meeting.

1.6 Voting Procedure. The Operating Committee shall decide all matters coming before it as follows:

1.6.1 Voting Interest. Each Lessee shall have a voting interest equal to its Unit Participation in effect at the time the vote is taken, except that all matters relative to secondary recovery investments

and expenditures shall be determined by each Lessee's vote based upon Phase II Unit Participation.

1.6.2 Vote Required. Except as may otherwise be provided herein or in the Unit Agreement, Lessees shall act upon and determine all matters coming before them by the affirmative vote of sixty-five percent (65%) or more voting interest, provided, that should any one Lessee own sixty-five percent (65%) or more voting interest, its vote must be supported by the vote of at least one or more additional Lessees having a total Unit Participation of not less than five percent (5%). Provided further, that should any one Lessee own thirty-five percent (35%) or more voting interest, its negative vote or failure to vote shall not defeat the matter being voted on unless supported by one or more Lessees having a combined voting interest of at least five percent (5%).

1.6.3 Vote at Meeting by Nonattending Lessees. A Lessee who is not represented at a meeting may vote by letter or telegram addressed to the representative of the Unit Operator if its vote is received prior to the vote on the item.

1.6.4 Poll Votes. The Operating Committee may vote on and decide, by letter or telegram, any matter submitted in writing to the members of that committee, if no meeting is requested, as provided in Section 1.5, within seven (7) days after the proposal is sent to such members, Unit Operator will give prompt notice of the results of the voting to all Lessees.

ARTICLE 2 INDIVIDUAL RIGHTS OF LESSEES

2.1 Reservation of Rights. Lessees severally reserve to themselves all their rights, except as otherwise provided in this Plan of Unitization.

2.2 Specific Rights. Each Lessee shall have, among others, the following specific rights:

2.2.1 Access to Unit Area. Access to the Unit Area at all reasonable times to inspect Unit Operations, all wells, and the records and data pertaining thereto.

2.2.2 Reports. The right to receive from Unit Operator, upon written request, copies of all reports to any governmental agency, reports of crude oil runs and stocks, inventory reports, and all other information pertaining to Unit Operations. The cost of gathering and furnishing information not ordinarily furnished by Unit Operator to all Lessees shall be charged to the Lessees requesting the information.

ARTICLE 3 UNIT OPERATOR

3.1 Initial Unit Operator. Continental Oil Company is hereby designated as Unit Operator.

3.2 Resignation or Removal. Unit Operator may resign at any time. Lessees may remove Unit Operator at any time by the affirmative vote of more than fifty percent (50%) of the Phase II voting interest, provided, however, if Unit Operator has fifty percent (50%) or more Phase II voting interest, Lessee may remove Unit Operator by the affirmative vote of at least seventy-five percent (75%) of the Phase II voting interest remaining after excluding the Phase II voting interest of Unit Operator. A Unit Operator that resigns or is removed shall not be released from its obligations hereunder for a period of three (3) months after the resignation or discharge, unless a successor Unit Operator has taken over Unit Operations prior to the expiration of such period.

3.3 Selection of Successor. Upon the resignation or removal of a Unit Operator, a successor Unit Operator shall be selected by an affirmative vote of more than fifty percent (50%) of the Phase II voting interest; provided that, if the Unit Operator that is removed votes only to succeed itself or fails

to vote and the remaining Phase II voting interest is fifty percent (50%) or less, the successor Unit Operator may be selected by the affirmative vote of at least ninety percent (90%) of the Phase II voting interest remaining after excluding the Phase II voting interest of the Unit Operator that was removed.

ARTICLE 4
AUTHORITIES AND DUTIES OF UNIT OPERATOR

4.1 Exclusive Right to Operate Unit. Subject to the provisions of this Plan of Unitization and to instructions from the Operating Committee, Unit Operator shall have the exclusive right and be obligated to conduct Unit Operations.

4.2 Workmanlike Conduct. Unit Operator shall conduct Unit Operations in a good and workmanlike manner as would a prudent operator under the same or similar circumstances. Unit Operator shall freely consult with the Operating Committee and keep it informed of all matters which Unit Operator, in the exercise of its best judgment, considers important. Unit Operator shall not be liable to Lessees for damages, unless such damages result from its gross negligence or willful misconduct.

4.3 Liens and Encumbrances. Unit Operator shall endeavor to keep the lands, leases and equipment in the Unit Area free from all liens and encumbrances occasioned by Unit Operations, except the lien of Unit Operator granted hereunder.

4.4 Employees. The number of employees used by Unit Operator in conducting Unit Operations, their selection, hours or labor, and compensation shall be determined by Unit Operator. Such employees shall be the employees of Unit Operator.

4.5 Records. Unit Operator shall keep correct books, accounts and records of Unit Operations.

4.6 Reports to Lessees. Unit Operator shall furnish to Lessees periodic reports of Unit Operations.

4.7 Reports to Governmental Authorities. Unit Operator shall make all reports to governmental authorities that it has the duty to make as Unit Operator.

4.8 Engineering and Geological Information. Unit Operator shall furnish to a Lessee, upon written request, a copy of the log and other engineering and geological data pertaining to wells drilled for Unit Operations.

4.9 Expenditures. Unit Operator is authorized to make single expenditures not in excess of Fifteen Thousand Dollars (\$15,000.00) without prior approval of the Operating Committee. If an emergency occurs, Unit Operator may immediately make or incur such expenditures as in its opinion are required to deal with the emergency. Unit Operator shall report to Lessees, as promptly as possible, the nature of the emergency and the action taken.

4.10 Well Drilled by Unit Operator. All wells drilled by Unit Operator shall be at the usual rates prevailing in the area. Unit Operator may employ its own tools and equipment, but the charge therefor shall not exceed the prevailing rate in the area, and the work shall be performed by Unit Operator under the same terms and conditions as are usual in the area in contracts of independent contractors doing work of a similar nature.

ARTICLE 5 TAXES

5.1 Payment. Any and all ad valorem taxes payable upon the Lessee Interest (and upon royalty interests which are not payable by the owners thereof) or upon materials, equipment, or other properties acquired and held by Unit Operator hereunder, and any and all taxes (other than income taxes) upon or measured by Unitized Substances produced from the Unit Area, which are not payable by the purchaser or purchasers thereof or by the Royalty Owners, shall be paid by Unit Operator as and when due and payable.

5.2 Apportionment. Taxes upon materials, equipment and other properties acquired and held by Unit Operator hereunder shall be charged to the joint account. All taxes (other than income taxes) upon or directly measured by the value of Unitized Substances produced shall be apportioned to the Lessees in the same proportion as the assessed value of their respective portions

of the Unitized Substances produced bears to the whole; provided that any Lessee whose acreage is subject to a separately assessed overriding royalty interest, production payment or similar interest in excess of the basic 1/8 royalty shall be given credit for any reduction in the assessed valuation of his unit property attributable to such separate assessment.

5.3 Notices and Returns. Each Lessee shall promptly furnish Unit Operator with copies of notices, assessments, levies, of tax statements received by it pertaining to the taxes to be paid by Unit Operator. Unit Operator shall make such returns, reports, and statements as may be required by law in connection with any taxes above provided to be paid by it and shall furnish copies to the parties upon request. Unit Operator shall notify the Lessees of any tax which it does not propose to pay before such tax becomes delinquent.

5.4 Other Taxes. Each Lessee shall pay or cause to be paid all production, severance, gathering, and other taxes imposed upon or in respect of the production or handling of its share of Unitized Substances.

ARTICLE 6 INSURANCE

6.1 For Operations by Unit Operator. The Unit Operator shall carry insurance for the benefit of the joint account to cover the Unit Operator's operations covered by this agreement, as follows:

6.1.1 Workmen's Compensation Insurance. In compliance with the Workmen's Compensation Act of the State of North Dakota.

6.1.2 Comprehensive General Liability Insurance, excluding products. A single combined limit of \$1,000,000.00 each accident for bodily injuries or death and property damage.

6.1.3 Comprehensive Automobile Public Liability and Property Damage Insurance. A single combined limit of \$1,000,000.00 each accident for bodily injuries or death and property damage.

6.2 For Contracted Operations. The Unit Operator shall require its contractors and subcontractors working or performing services on the premises covered hereby to comply with the Workmen's Compensation Act of the State of North Dakota and to carry such other insurance and in such amounts as the Unit Operator shall deem necessary.

6.3 No Insurance on Jointly Owned Property. Unit Operator shall not carry physical damage insurance on jointly owned property, it being understood and agreed that each Lessee will be responsible for its own interest in such properties and will assume its portion of any loss that occurs. Each Lessee hereby waives its rights of recovery against all other Lessees to the agreement and agrees that all insurance policies covering its interest in the jointly owned property will be suitably endorsed to effectuate this waiver. Unit Operator shall promptly notify Lessees in writing of all losses involving damage to jointly owned property in excess of \$1,000.

6.4 New Facility Insurance. Whenever construction of a new plant or other facility of substantial value is involved, Unit Operator shall obtain or cause to be obtained for the benefit of the Lessees "All-Risk" insurance, subject to a nominal deductible, to cover the project during the construction period, during all testing, and until completion and final acceptance by Unit Operator.

ARTICLE 7 ADJUSTMENT OF INVESTMENTS

7.1 Personal Property Taken Over. Upon the effective date hereof, Lessees shall deliver to Unit Operator the following:

7.1.1 Wells. All wells completed in the Unitized Formation, and all wells drilled no deeper than the base of the Unitized Formation upon which operations have been suspended or which have been plugged and abandoned.

7.1.2 Well and Lease Equipment. The casing and tubing in each such well, together with the wellhead connections thereon, sucker rods, and all other lease and operating equipment used in the operation of such wells which Unit Operator determines is necessary or desirable for conducting Unit Operations. Unit Operator shall have up to twelve (12) months after the effective date hereof within which to make all such determinations. Upon Unit Operator determining that any equipment is surplus, such equipment shall be returned to the Lessees who delivered same to Unit Operator and such equipment shall not be considered to have been taken over under this Plan of Unitization.

7.1.3 Records. A copy of all production and well records that pertain to such wells.

7.2 Inventory and Evaluation of Personal Property.

Lessees shall, at Unit Expense, inventory and evaluate in accordance with the provisions of Exhibit "E" the personal property taken over, listed as "controllable material" in the Material Classification Manual dated September, 1967, by the Council of Petroleum Accountants Societies of North America and sucker rods in all wells. For the adjustment of investment only the materials hereinafter enumerated shall be valued as follows:

Tubular Goods	Surface casing no value. One string
Casing -	of casing from the surface to the top perforation or interval open to production all weights, grades and sizes \$1.00 per foot.
Tubing -	All weights and grades
	2-3/8" O.D. at \$.50 per foot
	2-7/8" O.D. at \$.65 per foot
Line Pipe -	No value
Metal Cattle Guards -	No value
Buildings -	All buildings taken over pursuant to 7.1.2 having 80 square feet or more: wood frame corrugated iron - \$1.00 per sq. ft.; pre-fab steel - \$2.00 per sq. ft.

Units, Pumping -	at 2¢ per inch-pound of peak torque - all types
Heads, Casing -	\$50.00 each
Heads, Tubing -	\$100.00 each
Rods, Sucker -	all grades, no credit for scrapers 3/4" - 35 cents per foot 7/8" - 45 cents per foot 1" - 55 cents per foot
Bottom hole pumps -	2" and under \$200 2 1/2" \$250 3" \$300
Electric motors -	\$15.00/hp

The Lessees will determine the average price per barrel of capacity for purchasing and installing insulation and heat tapes on tanks, treaters and heaters. Such price multiplied by 0.75 shall be the "insulation value." The value of each insulated vessel taken over by Unit Operator shall be increased by an amount determined by multiplying the barrels of capacity of such vessel by the insulation value.

Except for prices listed above, all materials and equipment taken over shall be priced in accordance with the provisions of Section IV of Exhibit "E."

7.3 Initial Investment Adjustment. Upon approval of Lessees of the inventory and evaluation, investments shall be adjusted as follows:

7.3.1 Each Lessee shall be credited with the value of its interest in all personal property taken over under Section 7.1.2 and evaluated under Section 7.2 and shall be charged with an amount equal to that obtained by multiplying the total value of all personal property taken over under Section 7.1.2 and evaluated under Section 7.2 by such Lessee's Phase II Unit Participation.

7.3.2 If the charge against any Lessee under Section 7.3.1 is greater than the amount credited to such Lessee, the resulting net charge shall be an item of Unit Expense chargeable against such Lessee. If the credit to any Lessee under Section 7.3.1 is greater

than the amount charged against such Lessee the resulting net credit shall be paid to such Lessee by Unit Operator out of funds received by it in settlement of the net charges described above.

7.4 General Facilities. The acquisition of warehouses, warehouse stocks, lease houses, camps, facility systems, and office buildings necessary for Unit Operations shall be by negotiation between the owners thereof and Unit Operator, subject to the approval of the Operating Committee.

7.5 Ownership of Personal Property and Facilities. Each Lessee, individually, shall by virtue hereof own an undivided interest, equal to its Phase II Unit Participation in all personal property and facilities taken over or otherwise acquired by Unit Operator pursuant to this agreement.

7.6 Condition of Wells. All wells delivered to Unit Operator in accordance with Section 7.1 shall be considered to be in usable physical condition to produce from the Unitized Formation unless Unit Operator shall have made a report to the Lessees within a reasonable period of time (not to exceed six months) setting forth those wells which were unusable on the effective date of the Unit and are needed for Unit Operations, together with an estimate of costs to make such wells usable. Upon approval by Lessees in accordance with Section 1.6.2, Unit Operator will restore such wells to a usable condition or redrill same if necessary. The Lessees owning the tract upon which any such well is located shall reimburse Unit Operator for the actual costs and expenses incurred by Operator in restoring such well to a usable condition or redrilling same up to a maximum amount of \$30,300.00. If the total money expenditure for restoring such well to a usable condition exceeds such maximum amount, then the difference between the actual cost and expenses and the maximum amount will be charged as a Unit Expense, in accordance with Unit Participation set out for Phase II on Exhibit C.

Any unusable well not needed for Unit operations will not be restored to usable condition and there will be no assessment levied against the tract under this Section.

7.7 Intangible Investment Adjustment. Attached hereto and marked Exhibit G is a schedule to be used for making intangible investment adjustments as herein provided. Exhibit G sets forth the name of each Lessee and the amount such Lessee shall pay or receive at the time each intangible investment adjustment is made. The first such adjustment shall be made promptly upon commencement of the third new well drilled in the Unit Area for the joint account after the effective date of this Plan of Unitization and thereafter promptly upon commencement of each new well, with the final such adjustment being made upon commencement of the tenth such new well. The redrilling of an unusable well pursuant to Section 7.5 hereof shall not be deemed a new well. Upon each such adjustment, each Lessee owing money as shown on Exhibit G shall pay such amount to Unit Operator. From funds so paid Unit Operator shall pay those Lessee's entitled to receive money, the amounts shown on said Exhibit G. The Lessees, the debits, the credits and amounts to be paid or received, set forth on Exhibit G are based upon ownership of the wells in the Unit Area on the date shown on Exhibit G. If upon the commencement of any such new well (third through the tenth) the ownership has changed for any reason, the names and amounts shall be revised, using the same basis of computation, and such adjustment shall be made upon the basis of the ownership at that time.

ARTICLE 8 UNIT EXPENSE

8.1 Basis of Charge to Lessees. Unit Operator initially shall pay all Unit Expense. Each Lessee shall reimburse Unit Operator for its share of Unit Expense. Each Lessee's share shall be the same as its Unit Participation in effect at the time; provided that, all Unit Expense for

investments and operating costs attributable to secondary recovery operations shall be borne by Lessees in proportion to their Phase II Unit Participation. All charges, credits and accounting for Unit Expense shall be in accordance with Exhibit E.

8.2 Budgets. Before or as soon as practical after the effective date hereof, Unit Operator shall prepare a budget of estimated Unit Expense including a capital budget for the remainder of the calendar year, and, on or before the first day of each September thereafter, shall prepare such a budget for the ensuing calendar year. A budget shall set forth the estimated Unit Expense by quarterly periods. Budgets shall be estimates only, and shall be adjusted or corrected by the Operating Committee and Unit Operator whenever an adjustment or correction is proper. A copy of each budget and adjusted budget shall promptly be furnished to each Lessee.

8.3 Advance Billings. Unit Operator shall have the right to require Lessees to advance their respective shares of estimated Unit Expense by submitting to Lessees, on or before the 15th day of any month, an itemized estimate thereof for the succeeding month, with a request for payment in advance. Within fifteen (15) days thereafter, each Lessee shall pay to Unit Operator its share of such estimate. Adjustments between estimated and actual Unit Expense shall be made by Unit Operator at the close of each calendar month, and the accounts of Lessees shall be adjusted accordingly.

8.4 Commingling of Funds. No funds received by Unit Operator under this agreement need be segregated or maintained by it as a separate fund, but may be commingled with its own funds.

8.5 Lien of Unit Operator. Each Lessee grants to Unit Operator a lien upon its Oil and Gas Rights in each Tract, and a security interest in its share of Unitized Substances when extracted and its interest in all Unit equipment, to secure

payment of its share of Unit Expense, together with interest thereon at the rate of ten percent (10%) per annum. To the extent that Unit Operator has a security interest under the Uniform Commercial Code of the State, Unit Operator shall be entitled to exercise the rights and remedies of a secured party under the Code. The bringing of a suit and the obtaining of judgment by Unit Operator for the secured indebtedness shall not be deemed an election of remedies or otherwise affect the lien rights or security interest as security for the payment thereof. In addition, upon default by any Lessee in the payment of its share of Unit Expense, Unit Operator shall have the right, without prejudice to other rights or remedies, to collect from the purchaser the proceeds from the sale of such Lessee's share of Unitized Substances until the amount owed by such Lessee, plus interest, has been paid. Each purchaser shall be entitled to rely upon Unit Operator's written statement concerning the amount of any default.

8.6 Unpaid Unit Expense. If any Lessee fails to pay its share of Unit Expense within sixty (60) days after rendition of a statement therefor by Unit Operator, each other Lessee agrees, upon request of Unit Operator, to pay its proportionate part of the unpaid share of Unit Expense of the defaulting Lessee. The Lessees that pay the share of Unit Expense of a defaulting Lessee shall be reimbursed by the Unit Operator for the amount so paid, plus any interest collected thereon, upon receipt by Unit Operator of any past due amount collected from the defaulting Lessee. Any Lessee so paying a defaulting Lessee's share of Unit Expense shall be subrogated to the lien and rights herein granted Unit Operator and the Dickinson Heath Sand Unit.

8.7 Uncommitted Royalty. Should a Royalty Interest in any Tract not be subject to this Plan of Unitization, and as a result thereof, the actual Royalty Interest payments with respect to such Tract are more or less than the Royalty Interest payments

computed on the basis of the Unitized Substances that are allocated to such Tract under the Unit Agreement, the difference shall be borne by or inure to the benefit of Lessees, in proportion to their respective Unit Participations in effect at the time; however, the difference to be borne by or inure to the benefit of Lessees shall not exceed an amount computed on the basis of one-eighth (1/8) of the difference between the Unitized Substances allocated to the Tract and the Unitized Substances produced from the Tract. Such adjustments shall be made by charges and credits to the joint account.

ARTICLE 9 NONUNITIZED FORMATIONS

9.1 Right to Operate. Any Lessee that now has or hereafter acquires the right to drill for and produce oil, gas or other minerals, from other than the Unitized Formation, shall have the right to do so notwithstanding this agreement or the Unit Agreement. In exercising the right, however, the Lessee shall exercise reasonable precaution to prevent unreasonable interference with Unit Operations. No Lessee shall produce Unitized Substances through any well drilled or operated by it. If any Lessee drills any well into or through the Unitized Formation, the Unitized Formation shall be protected in a manner satisfactory to Lessees so that the production of Unitized Substances will not be adversely affected.

ARTICLE 10 TITLES

10.1 Warranty and Indemnity. Each party hereto who may claim to own a Lessee Interest in and to any Tract or the Unitized Substances allocated thereto hereby agrees to indemnify and hold harmless the other Lessees from any loss due to failure, in whole or in part, of its title to any such interest, except failure of title arising out of Unit Operations; provided that, such indemnity shall be limited to an amount equal to the net value that has been received from the sale or receipt of Unitized

Substances attributed to the interest as to which title failed. Each failure of title will be deemed to be effective, insofar as this agreement is concerned, as of the first day of the calendar month in which such failure is finally determined, and there shall be no retroactive adjustment of Unit Expense, or retroactive allocation of Unitized Substances or the proceeds therefrom, as a result of title failure.

10.2 Failure Because of Unit Operations. The failure of title to any Lessee Interest in any Tract by reason of Unit Operations, including nonproduction from such Tract, shall not change the Unit Participation of the Lessee whose title failed in relation to the Unit Participations of the other Lessees at the time of the title failure.

ARTICLE 11
LIABILITY, CLAIMS AND SUITS

11.1 Individual Liability. The duties, obligations, and liabilities of Lessees shall be several and not joint or collective.

11.2 Settlements. Unit Operator may settle any single damage claim or suit involving Unit Operations not involving an expenditure in excess of Two Thousand Five Hundred Dollars (\$2,500.00) provided the payment is in complete settlement of such claim or suit. If the amount required for settlement exceeds the above specified amount, the Operating Committee shall assume and take over the further handling of the claim or suit unless such authority is expressly delegated to Unit Operator. All costs and expense of handling, settling, or otherwise discharging such claim or suit shall be an item of Unit Expense. If a claim is made against any Lessee or if any Lessee is sued on account of any matter arising from Unit Operations and over which such Lessee individually has no control because of the rights given Lessees and Unit Operator by this agreement and the Unit Agreement, the Lessee shall immediately notify the Unit Operator, and the claim or suit shall be treated as any other claim or suit involving Unit Operations.

ARTICLE 12
INTERNAL REVENUE PROVISION

12.1 Internal Revenue Provision. Notwithstanding any provisions herein that the rights and liabilities of the parties hereunder are several and not joint or collective, or that this agreement and the operations hereunder shall not constitute a partnership, if for Federal income tax purposes this agreement and the operations hereunder are regarded as a partnership, then each of the parties hereto hereby elects to be excluded from the application of all of the provisions of Subchapter K, Chapter 1, Subtitle A, of the Internal Revenue Code of 1954, as permitted and authorized by Section 761 of said Code and the regulation promulgated thereunder. Operator is hereby authorized and directed to execute on behalf of each of the parties hereto such evidence of this election as may be required by the Secretary of the Treasury of the United States or the Federal Internal Revenue Service, including specifically, but not by way of limitation, all of the returns, statements, and the data required by Federal Regulations 1.761-1(a). Should there be any requirement that each party hereto further evidence this election, each party hereto agrees to execute such documents and furnish such other evidence as may be required by the Federal Internal Revenue Service or as may be necessary to evidence this election. Each party hereto further agrees not to give any notices or take any other action inconsistent with the election made hereby. If any present or future income tax laws of the state in which the property covered by this agreement is located, or any future income tax law of the United States, contain, or shall hereafter contain, provisions similar to those contained in Subchapter K, Chapter 1, Subtitle A, of the Internal Revenue Code of 1954, under which an election similar to that provided by Section 761 of said Subchapter K is permitted, each of the parties hereto hereby makes such election or agrees to make such election as may be permitted by such laws. In making this election, each of the parties hereto hereby states that the income derived by him from the operations under this agreement can be

adequately determined without the computation of partnership taxable income.

ARTICLE 13
NOTICES

13.1 Notices. All notices required hereunder shall be in writing and shall be deemed to have been properly served when sent by mail or telegram to the address of the representative of each Lessee on the Operating Committee as furnished to Unit Operator in accordance with Section 1.1.

ARTICLE 14
WITHDRAWAL OF LESSEE

14.1 Withdrawal. A Lessee may withdraw from this agreement by transferring, without warranty of title, either express or implied, to the other Lessees who do not wish to withdraw, all of its Oil and Gas Rights together with its interest in all Unit Equipment and in all wells used in Unit Operations. Such transfer shall not relieve said Lessee from any obligation or liability incurred prior to the date of delivery of the transfer, which delivery may be made to Unit Operator as agent for the transferees. The interest transferred shall be owned by the transferees in proportion to their respective Unit Participation. The transferees, in proportion to the respective interests so acquired, shall pay transferor, for its interest in Unit Equipment, the fair net salvage value thereof, after deducting costs of plugging and abandoning wells, salvaging Unit Equipment, and returning the Unit Area to its original condition, as estimated and fixed by Lessees. After the date of delivery of the transfer, the withdrawing Lessee shall be relieved from all further obligations and liability hereunder, and the rights of such Lessee hereunder shall cease insofar as they existed by virtue of the interest transferred.

ARTICLE 15
ABANDONMENT OF WELLS

15.1 Rights of Former Owners. If the Operating Committee decides to abandon permanently any well within the Unit Area prior

to termination of the Unit Agreement, Unit Operator shall give written notice thereof to the Lessees of the Tract on which the well is located, and they shall have the option for a period of ninety (90) days after the sending of such notice to notify Unit Operator in writing of their election to take over and own the well. Within ten (10) days after the Lessees of the Tract have notified Unit Operator of their election to take over the well, they shall pay Unit Operator, for credit to the joint account, the amount estimated by Lessees to be the net salvage value of the casing and equipment in and on the well. The Lessees of the Tract, by taking over the well, agree to seal off effectively and protect the Unitized Formation, and upon abandonment to plug the well in compliance with applicable laws and regulations.

15.2 Plugging. If the Lessees of a Tract do not elect to take over a well located thereon which is proposed for abandonment, Unit Operator shall plug and abandon the well in compliance with applicable laws and regulations.

ARTICLE 16 ABANDONMENT OF OPERATIONS

16.1 Termination. Upon termination of the Plan of Unitization the following will occur:

16.1.1 Oil and Gas Rights. Oil and Gas Rights in and to each separate Tract shall no longer be affected by this agreement, and thereafter the parties shall be governed by the terms and provisions of the leases, contracts, and other instruments affecting the separate Tracts.

16.1.2 Right to Operate. Lessees of any Tract that desire to take over and continue to operate wells located thereon may do so by paying Unit Operator, for credit to the joint account, the net salvage value of the casing and equipment in and on the wells taken over, as estimated by Lessees, and by agreeing to plug properly each well at such time as it is abandoned.

16.1.3 Salvaging Wells. Unit Operator shall salvage as much of the casing and equipment in or on wells not taken over by Lessees of separate Tracts as can economically and reasonably be salvaged, and shall cause the wells to be plugged and abandoned properly.

16.1.4 Cost of Salvaging. Lessees shall share the cost of salvaging, liquidation or other distribution of assets and properties used in Unit Operations in proportion to their then effective respective Unit Participations.

IN WITNESS WHEREOF, the parties hereto have executed this agreement on the dates opposite their respective signatures.

UNIT OPERATOR AND LESSEE

CONTINENTAL OIL COMPANY

Date _____ By _____
Attorney in Fact

LESSEES

Date _____

Date _____

Date _____

Date _____

Date _____

Date _____

Date _____

STATE OF _____ }
COUNTY OF _____ } ss.

On this _____ day of _____, 19____,
before me, the undersigned Notary Public, personally appeared

_____, personally
known to me to be and who, being by me duly sworn, did say that
he is the person who is described in the within and foregoing
instrument as Attorney in Fact of CONTINENTAL OIL COMPANY, a
Delaware corporation, and who, as such Attorney in Fact,
subscribed, signed and executed said instrument and he duly
acknowledged to me that as such Attorney in Fact he subscribed,
signed and executed said instrument as his free and voluntary
act and deed on behalf of and as the free and voluntary act
and deed of said CONTINENTAL OIL COMPANY, as principal, and for
the purposes therein contained, and by authority of a resolution
of its Board of Directors.

My commission expires: _____

Witness my hand and official seal.

Notary Public (Signature)

Notary's Name (Typed or Printed)

Notary's Residence (Typed or Printed)

STATE OF _____ }
COUNTY OF _____ } ss.

On this _____ day of _____, 19____, before
me personally appeared _____,
known to me to be the _____ President of the corporation
described in and that executed the within instrument, and acknowl-
edged to me that such corporation executed the same.

Given under my hand and official seal this _____ day
of _____, 19____.

Notary Public

Name of Notary, typed or
Printed

My commission expires: _____

EXHIBIT "A"

DICKINSON HEATH SAND UNIT

Attached to and made a part of the Dickinson Heath Plan of Unitization:

<u>Tract No.</u>	<u>Legal Description</u>	<u>Tract Participation</u>	
		<u>Phase I</u>	<u>Phase II</u>
1	Lots 1, 2, S $\frac{1}{2}$ NE $\frac{1}{4}$, Sec. 4, T139N, R97W	.0000343	.0004796
2	Lots 1, 2, 3, 4, S $\frac{1}{2}$ N $\frac{1}{2}$, Sec. 3, T139N, R97W	.0064385	.0186188
3	Lots 3, 4, S $\frac{1}{2}$ NW $\frac{1}{4}$, SW $\frac{1}{4}$, Sec. 2, T139N, R97W	.0069305	.0144771
4	SE $\frac{1}{4}$, Sec. 2, T139N, R97W	.0000009	.0000127
5	Lots 1, 2, S $\frac{1}{2}$ NE $\frac{1}{4}$, Sec. 2, T139N, R97W	.0005575	.0078047
6	Lots 1, 2, 3, 4, S $\frac{1}{2}$ N $\frac{1}{2}$, Sec. 1, T139N, R97W	.0001380	.0019321
7	S $\frac{1}{2}$, Sec. 33, T140N, R97W	.0153918	.0107250
8	N $\frac{1}{2}$, Sec. 33, T140N, R97W	.0005443	.0076196
9	W $\frac{1}{2}$, Sec. 34, T140N, R97W	.0188121	.0212066
10	E $\frac{1}{2}$, Sec. 34, T140N, R97W	.0425022	.0621159
11	S $\frac{1}{2}$, Sec. 35, T140N, R97W	.0178525	.0483440
12	NE $\frac{1}{4}$, Sec. 35, T140N, R97W	.0419617	.0465061
13	S $\frac{1}{2}$, Sec. 36, T140N, R97W	.0383328	.0244750
14	N $\frac{1}{2}$, Sec. 36, T140N, R97W	.0515164	.0687483
15	Lots 3, 4, SE $\frac{1}{4}$, E $\frac{1}{2}$ SW $\frac{1}{4}$, Sec. 31, T140N, R96W	.0031382	.0189942
16	Lots 1, 2, E $\frac{1}{2}$ NW $\frac{1}{4}$, Sec. 31, T140N, R96W	.0088562	.0219841
17	NE $\frac{1}{4}$, Sec. 31, T140N, R96W	.0172943	.0266113
18	SW $\frac{1}{4}$, Sec. 32, T140N, R96W	.0008564	.0119894
19	SE $\frac{1}{4}$, Sec. 32, T140N, R96W	.0114521	.0093428
20	NW $\frac{1}{4}$, Sec. 32, T140N, R96W	.0044658	.0197317
21	NE $\frac{1}{4}$, Sec. 32, T140N, R96W	.0037993	.0096794
22	N $\frac{1}{2}$ SW $\frac{1}{4}$, Sec. 33, T140N, R96W	.0000138	.0001927
23	N $\frac{1}{2}$, Sec. 33, T140N, R96W	.0067652	.0054512
24	S $\frac{1}{2}$, Sec. 27, T140N, R97W	.0268149	.0130041
25	N $\frac{1}{2}$, Sec. 27, T140N, R97W	.0002958	.0041408
26	W $\frac{1}{2}$, Sec. 26, T140N, R97W	.0133241	.0156815
27	E $\frac{1}{2}$, Sec. 26, T140N, R97W	.0361328	.0339601
28	S $\frac{1}{2}$, Sec. 25, T140N, R97W	.0376244	.0540176
29	NW $\frac{1}{4}$, Sec. 25, T140N, R97W	.0001252	.0017533

<u>Tract No.</u>	<u>Legal Description</u>	<u>Tract Participation</u>	
		<u>Phase I</u>	<u>Phase II</u>
30	NE $\frac{1}{4}$, Sec. 25, T140N, R97W	.0002781	.0038926
31	Lots 3, 4, E $\frac{1}{2}$ SW $\frac{1}{2}$, Sec. 30, T140N, R96W	.0545098	.0281301
32	SE $\frac{1}{4}$, Sec. 30, T140N, R96W	.0008423	.0097316
33	Lots 1, 2, E $\frac{1}{2}$ NW $\frac{1}{2}$, Sec. 30, T140N, R96W	.0284200	.0192818
34	NE $\frac{1}{4}$, Sec. 30, T140N, R96W	.0404603	.0275386
35	SW $\frac{1}{4}$, Sec. 29, T140N, R96W	.0025171	.0081254
36	SE $\frac{1}{4}$, Sec. 29, T140N, R96W	.0052661	.0126215
37	N $\frac{1}{2}$, Sec. 29, T140N, R96W	.0281971	.0324250
38	S $\frac{1}{2}$, Sec. 28, T140N, R96W	.0022607	.0067879
39	N $\frac{1}{2}$, Sec. 28, T140N, R96W	.0055502	.0149947
40	W $\frac{1}{2}$, Sec. 27, T140N, R96W	.0066458	.0018212
41	SE $\frac{1}{4}$, Sec. 22, T140N, R97W	.0000049	.0000681
42	S $\frac{1}{2}$, Sec. 23, T140N, R97W	.0089000	.0050399
43	SW $\frac{1}{4}$, Sec. 24, T140N, R97W	.0000223	.0003126
44	SE $\frac{1}{4}$, Sec. 24, T140N, R97W	.0000022	.0000306
45	Lots 3, 4, E $\frac{1}{2}$ SW $\frac{1}{4}$, T140N, R96W	.0001858	.0026014
46	E $\frac{1}{2}$, Sec. 19, T140N, R96W	.0026126	.0093493
47	S $\frac{1}{2}$, Sec. 20, T140N, R96W	.0400628	.0255737
48	N $\frac{1}{2}$, Sec. 20, T140N, R96W	.0396916	.0202703
49	S $\frac{1}{2}$, Sec. 21, T140N, R96W	.0110967	.0222063
50	N $\frac{1}{2}$, Sec. 21, T140N, R96W	.0573161	.0348998
51	S $\frac{1}{2}$, Sec. 22, T140N, R96W	.0013592	.0085652
52	N $\frac{1}{2}$, Sec. 22, T140N, R96W	.0867022	.0427044
53	W $\frac{1}{2}$, Sec. 23, T140N, R96W	.0277060	.0182180
54	SE $\frac{1}{4}$, Sec. 23, T140N, R96W	.0000338	.0004725
55	NE $\frac{1}{4}$, Sec. 23, T140N, R96W	.0000893	.0012498
56	S $\frac{1}{2}$, NE $\frac{1}{4}$, Sec. 17, T140N, R96W	.0242209	.0074167
57	SW $\frac{1}{4}$, Sec. 16, T140N, R96W	.0004287	.0060023
58	SE $\frac{1}{4}$, Sec. 16, T140N, R96W	.0000482	.0006745
59	NW $\frac{1}{4}$, Sec. 16, T140N, R96W	.0000986	.0013797
60	W $\frac{1}{2}$, Sec. 15, T140N, R96W	.0002594	.0036321
61	E $\frac{1}{2}$, Sec. 15, T140N, R96W	.0590487	.0237544
62	W $\frac{1}{2}$, Sec. 14, T140N, R96W	.0530413	.0185398

<u>Tract No.</u>	<u>Legal Description</u>	<u>Tract Participation</u>	
		<u>Phase I</u>	<u>Phase II</u>
63	E $\frac{1}{2}$, Sec. 14, T140N, R96W	.0001357	.0019002
64	SE $\frac{1}{4}$, Sec. 3, T139N, R97W	.0000001	.0000004
65	Lots 1, 2, 3, 4, S $\frac{1}{2}$ N $\frac{1}{2}$, Sec. 5, T139N, R96W	<u>.0000134</u>	<u>.0001879</u>
	Totals	1.0000000	1.0000000

EXHIBIT "C"

DICKINSON HEATH SAND UNIT

Attached to and made a part of the Dickinson Heath Plan of Unitization:

<u>Lessees</u>	<u>Tracts</u>	<u>Interest In Tract</u>	<u>Participation</u>	
			<u>Phase I</u>	<u>Phase II</u>
Boswell Corporation	2	50%	<u>.0032193</u>	<u>.0093094</u>
Totals			.0032193	.0093094
Cardinal Petroleum Company	16	98.35527%	.0087105	.0216225
	21	97.50%	.0037043	.0094374
	32	100%	.0008423	.0097316
	37	97.5%	.0274922	.0316144
	46	50%	.0013063	.0046746
	49	100%	.0110967	.0222063
	58	50%	.0000241	.0003373
	60	69.92188%	.0001814	.0025396
	61	31.91964%	.0188481	.0075823
	62	97.32143%	<u>.0516206</u>	<u>.0180432</u>
Totals			.1238265	.1277892
Central Oil Company	26	58.59375%	<u>.0078071</u>	<u>.0091884</u>
Totals			.0078071	.0091884
Cities Service Oil Company	20	25%	.0011164	.0049329
	35	25%	<u>.0006293</u>	<u>.0020314</u>
Totals			.0017457	.0069643
Continental Oil Company	8	12.5%	.0000680	.0009524
	9	50%	.0094061	.0106033
	10	50%	.0212511	.0310580
	12	50%	.0209808	.0232530
	13	60%	.0229997	.0146850
	14	30.46875%	.0156965	.0209467
	15	50%	.0015691	.0094971
	17	70.99125%	.0122775	.0188917
	18	51.56250%	.0004415	.0061820

<u>Lessees</u>	<u>Tracts</u>	<u>Interest In Tract</u>	<u>Participation</u>	
			<u>Phase I</u>	<u>Phase II</u>
Continental Oil Company	22	100%	.0000138	.0001927
	23	100%	.0067652	.0054512
	24	50%	.0134075	.0065021
	27	50%	.0180664	.0169800
	28	50%	.0188122	.0270088
	31	75%	.0408824	.0210975
	34	100%	.0404603	.0275386
	36	75%	.0039495	.0094661
	38	75%	.0016955	.0050909
	39	80.13600%	.0044477	.0120162
	40	100%	.0066458	.0018212
	41	50%	.0000024	.0000341
	46	50%	.0013063	.0046747
	47	75%	.0300471	.0191803
	48	13.12254%	.0052085	.0026600
	50	18.75%	.0107468	.0065437
	51	62.50%	.0008495	.0053533
	52	18.75%	.0162566	.0080071
	53	100%	.0277060	.0182180
	54	35.06250%	.0000085	.0001184
	55	50%	.0000447	.0006249
	56	4.68750%	.0011354	.0003476
	60	2.34375%	.0000061	.0000851
	63	100%	<u>.0001357</u>	<u>.0019002</u>
Totals			.3532902	.3369819
Felmont Oil Corporation	14	18.75%	.0096593	.0128903
	18	18.75%	<u>.0001606</u>	<u>.0022480</u>
Totals			.0098199	.0151383

<u>Lessees</u>	<u>Tracts</u>	<u>Interest In Tract</u>	<u>Participation</u>	
			<u>Phase I</u>	<u>Phase II</u>
A. G. Golden	48	1.56250%	<u>.0006202</u>	<u>.0003167</u>
Totals			.0006202	.0003167
G. G. Green	26	3.90625%	<u>.0005205</u>	<u>.0006125</u>
Totals			.0005205	.0006125
Helmerich & Payne, Inc.	56	23.43750%	.0056768	.0017383
	60	11.71875%	<u>.0000304</u>	<u>.0004257</u>
Totals			.0057072	.0021640
Lewis W. Hill, Jr.	13	20%	.0076665	.0048950
	14	10.15625%	.0052321	.0069823
	17	11.83188%	.0020462	.0031486
	18	7.03125%	.0000602	.0008430
	31	12.50%	.0068137	.0035163
	36	12.50%	.0006583	.0015777
	38	12.50%	.0002826	.0008485
	47	10.93750%	.0043819	.0027971
	48	15.02991%	.0059656	.0030466
	50	20.31250%	.0116423	.0070890
	51	11.42578%	.0001553	.0009786
	52	40.62500%	.0352228	.0173487
	56	1.17190%	.0002838	.0000869
	57	25%	.0001072	.0015006
	59	17.05800%	.0000169	.0002353
	60	13.67187%	.0000354	.0004966
	61	26.00447%	<u>.0153553</u>	<u>.0061772</u>
Totals			.0959261	.0615680
Huston Huffman	56	4.68750%	.0011353	.0003477
	60	2.34375%	<u>.0000061</u>	<u>.0000851</u>
			.0011414	.0004328
Hunt Petroleum Corporation	48	25%	<u>.0099229</u>	<u>.0050676</u>
Totals			.0099229	.0050676

<u>Lessees</u>	<u>Tracts</u>	<u>Interest In Tract</u>	<u>Participation</u>	
			<u>Phase I</u>	<u>Phase II</u>
H. L. Hunt	21	2.50%	.0000950	.0002420
	37	2.50%	<u>.0007049</u>	<u>.0008106</u>
Totals			.0007999	.0010526
Clyde W. Jones	16	1.64473%	.0001457	.0003616
(Clyde W. Jones - 50%	17	1.64500%	.0002845	.0004378
and				
Linda K. Jones - 50%)	18	3.12500%	<u>.0000268</u>	<u>.0003747</u>
Totals			.0004570	.0011741
King Resources	25	100%	<u>.0002958</u>	<u>.0041408</u>
Totals			.0002958	.0041408
Gene C. Litch	5	8.33330%	<u>.0000465</u>	<u>.0006504</u>
Totals			.0000465	.0006504
Lone Star Producing Company	42	100%	.0089000	.0050399
	44	100%	.0000022	.0000306
	54	74.93750%	.0000253	.0003541
	55	50%	<u>.0000446</u>	<u>.0006249</u>
Totals			.0089721	.0060495
J. Hiram Moore	39	19.86400%	.0011025	.0029785
(J. Hiram Moore,	51	2.34375%	.0000319	.0002007
Betty Jane Moore, and	59	5.20620%	.0000051	.0000718
Michael Harrison Moore,	61	3.57142%	.0021089	.0008484
Trustees of The Moore	62	2.67857%	<u>.0014207</u>	<u>.0004966</u>
Trust)				
Totals			.0046691	.0045960
North American Royalties, Inc.	13	20%	.0076666	.0048950
	14	10.15625%	.0052321	.0069823
	17	15.53187%	.0026861	.0041332
	18	7.03125%	.0000602	.0008430
	20	25%	.0011165	.0049329
	31	12.50%	.0068137	.0035163
	35	25%	.0006293	.0020313

<u>Lessees</u>	<u>Tracts</u>	<u>Interest In Tract</u>	<u>Participation</u>	
			<u>Phase I</u>	<u>Phase II</u>
North American Royalties, Inc.	36	12.50%	.0006583	.0015777
	38	12.50%	.0002826	.0008485
	47	14.06250%	.0056338	.0035963
	48	45.28505%	.0179744	.0091794
	50	60.93750%	.0349270	.0212671
	51	23.73047%	.0003225	.0020326
	52	40.62500%	.0352228	.0173486
	56	66.01560%	.0159896	.0048962
	57	75%	.0003215	.0045017
	58	50%	.0000241	.0003372
	59	77.73580%	.0000766	.0010726
	61	38.50447%	<u>.0227364</u>	<u>.0091465</u>
Totals			.1583741	.1031384
Joe and Lillian Ridl	30	100%	<u>.0002781</u>	<u>.0038926</u>
Totals			.0002781	.0038926
Shell Oil Company	1	100%	.0000343	.0004796
	2	50%	.0032192	.0093094
	3	100%	.0069305	.0144771
	7	100%	.0153918	.0107250
	8	87.5%	.0004763	.0066672
	9	50%	.0094060	.0106033
	10	50%	.0212511	.0310579
	11	100%	.0178525	.0483440
	12	50%	.0209809	.0232531
	14	30.46875%	.0156964	.0209467
	24	50%	.0134074	.0065020
	26	37.5%	.0049965	.0058806
	27	50%	.0180664	.0169801
	28	50%	.0188122	.0270088
	41	50%	.0000025	.0000340
	64	100%	<u>.0000001</u>	<u>.0000004</u>
Totals			.1665241	.2322692

<u>Lessees</u>	<u>Tracts</u>	<u>Interest In Tract</u>	<u>Participation</u>	
			<u>Phase I</u>	<u>Phase II</u>
Hudson Smart	18	12.50%	<u>.0001071</u>	<u>.0014987</u>
Totals			.0001071	.0014987
C. C. Spencer	5	16.66670%	<u>.0000929</u>	<u>.0013008</u>
Totals			.0000929	.0013008
David J. Sorenson	6	100%	<u>.0001380</u>	<u>.0019321</u>
Totals			.0001380	.0019321
Superior Oil Company	15	50%	.0015691	.0094971
	20	50%	.0022329	.0098659
	33	100%	.0284200	.0192818
	35	50%	.0012585	.0040627
	45	100%	<u>.0001858</u>	<u>.0026014</u>
Totals			.0336663	.0453089
Union Oil Company	4	100%	.0000009	.0000127
	5	75%	.0004181	.0058535
	19	100%	.0114521	.0093428
	65	100%	<u>.0000134</u>	<u>.0001879</u>
Totals			.0118845	.0153969
Louis and Mildred Zahradnik	29	100%	.0001252	.0017533
	43	100%	<u>.0000223</u>	<u>.0003126</u>
Totals			.0001475	.0020659

EXHIBIT " E "

Attached to and made a part of PLAN OF UNITIZATION
DICKINSON HEATH SAND UNIT
STARK COUNTY, NORTH DAKOTA

ACCOUNTING PROCEDURE JOINT OPERATIONS

I. GENERAL PROVISIONS

1. Definitions

"Joint Account" shall mean the account showing the charges and credits accruing because of the Joint Operations and which are to be shared by the Parties.

"Joint Property" shall mean the real and personal property subject to the agreement to which this Accounting Procedure is attached.

"Joint Operations" shall mean all operations necessary or proper for the development, operation, protection and maintenance of the Joint Property.

"Operator" shall mean the party designated to conduct the Joint Operations.

"Non-Operators" shall mean the parties to this agreement other than the Operator.

"Parties" shall mean Operator and Non-Operators.

"Material" shall mean personal property, equipment or supplies acquired or held for use on the Joint Property.

"Controllable Material" shall be defined as set forth under the subparagraph selected below:

- A. ☒ Material which at the time is so classified in the Material Classification Manual as most recently recommended by the Council of Petroleum Accountants Societies of North America.
- B. ☐ Material which is ordinarily so classified and controlled by Operator in the conduct of its operations. List shall be furnished Non-Operators upon request.

2. Statements and Billings

Operator shall bill Non-Operators on or before the last day of each month for their proportionate share of costs and expenses for the preceding month. Such bills will be accompanied by statements reflecting the total charges and credits as set forth under the subparagraph selected below:

- A. ☐ Statement in detail of all charges and credits to the Joint Account.
- B. ☐ Statement of all charges and credits to the Joint Account, summarized by appropriate classifications indicative of the nature thereof.
- C. ☒ Statement of all charges and credits to the Joint Account, summarized by appropriate classification indicative of the nature thereof, except that items of Controllable Material and unusual charges and credits shall be detailed.

3. Advances and Payments by Non-Operators

Unless otherwise provided for in the agreement, the Operator may require the Non-Operators to advance their share of estimated cash outlay for the succeeding month's operation. Operator shall adjust each monthly billing to reflect advances received from the Non-Operators.

Each Non-Operator shall pay its proportion of all bills within fifteen (15) days after receipt. If payment is not made within such time, the unpaid balance shall bear interest monthly at the rate of ten per cent (10%) per annum or the maximum contract rate permitted by the applicable usury laws in the state in which the Joint Property is located, whichever is the lesser.

4. Adjustments

Payment of any such bills shall not prejudice the right of any Non-Operator to protest or question the correctness thereof; provided however, all bills and statements rendered to Non-Operators by Operator during any calendar year shall conclusively be presumed to be true and correct after twenty-four (24) months following the end of any such calendar year, unless within the said twenty-four (24) month period a Non-Operator takes written exception thereto and makes claim on Operator for adjustment. No adjustment favorable to Operator shall be made unless it is made within the same prescribed period. The provisions of this paragraph shall not prevent adjustments resulting from a physical inventory of the Joint Property as provided for in Section VII.

5. Audits

A Non-Operator, upon notice in writing to Operator and all other Non-Operators, shall have the right to audit Operator's accounts and records relating to the accounting hereunder for any calendar year within the twenty-four (24) month period following the end of such calendar year; provided however, the making of an audit shall not extend the time for the taking of written exception to and the adjustments of accounts as provided for in Paragraph 4 of this Section I. Where there are two or more Non-Operators, the Non-Operators shall make every reasonable effort to conduct joint or simultaneous audits in a manner which will result in a minimum of inconvenience to the Operator. Operator shall bear no portion of the Non-Operators' audit cost incurred under this paragraph unless agreed to by the Operator.

6. Approval by Non-Operators

Where an approval or other agreement of Non-Operators is expressly required under Paragraphs 5A, 5B, 6A and 8 of Section II, Section III, Section V, Section VI, and Paragraph 4 of Section VII, of this Accounting Procedure and if the agreement to which this Accounting Procedure is attached contains no contrary provisions in regard thereto, the Operator shall notify all Non-Operators and the agreement or approval of a majority in interest of the Non-Operators shall be controlling on all Non-Operators.

II. DIRECT CHARGES

Operator shall charge the Joint Account with the following items:

1. Rentals and Royalties

Lease rentals and royalties paid by Operator for the Joint Operations.

2. Labor

- A. (1) Salaries and wages of Operator's employees directly employed on the Joint Property in the conduct of Joint Operations.
- (2) Salaries of first-level supervisors in the field if such charges are excluded from overhead rates in Option A of Section III.
- (3) Salaries and wages of technical employees temporarily assigned to and directly employed on the Joint Property if such charges are excluded from overhead rates in Option B of Section III.
- (4) Salaries and wages of technical employees either temporarily or permanently assigned to and directly employed in the operation of the Joint Property if such charges are excluded from overhead rates in Option C of Section III.
- B. Operator's cost of holiday, vacation, sickness and disability benefits and other customary allowances paid to the employees whose salaries and wages are chargeable to the Joint Account under Paragraph 2A of this Section II and Paragraph 1A of Section III; except that in the case of those employees only a pro rata portion of whose salaries and wages are chargeable to the Joint Account under Paragraph 1A of Section III, not more than the same pro rata portion of the benefits and allowances herein provided for shall be charged to the Joint Account. Cost under this Paragraph 2B may be charged on a "when and as paid basis" or by "percentage assessment" on the amount of salaries and wages chargeable to the Joint Account under Paragraph 2A of this Section II and Paragraph 1A of Section III. If percentage assessment is used, the rate shall be based on the Operator's cost experience.
- C. Expenditures or contributions made pursuant to assessments imposed by governmental authority which are applicable to Operator's labor cost of salaries and wages chargeable to the Joint Account under Paragraphs 2A and 2B of this Section II and Paragraph 1A of Section III.
- D. Reasonable personal expenses of those employees whose salaries and wages are chargeable to the Joint Account under Paragraph 2A of this Section II and for which expenses the employees are reimbursed under Operator's usual practice.

3. Employee Benefits

Operator's current cost of established plans for employees' group life insurance, hospitalization, pension, retirement, stock purchase, thrift, bonus, and other benefit plans of a like nature, applicable to Operator's labor cost chargeable to the Joint Account under Paragraphs 2A and 2B of this Section II and Paragraph 1A of Section III shall be chargeable as indicated in the subparagraph selected below:

- A. ☐ Operator's actual cost.
- B. ☒ Operator's actual cost not to exceed fifteen per cent (15%).

4. Material

Material purchased or furnished by Operator for use on the Joint Property as provided under Section IV. So far as it is reasonably practical and consistent with efficient and economical operation, only such Material shall be purchased for or transferred to the Joint Property as may be required for immediate use; and the accumulation of surplus stocks shall be avoided.

5. Transportation

Transportation of employees and Material necessary for the Joint Operations but subject to the following limitations:

- A. If Material is moved to the Joint Property from the Operator's warehouse or other properties, no charge shall be made to the Joint Account for a distance greater than the distance from the nearest reliable supply store, recognized barge terminal, or railway receiving point where like material is normally available, unless agreed to by Operator and Non-Operators.
- B. If surplus Material is moved to Operator's warehouse or other storage point, no charge shall be made to the Joint Account for a distance greater than the distance to the nearest reliable supply store, recognized barge terminal, or railway receiving point unless agreed to by Operators and Non-Operators. No charge shall be made to the Joint Account for moving Material to other properties belonging to Operator, unless agreed to by Operator and Non-Operators.
- C. In the application of Subparagraphs A and B above, there shall be no equalization of actual gross trucking costs of \$100 or less.

6. Services

- A. The cost of contract services and utilities procured from outside sources other than services covered by Paragraph 8 of this Section II and Paragraph 1B of Section III. The cost of professional consultant services shall not be charged to the Joint Account unless agreed to by Operator and Non-Operators.
- B. Use and service of equipment and facilities furnished by Operator as provided in Paragraph 5 of Section IV.

7. Damages and Losses to Joint Property

All costs or expenses necessary for the repair or replacement of Joint Property made necessary because of damages or losses incurred by fire, flood, storm, theft, accident, or other cause, except to the extent that the damage or loss could have been avoided through the exercise of reasonable diligence on the part of Operator. Operator shall furnish Non-Operators written notice of damages or losses incurred as soon as practicable after a report thereof has been received by Operator.

8. Legal Expense

All costs and expenses of handling, investigating, and settling litigation or claims arising by reason of the Joint Operations or necessary to protect or recover the Joint Property, including, but not limited to, attorney's fees, court costs, cost of investigation or procuring evidence and amounts paid in settlement or satisfaction of any such litigation or claims; provided, (a) no charge shall be made for the services of Operator's legal staff or other regularly employed personnel (such services being considered to be Administrative Overhead under Section III), unless agreed to by Operator and Non-Operators, and (b) no charge shall be made for the fees and expenses of outside attorneys unless the employment of such attorneys is agreed to by Operator and Non-Operators.

9. Taxes

All taxes of every kind and nature assessed or levied upon or in connection with the Joint Property, the operation thereof, or the production therefrom, and which taxes have been paid by the Operator for the benefit of the Parties.

10. Insurance

Net premiums paid for insurance required to be carried on the Joint Property for the protection of the Parties. In the event Joint Operations are conducted in a state in which Operator may act as self-insurer for Workmen's Compensation and/or Employers Liability under the respective state's laws, Operator may, at its election, include the risk under its self-insurance program and in that event, Operator shall include a charge therefor on the following basis:

11. Other Expenditures

Any other expenditure not covered or dealt with in the foregoing provisions of this Section II, or in Section III, and which is incurred by the Operator for the necessary and proper conduct of the Joint Operations.

III. INDIRECT CHARGES

Operator may charge the Joint Account for indirect costs either by use of an allocation of district expense items plus the rate for administrative overhead, and plus the warehousing charges, all as provided for in Paragraph 1 of this Section III or by combining all three of said items under the rates provided for in Paragraph 2 or 3 of this Section III, as indicated next below:

OPERATOR SHALL CHARGE INDIRECT COSTS TO THE JOINT ACCOUNT UNDER THE TERMS OF:

- ☐ Paragraph 1. (District Expense, Administrative Overhead and Warehousing)
- ☒ Paragraph 2. (Combined Rates - Well Basis)
- ☐ Paragraph 3. (Combined Rates - Percentage Basis)

The cost and expense of services from outside sources in connection with matters of taxation, traffic, accounting or matters before or involving governmental agencies shall be considered as included in the overhead rates provided for in the above selected Paragraph of this Section III unless such cost and expense are agreed to by Operator and Non-Operators as a direct charge to the Joint Account.

THE OVERHEAD RATES PROVIDED FOR IN ANY OF THE PARAGRAPHS SELECTED ABOVE

- A. ☐ shall ☒ shall not include salaries and personal expenses of first-level supervisors in the field.
- B. ☐ shall ☒ shall not include salaries, wages and personal expenses of technical employees temporarily assigned to and directly employed on the Joint Property.
- C. ☒ shall ☐ shall not include salaries, wages and personal expenses of technical employees either temporarily or permanently assigned to and directly employed in the operation of the Joint Property.

but not on

1. District Expense, Administrative Overhead and Warehousing

A. District Expense

Operator shall charge the Joint Account with a pro rata portion of the salaries, wages and expenses of Operator's production superintendent and other employees serving the Joint Property and other properties of the Operator in the same operating area, whose time is not allocated directly to the properties, and a pro rata portion of the cost of maintaining and operating a production office known as Operator's office located at or near (or a comparable office if location changed); and necessary sub-offices (if any), maintained for the convenience of the above-described office, and all necessary camps, including housing facilities for employees if required, used in connection with the operations of the Joint Property and other properties in the same operating area. The expense of, less any revenue from, such facilities may, at the option of Operator, include depreciation of investment or a fair monthly rental in lieu of depreciation. Such charges shall be apportioned to all properties served on some equitable basis consistent with Operator's accounting practice.

B. Administrative Overhead

Operator shall charge administrative overhead to the Joint Account at the following rates, which charge shall be in lieu of the cost and expense of all offices of the Operator not covered by Paragraph 1A of this Section III, including salaries, wages and expenses of personnel assigned to such offices. Such charge shall be in addition to the salaries, wages and expenses of employees of Operator authorized to be charged direct as provided in Paragraphs 2 and 8 of Section II. Such charge shall be made on the basis indicated below, either (1) well basis or (2) percentage basis, at the rates shown thereunder.

(1) ☐ Well Basis

RATE PER WELL PER MONTH

Well Depth	DRILLING WELL RATE (Use Total Depth)	PRODUCING WELL RATE (Use Current Producing Depth)		
	Each Well	First Five	Next Five	All Wells Over Ten

(2) ☐ Percentage Basis

PERCENTAGE BASIS

Development:

Percent (%) of the cost of development of the Joint Property exclusive of costs provided under Paragraph 8 of Section II and all salvage credits.

Operating:

Percent (%) of the cost of operating the Joint Property exclusive of costs provided under Paragraphs 1 and 8 of Section II, all salvage credits, the value of injected substances purchased for secondary recovery and all taxes and assessments which are levied, assessed and paid upon the mineral interest in and to the Joint Property.

C. Operator's Warehouse Operating and Maintenance Expense

- ☐ Included in district expense
☒ No charge either direct or indirect
☐ Percentage basis (describe fully) _____

2. Combined Rates - Well Basis

Operator shall charge the Joint Account for the services covered by Paragraph 1 of this Section III on the basis indicated below:

Well Depth	RATE PER WELL PER MONTH		All Wells
	DRILLING WELL RATE (Use Total Depth)	PRODUCING WELL RATE (Use Current Producing Depth)	
	Each Well	Each Well	
All	1180		150

3. Combined Rates - Percentage Basis

Operator shall charge the Joint Account for the services covered by Paragraph 1 of this Section III on the basis indicated below:

PERCENTAGE BASIS

A. Development:

_____ Percent (%) of the cost of development of the Joint Property exclusive of costs provided under Paragraph 8 of Section II and all salvage credits.

B. Operating:

_____ Percent (%) of the cost of operating the Joint Property exclusive of costs provided under Paragraphs 1 and 8 of Section II, all salvage credits, the value of injected substances purchased for secondary recovery and all taxes and assessments which are levied, assessed and paid upon the mineral interest in and to the Joint Property.

4. Application of Administrative Overhead or Combined Rates - Well Basis

The following limitations, instructions and charges shall apply in the application of the rates as provided under either Paragraph 1B (1) or Paragraph 2 of this Section III.

A. Charges for drilling wells shall begin on the date each well is spudded and terminate on the date the drilling or completion rig is released, whichever is later, except that no charge shall be made during the suspension of drilling operations for fifteen (15) or more consecutive days.

B. The status of wells shall be as follows:

- (1) Producing gas wells, injection wells for recovery operations, water supply wells utilized for waterflood-ing operations and salt water disposal wells shall be considered the same as producing oil wells.
- (2) Wells permanently shut down but on which plugging operations are deferred shall be dropped from the well schedule at the time the shutdown is effected. Any well being plugged or produced during any portion of the month shall be considered as a producing well for the entire month.
- (3) Wells being plugged back, drilled deeper, converted to a source or input well, or which are undergoing any type of workover that requires the use of a drilling rig or workover rig capable of drilling shall be considered the same as drilling wells.
- (4) Temporarily shut-down wells, which are not produced or worked upon for a period of a full calendar month, shall not be included in the well schedule. ~~provided however wells shut in by governmental regulatory body shall be included in the well schedule only in the event the allowable production is transferred to some other well or wells on the Joint Property. In the event of a unit allowable, shut in wells shall be counted in determining the charge hereunder for such month if said wells contribute allow-able production that is actually produced during such month from one or more unit wells as a result of allowable transfer, inclusion in the unit allowable or other circumstance, but the total shut in well count shall be limited to the minimum number of shut in wells necessary to provide the contributed allowable actually produced during the month.~~
- (5) Gas wells shall be included in the well schedule if directly connected to a permanent sales outlet even though temporarily shut in due to overproduction or failure of purchaser to take the allowed production.
- (6) Wells completed in multiple horizons, shall be considered as a producing well for each separately pro- ducing horizon, providing each completion is considered a separate well by governmental or other state- wide regulatory authority.

C. The well rates for producing wells shall be applied to the individual leases; provided that, whenever leases covered by this agreement are operated as a unitized project, the well rates shall be applied to the total number of producing wells, irrespective of individual leases.

D. The well rates shall be adjusted as of the first day of April each year following the effective date of the agreement to which this Accounting Procedure is attached. The adjustment shall be computed by multiplying the rate currently in use by the percentage increase or decrease in the average weekly earnings of Crude Petroleum and Gas Production Workers for the last calendar year compared to the preceding calendar year as shown by "The Index of Average Weekly Earnings of Crude Petroleum and Gas Production Workers" as published by the United States Department of Labor, Bureau of Labor Statistics, or the equivalent Canadian Index as published by the Dominion Bureau of Statistics, as applicable. The adjusted rates shall be the rates currently in use, plus or minus the computed adjustment.

5. Application of Administrative Overhead or Combined Rates - Percentage Basis

For the purpose of determining charges on a Percentage Basis under Paragraph 1B (2) or Paragraph 3 of this Section III, Development shall include all costs in connection with drilling, re-drilling, deepening or any remedial operations on any or all wells involving the use of drilling crew and equipment; also, preliminary expenditures necessary in preparation for drilling and expenditures incurred in abandoning when well is not completed as a producer; and original cost of construction or installation of fixed assets, the expansion of fixed assets and any other project clearly discernible as a fixed asset, except Major Construction as defined in Paragraph 6 of this Section III. All other costs shall be considered as Operating.

6. Major Construction Overhead

For the construction of compressor plants, water stations, secondary recovery systems, drilling and production platforms, salt water disposal facilities, and other such projects, as distinguished from the more usual drilling

and producing operations, Operator in addition to the Administrative Overhead or Combined Rates provided for in Paragraph 1, 2 or 3 of this Section III shall either negotiate a rate prior to beginning of construction or shall charge the Joint Account with an additional overhead charge as follows:

- A. Total cost less than \$25,000, no charge.
- B. Total cost more than \$25,000, but less than \$100,000, 3 % of total cost.
- C. Total cost of \$100,000 or more, 3 % of the first \$100,000 plus 2 % of all over \$100,000 of total cost.

Total cost shall mean the total gross cost of any one project. For the purpose of this paragraph the component parts of a single project shall not be treated separately and the cost of drilling wells shall be excluded.

7. Amendment of Rates

The specific rates provided for in this Section III may be amended from time to time by mutual agreement between the Parties hereto if, in practice, the rates are found to be insufficient or excessive.

IV. BASIS OF CHARGES TO JOINT ACCOUNT

Subject to the further provisions of this Section IV, Operator will procure all Material and services for the Joint Property. At the Operator's option, Non-Operators may supply Material or services for the Joint Property.

1. Purchases

Material purchased and service procured shall be charged at the price paid by Operator after deduction of all discounts actually received.

2. Material furnished from Operator's Warehouse or Other Properties

A. New Material (Condition "A")

- (1) Tubular goods, except line pipe, shall be priced on a maximum carload and/or barge load weight basis regardless of quantity transferred and equalized to the lowest prevailing price f.o.b. railway receiving point or recognized barge terminal nearest the Joint Property where such Material is normally available effective at date of transfer.
- (2) Line pipe shall be priced at the current replacement cost effective at date of transfer from a reliable supply store nearest the Joint Property where such Material is normally available if the movement is less than 30,000 pounds. If the movement is 30,000 pounds or more, it shall be priced on the same basis as casing and tubing under Subparagraph (1) of this paragraph.
- (3) When the Operator has equalized actual hauling costs as provided for in Paragraph 5 of Section II, Operator is permitted to include ten cents (10¢) per hundred-weight on all tubular goods furnished from his stocks in lieu of loading and unloading costs sustained.
- (4) Other Material shall be priced at the current replacement cost of the same kind of Material, effective at date of movement and f.o.b. the supply store or railway receiving point nearest the Joint Property where Material of the same kind is normally available.
- (5) The Joint Account shall not be credited with cash discounts applicable to prices provided for in this Paragraph 2 of Section IV.

B. Used Material (Condition "B" and "C")

- (1) Material in sound and serviceable condition and suitable for reuse without reconditioning, shall be classified as Condition "B" and priced at seventy-five per cent (75%) of the current price of new Material.
- (2) Material which is not suitable for its original function until after reconditioning shall be furnished to the Joint Account under one of the two methods defined below:
 - (a) Classified as Condition "B" and priced at seventy-five per cent (75%) of the current price of new Material. The cost of reconditioning shall be absorbed by the Operator of the transferring property.
 - (b) Classified as Condition "C" and priced at fifty per cent (50%) of current price of new Material. The cost of reconditioning also shall be charged to the receiving property, provided Condition "C" value, plus cost of reconditioning, does not exceed Condition "B" value.
- (3) Obsolete Material or Material which cannot be classified as Condition "B" or Condition "C" shall be priced at a value commensurate with its use. Material no longer suitable for its original purpose but usable for some other purpose, shall be priced on a basis comparable with that of items normally used for such other purpose.
- (4) Material involving erection costs shall be charged at applicable percentage of the current knocked-down price of new Material.

3. Premium Prices

Whenever Material is not readily obtainable at prices specified in Paragraphs 1 and 2 of this Section IV because of national emergencies, strikes or other unusual causes over which the Operator has no control, the Operator may charge the Joint Account for the required Material at the Operator's actual cost incurred in procuring such Material, in making it suitable for use, and in moving it to the Joint Property, provided, that notice in writing is furnished to Non-Operators of the proposed charge prior to billing Non-Operators for such Material. Each Non-Operator shall have the right, by so electing and notifying Operator within 10 days after receiving notice from Operator, to furnish in kind all or part of his share of such Material suitable for use and acceptable to Operator.

4. Warranty of Material Furnished by Operator

Operator does not warrant the Material furnished. In case of defective Material, credit shall not be passed to the Joint Account until adjustment has been received by Operator from the manufacturers or their agents.

5. Equipment and Facilities Furnished by Operator

A. Operator shall charge the Joint Account for use of equipment and facilities at rates commensurate with cost of ownership and operation. Such rates shall include cost of maintenance, repairs, other operating expense, insurance, taxes, depreciation, and interest on investment not to exceed six per cent (6%) per annum, provided such rates shall not exceed those currently prevailing in the immediate area within which the Joint Property is located. In lieu of rates based on costs of ownership and operation of equipment, other than automotive, Operator may elect to use commercial rates prevailing in the area of the Joint Property less 20%; for automotive equipment, rates as published by the Petroleum Motor Transport Association may be used. Rates for laboratory services shall not exceed those currently prevailing if performed by

outside service laboratories. Rates for trucks, tractors and well service units may include wages and expenses of operator.

- B. Whenever requested, Operator shall inform Non-Operators in advance of the rates it proposes to charge.
- C. Rates shall be revised and adjusted from time to time when found to be either excessive or insufficient.

V. DISPOSAL OF MATERIAL

The Operator may purchase, but shall be under no obligation to purchase, interest of Non-Operators in surplus Condition "A" or "B" Material. The disposition of surplus Controllable Material, not purchased by Operator, shall be agreed to by Operator and Non-Operators, provided Operator shall dispose of normal accumulations of junk and scrap Material either by transfer or sale from Joint Property.

1. Material Purchased by the Operator or Non-Operators.

Material purchased by either the Operator or Non-Operators shall be credited by the Operator to the Joint Account for the month in which the Material is removed by the purchaser.

2. Division in Kind

Division of Material in kind, if made between Operator and Non-Operators, shall be in proportion to the respective interests in such Material. The Parties will thereupon be charged individually with the value of the Material received or receivable. Proper credits shall be made by the Operator to the Joint Account.

3. Sales to Outsiders

Sales to outsiders of Material from the Joint Property shall be credited by Operator to the Joint Account at the net amount collected by Operator from vendee. Any claim by vendee related to such sale shall be charged back to the Joint Account if and when paid by Operator.

VI. BASIS OF PRICING MATERIAL TRANSFERRED FROM JOINT ACCOUNT

Material purchased by either Operator or Non-Operators or divided in kind, unless agreed to by Operator and Non-Operators shall be priced on the following basis:

1. New Price Defined

New price as used in this Section VI shall be the price specified for new Material in Section IV.

2. New Material

New Material (Condition "A"), being new Material procured for the Joint Property but never used, at one hundred per cent (100%) of current new price (plus sales tax if any).

3. Good Used Material

Good used Material (Condition "B"), being used Material in sound and serviceable condition, suitable for reuse without reconditioning:

- A. At seventy-five per cent (75%) of current new price if Material was charged to Joint Account as new, or
- B. At sixty-five per cent (65%) of current new price if Material was originally charged to the Joint Account as secondhand at seventy-five per cent (75%) of new price.

4. Other Used Material

Used Material (Condition "C"), at fifty per cent (50%) of current new price, being used Material which:

- A. Is not in sound and serviceable condition but suitable for reuse after reconditioning, or
- B. Is serviceable for original function but not suitable for reconditioning.

5. Bad-Order Material

Material (Condition "D"), no longer suitable for its original purpose without excessive repair cost but usable for some other purpose at a price comparable with that of items normally used for such other purpose.

6. Junk Material

Junk Material (Condition "E"), being obsolete and scrap Material, at prevailing prices.

7. Temporarily Used Material

When the use of Material is temporary and its service to the Joint Property does not justify the reduction in price as provided for in Paragraph 3B of this Section VI, such Material shall be priced on a basis that will leave a net charge to the Joint Account consistent with the value of the service rendered.

VII. INVENTORIES

The Operator shall maintain detailed records of Controllable Material.

1. Periodic Inventories, Notice and Representation

At reasonable intervals, inventories shall be taken by Operator of the Joint Account Controllable Material. Written notice of intention to take inventory shall be given by Operator at least thirty (30) days before any inventory is to begin so that Non-Operators may be represented when any inventory is taken. Failure of Non-Operators to be represented at an inventory shall bind Non-Operators to accept the inventory taken by Operator.

2. Reconciliation and Adjustment of Inventories

Reconciliation of inventory with the Joint Account shall be made, and a list of overages and shortages shall be furnished to the Non-Operators. Inventory adjustments shall be made by Operator with the Joint Account for overages and shortages, but Operator shall be held accountable to Non-Operators only for shortages due to lack of reasonable diligence.

3. Special Inventories

Special Inventories may be taken whenever there is any sale or change of interest in the Joint Property. It shall be the duty of the party selling to notify all other Parties as quickly as possible after the transfer of interest takes place. In such cases, both the seller and the purchaser shall be governed by such inventory.

4. Expense of Conducting Periodic Inventories

The expense of conducting periodic inventories shall not be charged to the Joint Account unless agreed to by Operator and Non-Operators.

EXHIBIT "F" DICKINSON HEATH SAND UNIT

Unless exempted by Federal law, regulation or order, the following terms and conditions shall apply during the performance of this contract:

I. EQUAL OPPORTUNITY CLAUSE

A. During the performance of this contract, the CONTRACTOR agrees as follows:

- (1) The CONTRACTOR will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The CONTRACTOR will take affirmative action to ensure that applicants are employed and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer, recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The CONTRACTOR agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.
- (2) The CONTRACTOR will, in all solicitations or advertisements for employees placed by or on behalf of the CONTRACTOR, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.
- (3) The CONTRACTOR will send to each labor union or representative of workers with which has a collective bargaining agreement or other contract or understanding, a notice to be provided by the agency contracting officer, advising the labor union or workers' representative of the CONTRACTOR'S commitments under Section 202 of Executive Order 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- (4) The CONTRACTOR will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- (5) The CONTRACTOR will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- (6) In the event of the CONTRACTOR'S noncompliance with the nondiscrimination clauses of this Agreement or with any of such rules, regulations, or orders, this Agreement may be cancelled, terminated or suspended in whole or in part and the CONTRACTOR may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
- (7) The CONTRACTOR will include the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The CONTRACTOR will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions including sanctions for noncompliance: Provided, however, that in the event the CONTRACTOR becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the CONTRACTOR may request the United States to enter into such litigation to protect the interests of the United States.

B. If required to do so by Federal law, regulation, or order, CONTRACTOR agrees that he shall:

- (1) File with the Office of Federal Contract Compliance or agency designated by it, a complete and accurate report on Standard Form 100 (EEO-1) within 30 days after the signing of this Agreement (unless such a report has been filed in the last 12 months), and continue to file such reports annually, on or before March 31st;
- (2) Develop and maintain a written affirmative action compliance program for each of its establishments in accordance with the regulations of the Secretary of Labor promulgated under Executive Order 11246, as amended.

II. CERTIFICATE OF NONSEGREGATED FACILITIES

CONTRACTOR certifies that he does not and will not maintain or provide for his employees any segregated facilities at any of his establishments, and that he does not and will not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. CONTRACTOR understands that the phrase "segregated facilities" includes facilities which are in fact segregated on a basis of race, color, creed, or national origin, because of habit, local custom, or otherwise. CONTRACTOR understands and agrees that maintaining or providing segregated facilities for his employees or permitting his employees to perform their services at any locations, under his control, where segregated facilities are maintained is a violation of the Equal Opportunity Clause required by Executive Order No. 11246 of September 24, 1965, and the regulations of the Secretary of Labor set out in 41 CFR Chapter 60. CONTRACTOR further agrees that (except where it has obtained identical certifications from proposed subcontractors for specific time periods) it will obtain identical or substantially identical certifications from proposed subcontractors prior to the award of subcontracts exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity Clause.

EXHIBIT "G"
DICKINSON HEATH SAND UNIT
INTANGIBLE INVESTMENT ADJUSTMENT

The Intangible Investment Adjustment Schedule shows how the adjustment will effect all Working Interest Owners based upon current ownership. Tracts 2, 13, 26, 39, and 62 may have changes in ownership in the future which will require revisions in the Schedule.

<u>Working Interest Owners</u>	<u>Phase II Participation</u>	<u>Debit Column 2 x \$80,625</u>	<u>Intangible Investment Credit Schedule</u>	<u>Net Column 4 Minus Column 3</u>
Boswell Corporation	.0093094	\$ 750.57	\$ 937.50	\$ 186.93*
Cardinal Petroleum Company	.1277892	10,303.00	12,611.18	2,308.18*
Central Oil Company	.0091884	740.82	1,098.63	357.81*
Cities Service Oil Company	.0069643	561.50	937.50	376.00
Continental Oil Company	.3369819	27,169.17	27,598.24	429.07*
Felmont Oil Corporation	.0151383	1,220.53	351.57	(868.96)*
A. G. Golden	.0003167	25.53	29.30	3.77
G. G. Green	.0006125	49.38	73.24	23.86*
Helmerich and Payne, Inc.	.0021640	174.47	439.45	264.98
Louis W. Hill, Jr.	.0615680	4,963.92	3,843.66	(1,120.26)*
Huston Huffman	.0004328	34.89	87.89	53.00
Hunt Petroleum Corporation	.0050676	408.58	468.75	60.17
H. L. Hunt	.0010526	84.86	93.75	8.89
Clyde W. Jones	.0011741	94.66	61.68	(32.98)
King Resources	.0041408	333.85		(333.85)
Gene C. Litch	.0006504	52.44		(52.44)
Lone Star Producing Company	.0060495	487.74	1,875.00	1,387.26
J. Hiram Moore	.0045960	370.55	533.58	163.03*
North American Royalties, Inc.	.1031384	8,315.54	7,919.04	(396.50)*
Joe V. Ridl	.0038926	313.84		(313.84)
Shell Oil Company	.2322692	18,726.70	15,102.54	(3,624.16)*
Hudson Smart	.0014987	120.83		(120.83)
C. C. Spencer	.0013008	104.88		(104.88)
David J. Sorenson	.0019321	155.78		(155.78)
Superior Oil Company	.0453089	3,653.03	4,687.50	1,034.47*
Union Oil Company	.0153969	1,241.38	1,875.00	633.62
Louis Zahradnik	.0020659	166.56		(166.56)
Totals	1.0000000	\$80,625.00	\$80,625.00	\$0,000.00

Dated June 1, 1972

*Interest will change at payout.

EXHIBIT "D"

SCHEDULE SHOWING THE PERCENTAGE AND KIND OF OWNERSHIP OF OIL AND GAS INTERESTS IN ALL LANDS
IN THE Dickinson Heath Sand UNIT AREA, Stark COUNTY, N. Dakota

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
1.	Township 139 North, Range 97 West Section 4: Lots 1, 2, S/2NE/4	158.23	9-15-74	Rudolf Pazourek and Marie Pazourek 12.50%		Shell Oil Company 100%	Shell Oil Company 100%
2.	Township 139 North, Range 97 West Section 3: Lots 1, 2, 3, 4, S/2N/2	316.16	HBP	Rudolf Pazourek and Marie Pazourek 12.50%	(2) David C. Jones 2.5%	Shell Oil Company 50% (1) The Boswell Corporation 50%	Shell Oil Company 50% The Boswell Corporation 50%
3.	Township 139 North, Range 97 West Section 2: Lots 3, 4, S/2NW/4, SW/4	317.65	HBP	Charles J. Steffan 12.50%	Robert L. Grady General Crude Oil Company .50% 6.25%	Shell Oil Company 100%	Shell Oil Company 100%
4.	Township 139 North, Range 97 West Section 2: SE/4	160.00	9-29-74	Monica Jaeger 12.50%	R. E. Moore 2.0%	Union Oil Company of California 100%	Union Oil Company of California 100%
5.	Township 139 North, Range 97 West Section 2: Lots 1, 2, S/2NE/4	6.55625 157.35000	10- 8-74	Shelia J. Boulger 12.50%	R. E. Moore 2.0%	Union Oil Company of California 100%	Union Oil Company of California 75.0000% C. C. Spencer 16.6667% Gene C. Litch 8.3333%
	Township 139 North, Range 97 West Section 2: Lots 1, 2, S/2NE/4	6.55625 157.35000	10- 8-74	Richard V. and Luella M. Boulger 12.50%	R. E. Moore 2.0%	Union Oil Company of California 100%	

(1) After payout of cost of well, Cleary Petroleum Corporation has 16.667% Working Interest out of the Boswell Corporation.

(2) Payable out of Boswell and Cleary Interests.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
5.	Township 139 North, Range 97 West Section 2: Lots 1, 2, S/2NE/4	6.55625 157.35000	10- 8-74	Delmar L. and Phyllia Boulger 12.50%	R. E. Moore 2.0%	Union Oil Company of California 100%	
	Township 139 North, Range 97 West Section 2: Lots 1, 2, S/2NE/4	6.55625 157.35000	10- 8-74	Jack A. and Lorraine Boulger 12.50%	R. E. Moore 2.0%	Union Oil Company of California 100%	
	Township 139 North, Range 97 West Section 2: Lots 1, 2, S/2NE/4	6.55625 157.35000	10- 8-74	Chester E. and Betty Boulger Carpenter 12.50%	R. E. Moore 2.0%	Union Oil Company of California 100%	
	Township 139 North, Range 97 West Section 2: Lots 1, 2, S/2NE/4	6.55625 157.35000	10- 8-74	Joan M. Patterson 12.50%	R. E. Moore 2.0%	Union Oil Company of California 100%	
	Township 139 North, Range 97 West Section 2: Lots 1, 2, S/2NE/4	13.11250 157.35000	3-29-73	Mildred D. Burnett and Glenn R. Burnett 12.50%		C. C. Spencer 100%	
	Township 139 North, Range 97 West Section 2: Lots 1, 2, S/2NE/4	13.11250 157.35000		Gene C. Litch 12.50%		Gene C. Litch 100%	
	Township 139 North, Range 97 West Section 2: Lots 1, 2, S/2NE/4	13.11250 157.35000	3-29-73	Calvin M. Litch 12.50%		C. C. Spencer 100%	
	Township 139 North, Range 97 West Section 2: Lots 1, 2, S/2NE/4	78.67500 157.35000	9-29-74	Monica Jaeger 12.50%	R. E. Moore 2.0%	Union Oil Company of California 100%	

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
6.	Township 139 North, Range 97 West Section 1: Lots 1, 2, 3, 4, S/2N/2	237.67 317.34	8-28-73	Joseph F. Kubischta and Victoria Kubischta 12.50%		David J. Sorenson 100%	David J. Sorenson 100%
	Township 139 North, Range 97 West Section 1: Lots 1, 2, 3, 4, S/2N/2	26.14 317.34	7- 1-72	I. J. Wilhite 18.75%		David J. Sorenson 100%	
	Township 139 North, Range 97 West Section 1: Lots 1, 2, 3, 4, S/2N/2	14.94 317.34	6-11-72	Sam Sloven 18.75%		David J. Sorenson 100%	
	Township 139 North, Range 97 West Section 1: Lots 1, 2, 3, 4, S/2N/2	14.94 317.34	6-11-72	Western Steel & Plumbing Supply Co. 18.75%		David J. Sorenson 100%	
	Township 139 North, Range 97 West Section 1: Lots 1, 2, 3, 4, S/2N/2	23.65 317.34	7- 1-72	Myrtle Ray Canon 18.75%		David J. Sorenson 100%	
7.	COMMUNITIZED TRACT:						
	Township 140 North, Range 97 West Section 33: SE/4	120.00 160.00	HBP	Joseph W. Vozabal 4.16667% A. G. Golden 2.08333% Clyde W. Jones 1.04167% R. E. Moore 2.08333% C. C. Spencer 1.82292% Fred H. Wurden .26042% Linda K. Jones 1.04166% total 12.50000%		Shell Oil Company 100%	Shell Oil Company 100%
	Township 140 North, Range 97 West Section 33: SE/4	40.00 160.00	HBP	General Crude Oil Company 25.00000%	Robert L. Grady 1/2 of 1% of 12 1/2%	Shell Oil Company 100%	

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
7.	Township 140 North, Range 97 West Section 33: SW/4	160.00	HBP	Norman J. Zander and Marie E. Zander 6.25% Andrew J. Anderson and Louise Anderson 6.25% total 12.50%		Shell Oil Company 100%	
8.	<u>COMMUNITIZED TRACT:</u> Township 140 North, Range 97 West Section 33: NW/4	160.00	10-22-74	Norman J. Zander and Marie E. Zander 6.25% Andrew J. Anderson and Louise Anderson 6.25% total 12.50%		Shell Oil Company 100%	Continental Oil Company 12.5% Shell Oil Company 87.5%
	Township 140 North, Range 97 West Section 33: NE/4	80.00 160.00	HBP	Norman J. Zander and Marie E. Zander 12.50%	(3) Robert L. Grady .50%	Continental Oil Company 25% Shell Oil Company 75%	
	Township 140 North, Range 97 West Section 33: NE/4	80.00 160.00	HBP	Andrew J. Anderson and Louise Anderson 6.25000% R. E. Moore 3.12500% C. C. Spencer 2.73438% Fred H. Wurden .39062% total 12.50000%	(3) Robert L. Grady .50%	Continental Oil Company 25% Shell Oil Company 75%	

(3) This overriding royalty out of Shell Oil Company working interest.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
9.	<u>Township 140 North, Range 97 West</u> <u>Section 34: W/2</u>	160.00 320.00	HBP	Andrew J. Anderson and Louise Anderson R. E. Moore C. C. Spencer Fred H. Wurden total	(3) Robert L. Grady .50% 6.25000% 3.12500% 2.73438% .39062% 12.50000%	Continental Oil Company 50% Shell Oil Company 50%	Continental Oil Company 50% Shell Oil Company 50%
	<u>Township 140 North, Range 97 West</u> <u>Section 34: W/2</u>	160.00 320.00	HBP	Norman J. Zander and Marie E. Zander	(3) Robert L. Grady .50% 12.50%	Continental Oil Company 50% Shell Oil Company 50%	
10.	<u>Township 140 North, Range 97 West</u> <u>Section 34: E/2</u>	320.00	HBP	Louis L. Zahradnik and Mildred D. Zahradnik Louis L. Zahradnik Mildred Zahradnik total	(3) Robert L. Grady .50% 7.8125% 3.1250% 1.5625% 12.5000%	Continental Oil Company 50% Shell Oil Company 50%	Continental Oil Company 50% Shell Oil Company 50%
11.	<u>Township 140 North, Range 97 West</u> <u>Section 35: S/2</u>	320.00	HBP	Charles J. Steffan	Robert L. Grady General Crude Oil Company 12.50% 6.25%	Shell Oil Company 100%	Shell Oil Company 100%

(3) This overriding royalty out of Shell Oil Company working interest.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
12.	<u>COMMUNITIZED TRACT:</u>						
	<u>Township 140 North, Range 97 West</u> <u>Section 35: NE/4</u>	<u>80.00</u> <u>160.00</u>	HBP	Louis Karsky and Agnes Karsky 12.50%	(3) Robert L. Grady .50%	Continental Oil Company 50% Shell Oil Company 50%	Continental Oil Company 50% Shell Oil Company 50%
	<u>Township 140 North, Range 97 West</u> <u>Section 35: NE/4</u>	<u>40.00</u> <u>160.00</u>	HBP	First National Bank of Dickinson, N. Dakota 12.50%	(3) Robert L. Grady .50%	Continental Oil Company 50% Shell Oil Company 50%	
	<u>Township 140 North, Range 97 West</u> <u>Section 35: NE/4</u>	<u>40.00</u> <u>160.00</u>	HBP	Donald F. Martin 6.25% Dorothy Ponton 6.25% total 12.50%	(3) Robert L. Grady .50%	Continental Oil Company 50% Shell Oil Company 50%	
	<u>Township 140 North, Range 97 West</u> <u>Section 35: NW/4</u>	160.00	HBP	Louis L. Zahradnik and Mildred D. Zahradnik 12.50%	(3) Robert L. Grady .50%	Continental Oil Company 50% Shell Oil Company 50%	
13.	<u>COMMUNITIZED TRACT:</u>						
	<u>Township 140 North, Range 97 West</u> <u>Section 36: S/2</u>	<u>160.00</u> <u>320.00</u>	HBP	J. J. Kadrmas, Jr. and Mildred Kadrmas 2.50% Linda Kadrmas 2.50% Arnold E. Kadrmas 2.50% Joan Schmidt 2.50% J. J. Kadrmas, Jr., custodian of Douglas Kadrmas, a minor 2.50% total 12.50%	Robert L. Grady .50%	Continental Oil Company 60% North American Royalties, Inc. 20% Louis W. Hill, Jr. 20%	(5) Continental Oil Company 47.57812% North American Royalties, Inc. 15.85938% Shell Oil Company 17.57812% Louis W. Hill, Jr. 15.85938% Felmont Oil Corporation 3.12500%

(3) This overriding royalty out of Shell Oil Company working interest.

(5) After 200% non-consent payout - prior to payout, Continental Oil Company 60%; North American Royalties, Inc. 20% and Louis W. Hill, Jr. 20%.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
	<u>Township 140 North, Range 97 West</u> <u>Section 36: SW/4</u>	<u>80.00</u> <u>160.00</u>	HBP	State of North Dakota	12.50% ; Robert L. Grady .50%	Continental Oil Company 32.8125% (4) Shell Oil Company 32.8125% North American Royalties, Inc. 10.9375% Louis W. Hill, Jr. 10.9375% (4) Felmont Oil Corporation 12.5000%	
	<u>Township 140 North, Range 97 West</u> <u>Section 36: SE/4</u>	<u>80.00</u> <u>160.00</u>	HBP	State of North Dakota	12.50% ; Robert L. Grady .50%	Continental Oil Company 37.50% (6) Shell Oil Company 37.50% North American Royalties, Inc. 12.50% Louis W. Hill, Jr. 12.50%	
14.	<u>COMMUNITIZED TRACT:</u>						
	<u>Township 140 North, Range 97 West</u> <u>Section 36: N/2</u>	<u>160.00</u> <u>320.00</u>	HBP	State of North Dakota	12.50% ; Robert L. Grady .50%	Continental Oil Company 30.46875% Shell Oil Company 30.46875% North American Royalties, Inc. 10.15625% Louis W. Hill, Jr. 10.15625% Felmont Oil Corporation 18.75000%	Continental Oil Company 30.46875% Shell Oil Company 30.46875% North American Royalties, Inc. 10.15625% Louis W. Hill, Jr. 10.15625% Felmont Oil Corporation 18.75000%

(4) Shell Oil Company and Felmont Oil Corporation interest is a carried working interest until payout.

(3) This overriding royalty out of Shell Oil Company working interest.

(6) Shell Oil Company interest is a carried working interest until payout.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
	<u>Township 140 North, Range 97 West</u> <u>Section 36: NE/4</u>	<u>80.00</u> <u>160.00</u>	HBP	Rose Frenzel 12.50%	(1) Robert L. Grady .50%	Continental Oil Company 30.46875% Shell Oil Company 30.46875% North American Royalties, Inc. 10.15625% Louis W. Hill, Jr. 10.15625% Felmont Oil Corporation 18.75000%	
	<u>Township 140 North, Range 97 West</u> <u>Section 36: NW/4</u>	<u>80.00</u> <u>160.00</u>	HBP	Louis Karsky and Agnes Karsky 12.50%	(1) Robert L. Grady .50%	Continental Oil Company 30.46875% Shell Oil Company 30.46875% North American Royalties, Inc. 10.15625% Louis W. Hill, Jr. 10.15625% Felmont Oil Corporation 18.75000%	
15.	<u>Township 140 North, Range 96 West</u> <u>Section 31: SE/4, E/2SW/4, Lots 3, 4</u>	<u>308.49</u>	HBP	Joe J. Kadrmas, Jr. and Mildred Kadrmas 6.250% Felmont Oil Corporation 3.125% North American Royalties, Inc. 3.125% total 12.5000%	(1) The Superior Oil Company 6.25%	The Superior Oil Company 50% Continental Oil Company 50%	The Superior Oil Company 50% Continental Oil Company 50%

(1) This overriding royalty out of Continental Oil Company working interest.

(2) This overriding royalty out of Shell Oil Company working interest.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
16.	Township 140 North, Range 96 West Section 31: Lots 1, 2, E/2NW/4	31.86682 143.65000	HBP	Rose Frenzel 12.50%	T. D. Rimmer 1.250% Placid Oil Company 3.125% David A. Provinse .750% (s)William S. Goan .250% Henry R. C. Elser .250%	Cardinal Petroleum Company 100%	Cardinal Petroleum Company 98.35527% Clyde W. Jones .82236% Linda K. Jones .82237%
	Township 140 North, Range 96 West Section 31: Lots 1, 2, E/2NW/4	5.90666 143.65000	HBP	First Trust Company of Saint Paul in Trust for Elsie Fors Hill 18.75%	T. D. Rimmer 1.250% Placid Oil Company 3.125% David A. Provinse .750% (s)William S. Goan .250% Henry R. C. Elser .250%	Cardinal Petroleum Company 100%	
	Township 140 North, Range 96 West Section 31: Lots 1, 2, E/2NW/4	1.96889 143.65000	HBP	First Trust Company of Saint Paul in Trust for Johanna Maud Hill 18.75%	T. D. Rimmer 1.250% Placid Oil Company 3.125% David A. Provinse .750% (s)William S. Goan .250% Henry R. C. Elser .250%	Cardinal Petroleum Company 100%	
	Township 140 North, Range 96 West Section 31: Lots 1, 2, E/2NW/4	1.96889 143.65000	HBP	First Trust Company of Saint Paul in Trust for Louis Fors Hill 18.75%	T. D. Rimmer 1.250% Placid Oil Company 3.125% David A. Provinse .750% (s)William S. Goan .250% Henry R. C. Elser .250%	Cardinal Petroleum Company 100%	

(s)Payable to Estate of William S. Goan, c/o Trust Department, Security Trust and Savings Bank, Billings, Montana.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
	Township 140 North, Range 96 West Section 31: Lots 1, 2, E/2NW/4	1.96889 143.65000	HBP	First Trust Company of Saint Paul in Trust for Mari Hill 18.75%	T. D. Rimmer Placid Oil Company 3.125% David A. Provinse .750% (8)William S. Goan .250% Henry R. C. Elser .250%	Cardinal Petroleum Company 100%	
	Township 140 North, Range 96 West Section 31: Lots 1, 2, E/2NW/4	3.22729 143.65000	HBP	John M. Grinde 12.50%	T. D. Rimmer Placid Oil Company 3.125% David A. Provinse .750% (8)William S. Goan .250% Henry R. C. Elser .250%	Cardinal Petroleum Company 100%	
	Township 140 North, Range 96 West Section 31: Lots 1, 2, E/2NW/4	2.36266 143.65000	HBP	Clyde W. Jones 6.25% Linda K. Jones 6.25%		Clyde W. Jones 100% Linda K. Jones 100%	
	Township 140 North, Range 96 West Section 31: Lots 1, 2, E/2NW/4	.64546 143.65000	HBP	Paul Karow 12.50%	T. D. Rimmer Placid Oil Company 3.125% David A. Provinse .750% (8)William S. Goan .250% Henry R. C. Elser .250%	Cardinal Petroleum Company 100%	
	Township 140 North, Range 96 West Section 31: Lots 1, 2, E/2NW/4	.64546 143.65000	HBP	Clifford O. Knudtson 12.50%	T. D. Rimmer Placid Oil Company 3.125% David A. Provinse .750% (8)William S. Goan .250% Henry R. C. Elser .250%	Cardinal Petroleum Company 100%	
	Township 140 North, Range 96 West Section 31: Lots 1, 2, E/2NW/4	21.26398 143.65000	HBP	North American Royalties, Inc. 12.50%	T. D. Rimmer Placid Oil Company 3.125% David A. Provinse .750% (8)William S. Goan .250% Henry R. C. Elser .250%	Cardinal Petroleum Company 100%	

(8)Payable to Estate of William S. Goan, c/o Trust Department,
Security Trust and Savings Bank, Billings, Montana.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
	<u>Township 140 North, Range 96 West</u> <u>Section 31: Lots 1, 2, E/2NW/4</u>	<u>71.82500</u> <u>143.65000</u>	HBP	The Federal Land Bank of Saint Paul 12.50%	T. D. Rimmer 1.250% Placid Oil Company 3.125% David A. Provinse .750% (8) William S. Goan .250% Henry R. C. Elser .250%	Cardinal Petroleum Company 100%	
17.	<u>Township 140 North, Range 96 West</u> <u>Section 31: NE/4</u>	<u>35.494</u> <u>160.000</u>	HBP	Rose Frenzel 12.50%		Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	Continental Oil Company 70.99125% Louis W. Hill, Jr. 11.83188% North American Royalties, Inc. 15.53187% Clyde W. Jones .82250% Linda K. Jones .82250%
	<u>Township 140 North, Range 96 West</u> <u>Section 31: NE/4</u>	<u>6.579</u> <u>160.000</u>	HBP	First Trust Company of Saint Paul in Trust for Elsie Fors Hill 18.75%		Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	
	<u>Township 140 North, Range 96 West</u> <u>Section 31: NE/4</u>	<u>2.194</u> <u>160.000</u>	HBP	First Trust Company of Saint Paul in Trust for Johanna Maud Hill 18.75%		Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	
	<u>Township 140 North, Range 96 West</u> <u>Section 31: NE/4</u>	<u>2.194</u> <u>160.000</u>	HBP	First Trust Company of Saint Paul in Trust for Louis Fors Hill 18.75%		Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	

(8) Payable to Estate of William S. Goan, c/o Trust Department, Security Trust and Savings Bank, Billings, Montana.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
17.	Township 140 North, Range 96 West Section 31: NE/4	2.194 160.000	HBP	First Trust Company of Saint Paul in Trust for Mari Hill 18.75%		Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	
	Township 140 North, Range 96 West Section 31: NE/4	3.595 160.000	HBP	John M. Grinde 12.50%		Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	
	Township 140 North, Range 96 West Section 31: NE/4	2.632 160.000	HBP	Clyde W. Jones 6.25% Linda K. Jones 6.25%		Clyde W. Jones 100.0% Linda K. Jones 100.0%	
	Township 140 North, Range 96 West Section 31: NE/4	.719 160.000	HBP	Paul Karow 12.50%		Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	
	Township 140 North, Range 96 West Section 31: NE/4	.719 160.000	HBP	Clifford O. Knudtson 12.50%		Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
17.	Township 140 North, Range 96 West Section 31: NE/4	2.194 160.000	HBP	First Trust Company of Saint Paul in Trust for Mari Hill 18.75%		Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	
	Township 140 North, Range 96 West Section 31: NE/4	3.595 160.000	HBP	John M. Grinde 12.50%		Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	
	Township 140 North, Range 96 West Section 31: NE/4	2.632 160.000	HBP	Clyde W. Jones 6.25% Linda K. Jones 6.25%		Clyde W. Jones 100.0% Linda K. Jones 100.0%	
	Township 140 North, Range 96 West Section 31: NE/4	.719 160.000	HBP	Paul Karow 12.50%		Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	
	Township 140 North, Range 96 West Section 31: NE/4	.719 160.000	HBP	Clifford O. Knudtson 12.50%		Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
17.	Township 140 North, Range 96 West Section 31: NE/4	17.76 160.00	HBP	North American Royalties, Inc. 12.50%		Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	
	Township 140 North, Range 96 West Section 31: NE/4	5.92 160.00		North American Royalties, Inc. 12.50%		North American Royalties, Inc. 100.0%	
	Township 140 North, Range 96 West Section 31: NE/4	80.00 160.00	HBP	The Federal Land Bank of Saint Paul 12.50%	(9) Placid Oil Company 18.75%	Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	
18.	Township 140 North, Range 96 West Section 32: SW/4	2.50 160.00	HBP	First Trust Company of Saint Paul, as Trustee for Johanna Maud Hill 12.50%		Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	Continental Oil Company 51.56250% North American Royalties, Inc. 7.03125% Louis W. Hill, Jr. 7.03125% Hudson Smart 12.50000% Clyde W. Jones 1.56250%
	Township 140 North, Range 96 West Section 32: SW/4	7.50 160.00	HBP	First Trust Company of Saint Paul, as Trustee for Elsie Fors Hill 12.50%		Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	Felmont Oil Corporation 18.75000% Linda K. Jones 1.56250%

(9) This overriding royalty out of Continental Oil Company working interest on basis of 75% x 9.375; North American Royalties, Inc. 12.5 x 9.375; and Louis W. Hill, Jr. 12.5 x 9.375.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
18.	Township 140 North, Range 96 West Section 32: SW/4	2.50 160.00	HBP	First Trust Company of Saint Paul, as Trustee for Louis Fors Hill 12.50%		Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	
	Township 140 North, Range 96 West Section 32: SW/4	2.50 160.00	HBP	First Trust Company of Saint Paul, as Trustee for Mari Hill 12.50%		Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	
	Township 140 North, Range 96 West Section 32: SW/4	40.00 160.00		Continental Oil Company 7.42188% Felmont Oil Corporation 3.12500% Louis W. Hill, Jr. .97656% North American Royalties, Inc. .97656% total 12.50000%		Continental Oil Company 59.3750% North American Royalties, Inc. 7.8125% Louis W. Hill, Jr. 7.8125% Felmont Oil Corporation 25.0000%	
	Township 140 North, Range 96 West Section 32: SW/4	80.00 160.00	11- 4-76	The Federal Land Bank of Saint Paul 12.50%	(9)Placid Oil Company 18.75%	Continental Oil Company 59.3750% North American Royalties, Inc. 7.8125% Louis W. Hill, Jr. 7.8125% Felmont Oil Corporation 25.0000%	

(9)This overriding royalty out of Continental Oil Company working interest on basis of 75% x 9.375%; North American Royalties, Inc. 12.5% x 9.375%; and Louis W. Hill, Jr. 12.5% x 9.375%.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
18.	Township 140 North, Range 96 West Section 32: SW/4	5.00 160.00		Clyde W. Jones 6.25% Linda K. Jones 6.25%		Clyde W. Jones 100% Linda K. Jones 100%	
	Township 140 North, Range 96 West Section 32: SW/4	20.00 160.00		Hudson Smart 12.50%		Hudson Smart 100%	
19.	Township 140 North, Range 96 West Section 32: SE/4	160.00	HBP	State of North Dakota 12.50%		Union Oil Company of California 100%	Union Oil Company of California 100%
20.	Township 140 North, Range 96 West Section 32: NW/4	160.00	HBP	John F. Trunk and/or Mildred M. Trunk .39060% Johnnie Mae Cannon .97660% J. F. Brown .09765% Beeman Dockery .83980% Mildred S. Kalanek, Guardian 3.12500% Darlene McKinley Lane .78130% E. E. Trumbull .78130% Mary Margaret Pugh .58590% E. L. and Virginia Sherron 1.56250% Pacific West Lease Company .19530% Elizabeth H. Welch .78130% Jos. E. Biallas and Elsie Biallas .39060% Clark E. Jones .07810% N. H. and Mary Pearl Lake .78130% M. H. Lang .09765% Zula Mae Pugh .07810% Dr. Carl Stroud and Dr. Fayette K. Stroud .11720% J. Hiram Moore, Betty Jane Moore, Michael Harrison Moore, Trustees of the Moore Trust .83980% total 12.50000%		The Superior Oil Company 50% North American Royalties, Inc. 25% Cities Service Oil Company 25%	The Superior Oil Company 50% North American Royalties, Inc. 25% Cities Service Oil Company 25%

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
21.	<u>Township 140 North, Range 96 West</u> <u>Section 32: NE/4</u>	11.667 160.000	HBP	J. Hiram Moore, 18.75% Betty Jane Moore, Michael Harrison Moore, Trustees of the Moore Trust	T. D. Rimmer 1.4375% C. C. Spencer 1.0000% R. E. Moore 1.0000% David A. Provinse .8625% (8) William S. Goan .2875% Henry R. C. Elser.2875%	Cardinal Petroleum Company 100%	H. L. Hunt Cardinal Petroleum Company 2.50% 97.50%
	<u>Township 140 North, Range 96 West</u> <u>Section 32: NE/4</u>	1.667 160.000	HBP	Dewitt Landis, Jr. Charles E. Landis 9.375% 9.375%	T. D. Rimmer 1.4375% C. C. Spencer 1.0000% R. E. Moore 1.0000% David A. Provinse .8625% (8) William S. Goan .2875% Henry R. C. Elser.2875%	Cardinal Petroleum Company 100%	
	<u>Township 140 North, Range 96 West</u> <u>Section 32: NE/4</u>	1.666 160.000	HBP	Elizabeth Landis 18.75%	T. D. Rimmer 1.4375% C. C. Spencer 1.0000% R. E. Moore 1.0000% David A. Provinse .8625% (8) William S. Goan .2875% Henry R. C. Elser.2875%	Cardinal Petroleum Company 100%	
	<u>Township 140 North, Range 96 West</u> <u>Section 32: NE/4</u>	1.666 160.000	HBP	Viola L. Younger 18.75%	T. D. Rimmer 1.4375% C. C. Spencer 1.0000% R. E. Moore 1.0000% David A. Provinse .8625% (8) William S. Goan .2875% Henry R. C. Elser.2875%	Cardinal Petroleum Company 100%	
	<u>Township 140 North, Range 96 West</u> <u>Section 32: NE/4</u>	1.666 160.000	HBP	Emna L. Purves 18.75%	T. D. Rimmer 1.4375% C. C. Spencer 1.0000% R. E. Moore 1.0000% David A. Provinse .8625% (8) William S. Goan .2875% Henry R. C. Elser.2875%	Cardinal Petroleum Company 100%	

(8) Payable to Estate of William S. Goan, c/o Trust Department, Security Trust and Savings Bank, Billings, Montana.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
21.	Township 140 North, Range 96 West Section 32: NE/4	1.667 160.000	HBP	Johnnie L. Service 18.75%	T. D. Rimmer 1.4375% C. C. Spencer 1.0000% R. E. Moore 1.0000% David A. Provinse .8625% (8) William S. Goan .2875% Henry R. C. Elser.2875%	Cardinal Petroleum Company 100%	
	Township 140 North, Range 96 West Section 32: NE/4	6.00 160.00	HBP	Robert L. Moore 18.75%	T. D. Rimmer 1.4375% C. C. Spencer 1.0000% R. E. Moore 1.0000% David A. Provinse .8625% (8) William S. Goan .2875% Henry R. C. Elser.2875%	Cardinal Petroleum Company 100%	
	Township 140 North, Range 96 West Section 32: NE/4	6.00 160.00	HBP	Mary H. Ayala 18.75%	T. D. Rimmer 1.4375% C. C. Spencer 1.0000% R. E. Moore 1.0000% David A. Provinse .8625% (8) William S. Goan .2875% Henry R. C. Elser.2875%	Cardinal Petroleum Company 100%	
	Township 140 North, Range 96 West Section 32: NE/4	6.667 160.000	HBP	Seth Eby, Jr. 18.75%	T. D. Rimmer 1.4375% C. C. Spencer 1.0000% R. E. Moore 1.0000% David A. Provinse .8625% (8) William S. Goan .2875% Henry R. C. Elser.2875%	Cardinal Petroleum Company 100%	
	Township 140 North, Range 96 West Section 32: NE/4	6.667 160.000	HBP	J. H. Morris, Agent 18.75%	T. D. Rimmer 1.4375% C. C. Spencer 1.0000% R. E. Moore 1.0000% David A. Provinse .8625% (8) William S. Goan .2875% Henry R. C. Elser.2875%	Cardinal Petroleum Company 100%	

(8) Payable to Estate of William S. Goan, c/o Trust Department,
Security Trust and Savings Bank, Billings, Montana.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
21.	<u>Township 140 North, Range 96 West</u> <u>Section 32: NE/4</u>	10.667 160.000	HBP	North American Royalties, Inc. 12.50%	T. D. Rimmer 1.4375% C. C. Spencer 1.0000% R. E. Moore 1.0000% David A. Provinse .8625% (8)William S. Goan .2875% Henry R. C. Elser.2875%	Cardinal Petroleum Company 100%	
	<u>Township 140 North, Range 96 West</u> <u>Section 32: NE/4</u>	100.00 160.00	HBP	Frank Filipi and Mary T. Filipi 12.50%	T. D. Rimmer 1.4375% C. C. Spencer 1.0000% R. E. Moore 1.0000% David A. Provinse .8625% (8)William S. Goan .2875% Henry R. C. Elser.2875%	Cardinal Petroleum Company 100%	
	<u>Township 140 North, Range 96 West</u> <u>Section 32: NE/4</u>	4.00 160.00	HBP	Mary E. Clare 12.50%		H. L. Hunt 100%	
22.	<u>Township 140 North, Range 96 West</u> <u>Section 33: N/2SW/4</u>	20.00 80.00	HBP	Harry V. Kosteletzky 12.50%		Continental Oil Company 100%	Continental Oil Company 100%
	<u>Township 140 North, Range 96 West</u> <u>Section 33: N/2SW/4</u>	20.00 80.00	HBP	Rose Kosteletzky 12.50%		Continental Oil Company 100%	
	<u>Township 140 North, Range 96 West</u> <u>Section 33: N/2SW/4</u>	10.00 80.00	HBP	Gladys Zimmerman 12.50%		Continental Oil Company 100%	
	<u>Township 140 North, Range 96 West</u> <u>Section 33: N/2SW/4</u>	10.00 80.00	HBP	Larry Kosteletzky 12.50%		Continental Oil Company 100%	

(8) Payable to Estate of William S. Goan, c/o Trust Department, Security Trust and Savings Bank, Billings, Montana.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
22.	Township 140 North, Range 96 West Section 33: N/2SW/4	10.00 80.00	HBP	Ronald Kostelecky 12.50%		Continental Oil Company 100%	
	Township 140 North, Range 96 West Section 33: N/2SW/4	10.00 80.00	HBP	Marlene Ann Fowler 12.50%		Continental Oil Company 100%	
23.	COMMUNITIZED TRACT:						
	Township 140 North, Range 96 West Section 33: W/2NE/4, NW/4	60.00 240.00	HBP	Harry V. Kostelecky 12.50%		Continental Oil Company 100%	Continental Oil Company 100%
	Township 140 North, Range 96 West Section 33: W/2NE/4, NW/4	60.00 240.00	HBP	Rose Kostelecky 12.50%		Continental Oil Company 100%	
	Township 140 North, Range 96 West Section 33: W/2NE/4, NW/4	24.00 240.00	HBP	Gladys Zimmerman 12.50%		Continental Oil Company 100%	
	Township 140 North, Range 96 West Section 33: W/2NE/4, NW/4	24.00 240.00	HBP	Larry Kostelecky 12.50%		Continental Oil Company 100%	
	Township 140 North, Range 96 West Section 33: W/2NE/4, NW/4	24.00 240.00	HBP	Ronald Kostelecky 12.50%		Continental Oil Company 100%	
	Township 140 North, Range 96 West Section 33: W/2NE/4, NW/4	24.00 240.00	HBP	Marlene Ann Fowler 12.50%		Continental Oil Company 100%	
	Township 140 North, Range 96 West Section 33: W/2NE/4, NW/4	24.00 240.00	HBP	Patricia Kostelecky 12.50%		Continental Oil Company 100%	

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
23.	Township 140 North, Range 96 West Section 33: SE/4NE/4, NW/4NE/4NE/4, S/2NE/4NE/4	17.50 70.00	HBP	Harry V. Kostelecky 12.50%	R. E. Moore .26954% Arthur C. Bauer .13672% Elene N. Shjeflo.02734% Patricia Ann Whitney .02734% John K. Whitney .02734% John D. Decker .13672%	Continental Oil Company 100%	
	Township 140 North, Range 96 West Section 33: SE/4NE/4, NW/4NE/4NE/4, S/2NE/4NE/4	17.50 70.00	HBP	Rose Kostelecky 12.50%	R. E. Moore .26954% Arthur C. Bauer .13672% Elene N. Shjeflo.02734% Patricia Ann Whitney .02734% John K. Whitney .02734% John D. Decker .13672%	Continental Oil Company 100%	
	Township 140 North, Range 96 West Section 33: SE/4NE/4, NW/4NE/4NE/4, S/2NE/4NE/4	7.00 70.00	HBP	Gladys Zimmerman 12.50%	R. E. Moore .26954% Arthur C. Bauer .13672% Elene N. Shjeflo.02734% Patricia Ann Whitney .02734% John K. Whitney .02734% John D. Decker .13672%	Continental Oil Company 100%	
	Township 140 North, Range 96 West Section 33: SE/4NE/4, NW/4NE/4NE/4, S/2NE/4NE/4	7.00 70.00	HBP	Larry Kostelecky 12.50%	R. E. Moore .26954% Arthur C. Bauer .13672% Elene N. Shjeflo.02734% Patricia Ann Whitney .02734% John K. Whitney .02734% John D. Decker .13672%	Continental Oil Company 100%	
	Township 140 North, Range 96 West Section 33: SE/4NE/4, NW/4NE/4NE/4, S/2NE/4NE/4	7.00 70.00	HBP	Ronald Kostelecky 12.50%	R. E. Moore .26954% Arthur C. Bauer .13672% Elene N. Shjeflo.02734% Patricia Ann Whitney .02734% John K. Whitney .02734% John D. Decker .13672%	Continental Oil Company 100%	

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
23.	Township 140 North, Range 96 West Section 33: SE/4NE/4, NW/4NE/4NE/4, S/2NE/4NE/4	7.00 70.00	HBP	Marlene Ann Fowler 12.50%	R. E. Moore .26954% Arthur C. Bauer .13672% Elene N. Shjeflo.02734% Patricia Ann Whitney .02734% John K. Whitney .02734% John D. Decker .13672%	Continental Oil Company 100%	
	Township 140 North, Range 96 West Section 33: SE/4NE/4, NW/4NE/4NE/4, S/2NE/4NE/4	7.00 70.00	HBP	Patricia Kosteletzky 12.50%	R. E. Moore .26954% Arthur C. Bauer .13672% Elene N. Shjeflo.02734% Patricia Ann Whitney .02734% John K. Whitney .02734% John D. Decker .13672%	Continental Oil Company 100%	
	Township 140 North, Range 96 West Section 33: NE/4NE/4NE/4	10.00	HBP	Richard Ficek 12.50%	R. E. Moore .26954%	Continental Oil Company 100%	
24.	Township 140 North, Range 97 West Section 27: S/2	320.00	HBP	Louis L. Zahradnik and Mildred D. Zahradnik 12.50%	(3)Robert L. Grady .50%	Continental Oil Company 50% Shell Oil Company 50%	Continental Oil Company 50% Shell Oil Company 50%
25.	<u>COMMUNITIZED TRACT:</u> Township 140 North, Range 97 West Section 27: NE/4	160.00	11- 1-74	Vincent Marsh and Mary Marsh, Eva Loran, Otto Marsh, Ella Mulholland, Adam Marsh and Martha Niehoff 12.50%	Pronghorn Petroleum Corporation 10% of 8/8th ORR	King Resources 100%	King Resources 100%

(3)This overriding royalty out of Shell Oil Company interest.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
25.	<u>Township 140 North, Range 97 West</u> <u>Section 27: NW/4</u>	160.00	11- 5-74	Tony F. Buresh and Gertrude M. Buresh 12.50%	Pronghorn Petroleum Corporation 10% of 8/8ths ORR	King Resources 100%	
26.	<u>COMMUNITIZED TRACT:</u> <u>Township 140 North, Range 97 West</u> <u>Section 26: NW/4</u>	160.00	3-16-74	Tony F. Buresh and Gertrude M. Buresh 12.50%	(10) Continental Oil Company 6.25% (11) Robert L. Grady .50%	(12) G. G. Green 3.1250% (12) Central Oil Company 46.8750% Shell Oil Company 50.0000%	Shell Oil Company 37.50000% G. G. Green 3.90625% Central Oil Company 58.59375%
	<u>Township 140 North, Range 97 West</u> <u>Section 26: E/2SW/4</u>	80.00	HBP	Minerva Irene Zahradnik 6.25% Minerva Irene Zahradnik, Guardian of Dennis Joseph Zahradnik and Diana Mae Zahradnik, Minors 6.25% total 12.50%	(13) The Superior Oil Company 3.125%	G. G. Green 6.25% Central Oil Company 93.75%	

(10) At payout, Continental's 6.25% ORR (gross), 3.125% (net) may be converted to 50% Working Interest (gross), 25% (net).

(11) Robert L. Grady's ORR is proportionately out of the interest of Central Oil Company and G. G. Green.

(12) At payout, Working Interest will be: G. G. Green 2.68493%; Central Oil Company 40.27395%; Calvert Drilling & Producing Co. 7.04112%; Shell Oil Company 50%.

(13) At payout, Superior Oil Company's 3.125% ORR (gross and net) may be converted to a 50% Working Interest (gross and net).

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
26.	<u>Township 140 North, Range 97 West</u> <u>Section 26: W/2SW/4</u>	80.00	HBP	Minerva Irene Zahradnik 6.25% Minerva Irene Zahradnik, Guardian of Dennis Joseph Zahradnik and Diana Mae Zahradnik, Minors 6.25% total 12.50%	Robert L. Grady .50%	Shell Oil Company 50.000% G. G. Green 3.125% Central Oil Company 46.875%	
27.	<u>COMMUNITIZED TRACT:</u> <u>Township 140 North, Range 97 West</u> <u>Section 26: NE/4</u>	160.00	HBP	Tony I. Buresh and Gertrude M. Buresh 12.50%	(3)Robert L. Grady .50%	Continental Oil Company 50% Shell Oil Company 50%	Continental Oil Company 50% Shell Oil Company 50%
	<u>Township 140 North, Range 97 West</u> <u>Section 26: SE/4</u>	160.00	HBP	Louis Karsky and Agnes Karsky 6.2500% First National Bank of Dickinson, North Dakota 3.1250% Donald F. Martin 1.5625% Dorothy Ponton 1.5625% total 12.5000%	(3)Robert L. Grady .50%	Continental Oil Company 50% Shell Oil Company 50%	

(3) This overriding royalty out of Shell Oil Company working interest.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
28.	<u>COMMUNITIZED TRACT:</u>						
	<u>Township 140 North, Range 97 West</u> <u>Section 25: SE/4</u>	160.00	HBP	Joseph J. Kadrmas and Mildred J. Kadrmas 12.50%	(3)Robert L. Grady .50%	Continental Oil Company 50% Shell Oil Company 50%	Continental Oil Company 50.0% Shell Oil Company 50.0%
	<u>Township 140 North, Range 97 West</u> <u>Section 25: SW/4</u>	160.00	HBP	Louis Karsky and Agnes Karsky 6.2500% First National Bank of Dickinson, North Dakota 3.1250% Donald F. Martin 1.5625% Dorothy Ponton 1.5625% total 12.5000%	(3)Robert L. Grady .50%	Continental Oil Company 50% Shell Oil Company 50%	
29.	<u>Township 140 North, Range 97 West</u> <u>Section 25: NW/4</u>	160.00		Louis L. Zahradnik and Mildred D. Zahradnik 12.50%		Louis L. Zahradnik and Mildred D. Zahradnik 100%	Louis L. Zahradnik and Mildred D. Zahradnik 100.0%
30.	<u>Township 140 North, Range 97 West</u> <u>Section 25: NE/4</u>	160.00	HBP	Joe V. Ridl and Lillian Ridl 12.50%		Joe V. Ridl and Lillian Ridl 100%	Joe V. Ridl and Lillian Ridl 100.0%
31.	<u>Township 140 North, Range 96 West</u> <u>Section 30: Lots 3, 4, E/2SW/4</u>	66.28 141.46	HBP	Rose Frenzel 12.50%		Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	Continental Oil Company 75.0% Louis W. Hill, Jr. 12.5% North American Royalties, Inc. 12.5%

(3)This overriding royalty out of Shell Oil Company working interest.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
31.	Township 140 North, Range 96 West Section 30: Lots 3, 4, E/2SW/4	3.17 141.46	HBP	John M. Grinde 12.50%		Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	
	Township 140 North, Range 96 West Section 30: Lots 3, 4, E/2SW/4	.64 141.46	HBP	Paul Karow 12.50%		Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	
	Township 140 North, Range 96 West Section 30: Lots 3, 4, E/2SW/4	.64 141.46	HBP	Clifford O. Knudtson 12.50%		Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	
	Township 140 North, Range 96 West Section 30: Lots 3, 4, E/2SW/4	70.73 141.46	HBP	The Federal Land Bank of Saint Paul 12.50%	(9)Placid Oil Company 12.50%	Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	

(9)This overriding royalty out of Continental Oil Company working interest on basis of 75% x 12.50%; North American Royalties, Inc. 12.5% x 12.50% and Louis W. Hill, Jr. 12.5% x 12.50%.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
32.	Township 140 North, Range 96 West Section 30: SE/4	80.00 <u>160.00</u>	HBP	Joe V. Ridl and Lillian Ridl 12.50%	T. D. Rimmer 1.250% David A. Provinse .750% (8) William S. Goan .250% Henry R. C. Elser.250%	Cardinal Petroleum Company 100%	Cardinal Petroleum Company 100%
	Township 140 North, Range 96 West Section 30: SE/4	80.00 <u>160.00</u>	HBP	The Federal Land Bank of Saint Paul 12.50%	T. D. Rimmer 1.250% Placid Oil Company 6.250% David A. Provinse .750% (8) William S. Goan .250% Henry R. C. Elser.250%	Cardinal Petroleum Company 100%	
33.	Township 140 North, Range 96 West Section 30: Lots 1, 2, E/2NW/4	141.86	HBP	Minerva Irene Zahradnik 6.250% Minerva Irene Zahradnick, Guardian of Dennis Joseph Zahradnick and Diana Mae Zahradnick, Minors <u>6.250%</u> total 12.500%		The Superior Oil Company 100%	The Superior Oil Company 100%

(8) Payable to Estate of William S. Goan, c/o Trust Department, Security Trust and Savings Bank, Billings, Montana.

[illegible]

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
35.	Township 140 North, Range 96 West Section 29: SW/4	160.00	HBP	John F. Trunk and/or Mildred M. Trunk .39062% N. H. Lake .39063% E. L. Sherron .78125% Mildred S. Kalanek, Guardian of person and Estate of Gerald David Kalanek .69444% Vivian Miller 1.21528% Jos. E. Biallas and Elsie Biallas .39063% Beeman Dockery .83984% Darlene McKinley Lane .78125% J. Hiram Moore, Betty Jane Moore, Michael Harrison Moore, Trustees of the Moore Trust .83984% Mary Margaret Pugh .58594% Pacific West Lease Company .19531% Elizabeth H. Welch .78125% Mary Pearl Lake .39063% Virginia L. Sherron .78125% Dr. Carl Stroud and Dr. Fayette K. Stroud .11718% Mary Daphne Hibl 1.21528% Johnnie Mae Cannon .97656% Clark E. Jones .07813% A. O. Lang, Jr. .19531% Zula Mae Pugh .07813% E. E. Trumbull .78125% total 12.50000%		The Superior Oil Company 50% North American Royalties, Inc. 25% Cities Service Oil Company 25%	The Superior Oil Company 50% North American Royalties, Inc. 25% Cities Service Oil Company 25%

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
36.	Township 140 North, Range 96 West Section 29: SE/4	160.00	HBP	Ludwig Filipi 12.50%		Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%
37.	<u>COMMUNITIZED TRACT:</u>						
	Township 140 North, Range 96 West Section 29: N/2	13.334 320.000	HBP	J. Hiram Moore, 18.75% Betty Jane Moore Michael Harrison Moore, Trustees of the Moore Trust	T. D. Rimmer 2.4375% David A. Provinse 1.4625% (8) William S. Goan .4875% Henry R. C. Elser .4875%	Cardinal Petroleum Company 100.0%	Cardinal Petroleum Company H. L. Hunt 97.5% 2.5%
	Township 140 North, Range 96 West Section 29: N/2	3.333 320.000	HBP	Dewitt Landis, Jr. 9.375% Charles E. Landis 9.375%	T. D. Rimmer 2.4375% David A. Provinse 1.4625% (8) William S. Goan .4875% Henry R. C. Elser .4875%	Cardinal Petroleum Company 100.0%	
	Township 140 North, Range 96 West Section 29: N/2	3.333 320.000	HBP	Elizabeth Landis 18.75%	T. D. Rimmer 2.4375% David A. Provinse 1.4625% (8) William S. Goan .4875% Henry R. C. Elser .4875%	Cardinal Petroleum Company 100.0%	
	Township 140 North, Range 96 West Section 29: N/2	3.333 320.000	HBP	Viola L. Younger 18.75%	T. D. Rimmer 2.4375% David A. Provinse 1.4625% (8) William S. Goan .4875% Henry R. C. Elser .4875%	Cardinal Petroleum Company 100.0%	

(8) Payable to Estate of William S. Goan, c/o Trust Department, Security Trust and Savings Bank, Billings, Montana.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
37.	Township 140 North, Range 96 West Section 29: N/2	3.333 320.000	HBP	Emna L. Purves 18.75%	T. D. Rimmer 2.4375% David A. Provinse 1.4625% (8)William S. Goan .4875% Henry R. C. Elser .4875%	Cardinal Petroleum Company 100%	
	Township 140 North, Range 96 West Section 29: N/2	3.333 320.000	HBP	Johnnie L. Service 18.75%	T. D. Rimmer 2.4375% David A. Provinse 1.4625% (8)William S. Goan .4875% Henry R. C. Elser .4875%	Cardinal Petroleum Company 100%	
	Township 140 North, Range 96 West Section 29: N/2	12.00 320.00	HBP	Robert L. Moore 18.75%	T. D. Rimmer 2.4375% David A. Provinse 1.4625% (8)William S. Goan .4875% Henry R. C. Elser .4875%	Cardinal Petroleum Company 100%	
	Township 140 North, Range 96 West Section 29: N/2	12.00 320.00	HBP	Mary H. Ayala (formerly Mary C. S. Henderson) 18.75%	T. D. Rimmer 2.4375% David A. Provinse 1.4625% (8)William S. Goan .4875% Henry R. C. Elser .4875%	Cardinal Petroleum Company 100%	
	Township 140 North, Range 96 West Section 29: N/2	2.50 320.00	HBP	The Home-Stake Royalty Corporation 18.75%	T. D. Rimmer 2.4375% David A. Provinse 1.4625% (8)William S. Goan .4875% Henry R. C. Elser .4875%	Cardinal Petroleum Company 100%	
	Township 140 North, Range 96 West Section 29: N/2	2.50 320.00	HBP	The Home-Stake Oil and Gas Company 18.75%	T. D. Rimmer 2.4375% David A. Provinse 1.4625% (8)William S. Goan .4875% Henry R. C. Elser .4875%	Cardinal Petroleum Company 100%	
	Township 140 North, Range 96 West Section 29: N/2	13.334 320.000	HBP	Seth Eby, Jr. 18.75%	T. D. Rimmer 2.4375% David A. Provinse 1.4625% (8)William S. Goan .4875% Henry R. C. Elser .4875%	Cardinal Petroleum Company 100%	

(8)Payable to Estate of William S. Goan, c/o Trust Department, Security Trust and Savings Bank, Billings, Montana.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
37.	Township 140 North, Range 96 West Section 29: N/2	2.500 320.000	HBP	Louis W. Hill, Jr. 18.75%	T. D. Rimmer 2.4375% David A. Provinse 1.4625% (8)William S. Goan .4875% Henry R. C. Elser .4875%	Cardinal Petroleum Company 100%	
	Township 140 North, Range 96 West Section 29: N/2	13.333 320.000	HBP	J. H. Morris, Agent 18.75%	T. D. Rimmer 2.4375% David A. Provinse 1.4625% (8)William S. Goan .4875% Henry R. C. Elser .4875%	Cardinal Petroleum Company 100%	
	Township 140 North, Range 96 West Section 29: N/2	23.834 320.000	HBP	North American Royalties, Inc. 12.50%	T. D. Rimmer 2.4375% David A. Provinse 1.4625% (8)William S. Goan .4875% Henry R. C. Elser .4875%	Cardinal Petroleum Company 100%	
	Township 140 North, Range 96 West Section 29: N/2	200.000 320.000	HBP	Frank Filipi and Mary T. Filipi 12.50%	T. D. Rimmer 2.4375% David A. Provinse 1.4625% (8)William S. Goan .4875% Henry R. C. Elser .4875%	Cardinal Petroleum Company 100%	
	Township 140 North, Range 96 West Section 29: N/2	8.000 320.000	HBP	Mary E. Clare 12.50%		H. L. Hunt 100%	

(8)Payable to Estate of William S. Goan, c/o Trust Department, Security Trust and Savings Bank, Billings, Montana.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
38.	<u>COMMUNITIZED TRACT:</u>						
	<u>Township 140 North, Range 96 West</u> <u>Section 28: A Portion of the S/2</u> described as follows: Beginning at a point 33 feet north of the southeast corner and on the east line of Section 28; thence in a westerly direction 3550 feet parallel to the south line of said Section 28; thence at right angles in a northerly direction 625 feet; thence at right angles in an easterly direction 3550 feet; thence at right angles in a southerly direction 625 feet to the point of beginning.	12.50 50.00	HBP	Anton J. Schwindt 12.50%	Henry R. C. Elser .25% (8)William S. Goan .25% David A. Provinse .75% T. D. Rimmer 1.25%	Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%
	<u>Township 140 North, Range 96 West</u> <u>Section 28: S/2</u>	30.00 320.00	HBP	Jack Neill 18.75%	Henry R. C. Elser .25% (8)William S. Goan .25% David A. Provinse .75% T. D. Rimmer 1.25%	Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	
	<u>Township 140 North, Range 96 West</u> <u>Section 28: S/2</u>	40.00 320.00	HBP	W. C. Merrill 18.75%	Henry R. C. Elser .25% (8)William S. Goan .25% David A. Provinse .75% T. D. Rimmer 1.25%	Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	
	<u>Township 140 North, Range 96 West</u> <u>Section 28: S/2</u>	40.00 320.00	HBP	L. A. Edwards, Jr. 18.75%	Henry R. C. Elser .25% (8)William S. Goan .25% David A. Provinse .75% T. D. Rimmer 1.25%	Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	

(8) Payable to Estate of William S. Goan, c/o Trust Department, Security Trust and Savings Bank, Billings, Montana.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
38.	Township 140 North, Range 96 West Section 28: S/2	10.00 320.00	HBP	Henry Minnett and Henry Minnett, as Executor of Estate of Norma Minnett, Deceased. 18.75%	Henry R. C. Elser .25% ⑧William S. Goan .25% David A. Provinse .75% T. D. Rimmer 1.25%	Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	
	Township 140 North, Range 96 West Section 28: S/2	10.00 320.00	HBP	Phyllis Swarts Hulme 12.50%	Henry R. C. Elser .25% ⑧William S. Goan .25% David A. Provinse .75% T. D. Rimmer 1.25%	Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	
	Township 140 North, Range 96 West Section 28: S/2	10.00 320.00	HBP	F. D. Laws 18.75%	Henry R. C. Elser .25% ⑧William S. Goan .25% David A. Provinse .75% T. D. Rimmer 1.25%	Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	
	Township 140 North, Range 96 West Section 28: S/2	20.00 320.00	HBP	Ola Neill Ross 18.75%	Henry R. C. Elser .25% ⑧William S. Goan .25% David A. Provinse .75% T. D. Rimmer 1.25%	Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	
	Township 140 North, Range 96 West Section 28: S/2 less that metes and bounds description in that certain Warranty Deed recorded in Book 118, Page 339.	75.37 319.00	HBP	Frank A. Kudrna and Mary Kudrna 12.27444% Vincent Bren and Beatrice Bren .22556%	Henry R. C. Elser .25% ⑧William S. Goan .25% David A. Provinse .75% T. D. Rimmer 1.25%	Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	
				total	12.50000%		

⑧Payable to Estate of William S. Goan, c/o Trust Department, Security Trust and Savings Bank,
Billings, Montana.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
38.	<u>Township 140 North, Range 96 West</u> Section 28: A fractional portion of the southeast quarter of Section 28, described as follows: Beginning at a point 130 feet west and 500 feet south of the northeast corner of said quarter section, thence west a distance of 300 feet; thence south a distance of 120 feet, thence east a distance of 300 feet, thence north a distance of 120 feet to the point of beginning.	.50 1.00	HBP	Laudie J. Kudrna and Dorothy Kudrna 12.50%	Henry R. C. Elser .25% (8)William S. Goan .25% David A. Provinse .75% T. D. Rimmer 1.25%	Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	
	<u>Township 140 North, Range 96 West</u> Section 28: S/2	71.63 320.00	HBP	North American Royalties, Inc. 12.50%	Henry R. C. Elser .25% (8)William S. Goan .25% David A. Provinse .75% T. D. Rimmer 1.25%	Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	
39.	<u>Township 140 North, Range 96 West</u> Section 28: N/2	6.25 320.00	HBP	The First Trust Company of Saint Paul as Trustee for Johanna Maud Hill 18.75% The First Trust Company of Saint Paul as Trustee for Louis Fors Hill 18.75% The First Trust Company of Saint Paul as Trustee for Mari Hill 18.75%		Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	J. Hiram Moore, Betty Jane Moore, Michael Harrison Moore, Trustees of the Moore Trust 17.18750% Continental Oil Company 62.10938% Louis W. Hill, Jr. 10.35156% North American Royalties, Inc. 10.35156% 100.00000%

(8)Payable to Estate of William S. Goan, c/o Trust Department, Security Trust and Savings Bank, Billings, Montana.

Note: The interests in Tract No. 39 are based on 320.00 acres as agreed to by parties in Division Order for N/2 of Section 28, Township 140 North, Range 96 West. Revenue will be paid to Continental Oil Company 80.136% and J. Hiram Moore 19.864% until 200% non-consent payout achieved.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
39.	Township 140 North, Range 96 West Section 28: N/2 less that tract of land situated in the NE/4 of Section 28, Township 140 North, Range 96 West bounded by a line commencing at a point within said NE/4 which is located 1118 feet (westerly) from the east boundary line of said Section 28 and 1020 feet (northerly) from the south boundary line of said NE/4 of said Section 28; thence running from said point of beginning north, parallel to said east boundary line of said section, a distance of 340 feet, thence running west parallel to the north boundary line of said section a distance of 320 feet, thence running south parallel to said east boundary line of said Section, a distance of 340 feet, thence running east, parallel to said north boundary of said section, a distance of 320 feet to the point of beginning, afore said; which tract of land was conveyed to the West Plains Electric Cooperative Inc., said deed being recorded in Book 76 of Deeds, Page 359.	25.833 <u>320.000</u>		J. Hiram Moore, Betty Jane Moore, Michael Harrison Moore, Trustees of the Moore Trust 12.50%		J. Hiram Moore, Betty Jane Moore, Michael Harrison Moore, Trustees of the Moore Trust 100.0%	
	Township 140 North, Range 96 West Section 28: N/2	5.834 <u>320.000</u>	HBP	Elizabeth Landis 18.75%	Dale F. Monthaven 9.375%	J. Hiram Moore, Betty Jane Moore, Michael Harrison Moore, Trustees of the Moore Trust 100.0%	
	Township 140 North, Range 96 West Section 28: N/2	5.834 <u>320.000</u>	HBP	Viola L. Younger 18.75%	Dale F. Monthaven 9.375%	J. Hiram Moore, Betty Jane Moore, Michael Harrison Moore, Trustees of the Moore Trust 100.0%	

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
39.	Township 140 North, Range 96 West Section 28: N/2 less that tract of land situated in the NE/4 of Section 28, Township 140 North, Range 96 West bounded by a line commencing at a point within said NE/4 which is located 1118 feet (westerly) from the east boundary line of said Section 28 and 1020 feet (northerly) from the south boundary line of said NE/4 of said Section 28; thence running from said point of beginning north, parallel to said east boundary line of said section, a distance of 340 feet, thence running west parallel to the north boundary line of said section a distance of 320 feet, thence running south, parallel to said east boundary line of said section, a distance of 340 feet, thence running east, parallel to said north boundary of said section, a distance of 320 feet to the point of beginning, aforesaid, which tract of land was conveyed to the West Plains Electric Cooperative, Inc., said deed being recorded in Book 76 of Deeds, Page 359.	158.00 320.00	HBP	Louie Pribyl and Magdalene Pribyl 6.25% Anton Pribyl and Mary Pribyl 6.25% total 12.50%		Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	
	Township 140 North, Range 96 West Section 28: N/2	6.25 320.00	HBP	The Home-Stake Oil and Gas Company 18.75%		Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	
	Township 140 North, Range 96 West Section 28: N/2	6.25 320.00	HBP	The Home-Stake Royalty Corporation 18.75%		Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
39.	Township 140 North, Range 96 West Section 28: N/2	6.25 320.00	HBP	North American Royalties, Inc. 12.50%		Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	
	Township 140 North, Range 96 West Section 28: N/2 less that tract of land recorded in Book 76 of Deeds, Page 359.	80.00 320.00	HBP	E. B. Kelly and Naomi Kelly 12.50%	(18) John B. Hawley, Jr. and G. S. Davidson, Trustees under John B. Hawley, Jr. Trust No. 1 3.125% A. G. Golden .125% Steven H. Harris .250% John N. Klemer .250% James L. Brown .250% William H. Champion .125% total 4.125%	Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	
	Township 140 North, Range 96 West Section 28: N/2	5.833 320.000	HBP	Charles E. Landis 9.375% DeWitt Landis, Jr. 9.375%	Dale F. Monthaven 9.375%	J. Hiram Moore 100.0% Betty Jane Moore, Michael Harrison Moore, Trustees of the Moore Trust 100.0%	
	Township 140 North, Range 96 West Section 28: N/2	5.833 320.000	HBP	Emna L. Purves 18.75%	Dale F. Monthaven 9.375%	J. Hiram Moore, Betty Jane Moore, Michael Harrison Moore, Trustees of the Moore Trust 100.0%	

①①This overriding royalty out of working interest on basis of Continental Oil Company 75%; North American Royalties, Inc. 12.5%; Louis W. Hill, Jr. 12.5%.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
39.	Township 140 North, Range 96 West Section 28: N/2	<u>5.833</u> 320.000	HBP	Johnnie L. Service and C. T. Service 18.75%	Dale F. Monthaven 9.375%	J. Hiram Moore 100.0%	
	Township 140 North, Range 96 West Section 28: A tract of land situated in the NE/4 bounded by a line commencing at a point within said NE/4 which is located 1118 feet westerly from the east boundary line of said Section 28 and 1020 feet northerly from the south boundary line of said NE/4 of Section 28; thence running from said point of beginning north, parallel to said east boundary line of said section, a distance of 340 feet, thence running west, parallel to the north boundary line of said section, a distance of 320 feet, thence running south parallel to said east boundary line of said section, a distance of 340 feet, thence running east, parallel to said north boundary of said section, a distance of 320 feet to the point of beginning, together with an easement over, upon and across said NE/4 for ingress to and egress from the above described tract.	<u>2.00</u> 320.00	HBP	Louis Pribyl and Magdalene Pribyl 6.25% Anton Pribyl and Mary Pribyl 6.25% total 12.50%		Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	
40.	Township 140 North, Range 96 West Section 27: W/2	<u>40.00</u> 320.00	HBP	M. J. Raschko and Katherine Lefor Raschko 1.56250%	LeRoy Blaylock 2.500%	Continental Oil Company 100.0%	Continental Oil Company 100%
	Township 140 North, Range 96 West Section 27: W/2	<u>160.00</u> 320.00	HBP	First National Bank of Dickinson, North Dakota 6.25000%		Continental Oil Company 100.0%	

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
40.	Township 140 North, Range 96 West Section 27: W/2	8.00 320.00	HBP	Shirley Ruth Shapiro .31250%		Continental Oil Company 100%	
	Township 140 North, Range 96 West Section 27: W/2	8.00 320.00	HBP	Evelyn Margaret Rauch .31250%		Continental Oil Company 100%	
	Township 140 North, Range 96 West Section 27: W/2	16.00 320.00	HBP	Kathleen Kellogg, Trustee .62500%		Continental Oil Company 100%	
	Township 140 North, Range 96 West Section 27: W/2	6.00 320.00	HBP	Norbert J. Muggli .23437%		Continental Oil Company 100%	
	Township 140 North, Range 96 West Section 27: W/2	2.00 320.00	HBP	Ward M. Kirby .07813%		Continental Oil Company 100%	
	Township 140 North, Range 96 West Section 27: W/2	20.00 320.00	HBP	Gilbert Saxowsky .78125%		Continental Oil Company 100%	
	Township 140 North, Range 96 West Section 27: W/2	8.00 320.00	HBP	Vernon F. Raschko and Dorothy C. Raschko .31250%	LeRoy Blaylock 2.500%	Continental Oil Company 100%	
	Township 140 North, Range 96 West Section 27: W/2	8.00 320.00	HBP	Michael A. Raschko .31250%	LeRoy Blaylock 2.500%	Continental Oil Company 100%	
	Township 140 North, Range 96 West Section 27: W/2	8.00 320.00	HBP	Patrick P. Raschko .31250%	LeRoy Blaylock 2.500%	Continental Oil Company 100%	
	Township 140 North, Range 96 West Section 27: W/2	8.00 320.00	HBP	James M. Raschko and Bettyann Raschko .31250%	LeRoy Blaylock 2.500%	Continental Oil Company 100%	

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
40.	<u>Township 140 North, Range 96 West</u> <u>Section 27: W/2</u>	8.00 <u>320.00</u>	HBP	Ronald W. Krebs and Marlene R. Krebs .31250%	LeRoy Blaylock 2.500%	Continental Oil Company 100%	
	<u>Township 140 North, Range 96 West</u> <u>Section 27: W/2</u>	20.00 <u>320.00</u>	HBP	Gilbert Saxowsky and Magdalene A. Saxowsky, Co-executors of the Estate of F. C. Saxowsky, deceased. .78125%		Continental Oil Company 100%	
				total	12.50000%		
41.	<u>Township 140 North, Range 97 West</u> <u>Section 22: SE/4</u>	160.00	1-23-74	Vincent Marsh and Mary Marsh 3.571425% Eva Loran 1.785715% Ella Molholland 1.785715% Otto Marsh 1.785715% Adam J. Marsh 1.785715% Martha Niehoff 1.785715%		Continental Oil Company 50% Shell Oil Company 50%	Continental Oil Company 50% Shell Oil Company 50%
				total	12.500000%		

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
42.	Township 140 North, Range 97 West Section 23: S/2	320.00	HBP	Frank T. Kaisershot and Mary Kaisershot 8.854169% Evelyn Riedl .520833% Glenn L. Kaisershot .520833% Dale R. Kaisershot .520833% Angeline Kostelecky .520833% Donald F. Kaisershot .520833% Georgiann Haverlock .520833% Alfred L. Kaisershot .520833%	Peter J. Farley 1.5625% Vincent J. Duncan .3907% Raymond T. Duncan .3906% J. Walter Duncan, Jr. .3515% Walter Duncan III .0391% Walter Duncan .3906% 3.1250%	Lone Star Producing Company 100%	Lone Star Producing Company 100%
				12.500000%			
43.	Township 140 North, Range 97 West Section 24: SW/4	160.00		Louis Zahradnik and Mildred Zahradnik 12.50%		Louis Zahradnik and Mildred Zahradnik 100%	Louis Zahradnik and Mildred Zahradnik 100%
44.	Township 140 North, Range 97 West Section 24: SE/4	160.00	3- 4-74	Joe V. Ridl and Lillian Ridl 12.50%		Lone Star Producing Company 100%	Lone Star Producing Company 100%
45.	Township 140 North, Range 96 West Section 19: Lots 3, 4, E/2SW/4	142.45	HBP	Minerva Irene Zahradnik 6.250% Minerva Irene Zahradnik, Guardian of Dennis Joseph Zahradnik and Diana Mae Zahradnik, Minors 6.250% total 12.500%		The Superior Oil Company 100%	The Superior Oil Company 100%

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
46.	Township 140 North, Range 96 West Section 19: E/2	320.00	HBP	Joe V. Ridl and Lillian Ridl 12.50%	(14) { T. D. Rimmer 1.250% David A. Provinse .750% (8) { William S. Goan .250% Henry R. C. Elser .250%	Cardinal Petroleum Company 50.0% Continental Oil Company 50.0%	Cardinal Petroleum Company 50.0000% Continental Oil Company 50.0000%
47.	<u>COMMUNITIZED TRACT:</u> Township 140 North, Range 96 West Section 20: SW/4	120.00 160.00	HBP	Laudie Filipi 12.50%		Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	Continental Oil Company 75.0000% Louis W. Hill, Jr. 10.9375% North American Royalties, Inc. 14.0625%
	Township 140 North, Range 96 West Section 20: SW/4	30.00 160.00	HBP	North American Royalties, Inc. 12.50%		Continental Oil Company 100.0%	
	Township 140 North, Range 96 West Section 20: SW/4	10.00 160.00		North American Royalties, Inc. 12.50%		North American Royalties, Inc. 100.0%	
	Township 140 North, Range 96 West Section 20: SE/4	160.00	HBP	Jack Ehrmantraut and Veronica Ehrmantraut 12.50%		Continental Oil Company 75.0% North American Royalties, Inc. 12.5% Louis W. Hill, Jr. 12.5%	

(8) Payable to Estate of William S. Goan, c/o Trust Department, Security Trust and Savings Bank, Billings, Montana.

(14) This overriding royalty out of Cardinal Petroleum Company working interest.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
48.	<u>COMMUNITIZED TRACT:</u>						
	<u>Township 140 North, Range 96 West</u> <u>Section 20: NW/4</u>	160.00	HBP	Jack Ehrmantraut and Veronica Ehrmantraut 12.50%		Continental Oil Company 18.7500% North American Royalties, Inc. 60.9375% Louis W. Hill, Jr. 20.3125%	Continental Oil Company 13.12254% Louis W. Hill, Jr. 15.02991% North American Royalties, Inc. 45.28505% A. G. Golden 1.56250% Hunt Petroleum Corporation 25.00000%
	<u>Township 140 North, Range 96 West</u> <u>Section 20: NE/4</u>	80.00 160.00	HBP	Adolph F. Ficek and Emma Ficek 12.50%		Hunt Petroleum Corporation 100.0000%	
	<u>Township 140 North, Range 96 West</u> <u>Section 20: NE/4</u>	2.083 160.000	HBP	DeWitt Landis, Jr. 9.375% Charles E. Landis 9.375%		North American Royalties, Inc. 75.00000% Louis W. Hill, Jr. 25.00000%	
	<u>Township 140 North, Range 96 West</u> <u>Section 20: NE/4</u>	2.083 160.000	HBP	Elizabeth Landis 18.75%		North American Royalties, Inc. 75.00000% Louis W. Hill, Jr. 25.00000%	
	<u>Township 140 North, Range 96 West</u> <u>Section 20: NE/4</u>	2.083 160.000	HBP	Viola L. Younger 12.50%		Continental Oil Company 18.75000% North American Royalties, Inc. 60.9375% Louis W. Hill, Jr. 20.3125%	

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
48.	<u>Township 140 North, Range 96 West</u> <u>Section 20: NE/4</u>	2.084 160.000	HBP	Johnnie L. Service 18.75%		North American Royalties, Inc. 75.00000% Louis W. Hill, Jr. 25.00000%	
	<u>Township 140 North, Range 96 West</u> <u>Section 20: NE/4</u>	2.084 160.000	HBP	Emna L. Purves 18.75%		North American Royalties, Inc. 75.00000% Louis W. Hill, Jr. 25.00000%	
	<u>Township 140 North, Range 96 West</u> <u>Section 20: NE/4</u>	2.083 160.000	HBP	J. Hiram Moore, Betty Jane Moore, Michael Harrison Moore, Trustees of the Moore Trust 18.75%		North American Royalties, Inc. 75.00000% Louis W. Hill, Jr. 25.00000%	
	<u>Township 140 North, Range 96 West</u> <u>Section 20: NE/4</u>	10.000 160.000	HBP	J. M. Bryan 12.50%		Continental Oil Company 18.75000% North American Royalties, Inc. 60.9375% Louis W. Hill, Jr. 20.3125%	
	<u>Township 140 North, Range 96 West</u> <u>Section 20: NE/4</u>	7.500 160.000	HBP	Cecelia J. Weir, Executrix of the Estate of Harlan J. Weir 12.50%		Continental Oil Company 18.75000% North American Royalties, Inc. 60.93750% Louis W. Hill, Jr. 20.3125%	

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
48.	Township 140 North, Range 96 West Section 20: NE/4	7.50 160.00	HBP	Marjorie Weir 12.50%		Continental Oil Company 18.7500% North American Royalties, Inc. 60.9375% Louis W. Hill, Jr. 20.3125%	
	Township 140 North, Range 96 West Section 20: NE/4	5.00 160.00	HBP	Mary D. Kack 12.50%		Continental Oil Company 18.7500% North American Royalties, Inc. 60.9375% Louis W. Hill, Jr. 20.3125%	
	Township 140 North, Range 96 West Section 20: NE/4	10.00 160.00	HBP	Shirley Ruth Shapiro 25.00%		Continental Oil Company 18.7500% North American Royalties, Inc. 60.9375% Louis W. Hill, Jr. 20.3125%	
	Township 140 North, Range 96 West Section 20: NE/4	10.00 160.00	HBP	Evelyn Margaret Rauch 25.00%		Continental Oil Company 18.7500% North American Royalties, Inc. 60.9375% Louis W. Hill, Jr. 20.3125%	

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
48.	<u>Township 140 North, Range 96 West</u> <u>Section 20: NE/4</u>	2.50 <u>160.00</u>	HBP	Fred D. Vercellino and Marie R. Vercellino 12.50%		Continental Oil Company 18.7500% North American Royalties, Inc. 60.9375% Louis W. Hill, Jr. 20.3125%	
	<u>Township 140 North, Range 96 West</u> <u>Section 20: NE/4</u>	5.00 <u>160.00</u>	HBP	R. H. Lowrey, Sr. and Zelma Lowrey 12.50%		A. G. Golden 100.0000%	
	<u>Township 140 North, Range 96 West</u> <u>Section 20: NE/4</u>	2.50 <u>160.00</u>	HBP	The First Trust Company of Saint Paul, Trustee for Johanna Maud Hill, Louis Fors Hill and Mari Hill 18.75%		Continental Oil Company 18.7500% North American Royalties, Inc. 60.9375% Louis W. Hill, Jr. 20.3125%	
	<u>Township 140 North, Range 96 West</u> <u>Section 20: NE/4</u>	2.50 <u>160.00</u>	HBP	The Home-Stake Oil and Gas Company 18.75%		Continental Oil Company 18.7500% North American Royalties, Inc. 60.9375% Louis W. Hill, Jr. 20.3125%	
	<u>Township 140 North, Range 96 West</u> <u>Section 20: NE/4</u>	2.50 <u>160.00</u>	HBP	The Home-Stake Royalty Corporation 18.75%		Continental Oil Company 18.7500% North American Royalties, Inc. 60.9375% Louis W. Hill, Jr. 20.3125%	

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
48.	Township 140 North, Range 96 West Section 20: NE/4	.625 160.000		North American Royalties, Inc. 12.50%		North American Royalties, Inc. 100.0000%	
	Township 140 North, Range 96 West Section 20: NE/4	1.875 160.000	HBP	North American Royalties, Inc. 12.50%		Continental Oil Company 18.7500% North American Royalties, Inc. 60.9375% Louis W. Hill, Jr. 20.3125%	
49.	COMMUNITIZED TRACT:						
	Township 140 North, Range 96 West Section 21: E/2SE/4	80.00	HBP	Douglas P. Head and Ruth C. Head 12.50%	T. D. Rimmer 2.1875% David A. Provinse 1.3125% (*)William S. Goan .4375% Henry R. C. Elser .4375% M. R. Everett .3125% Beulah Crews Holman and Millikin National Bank of Decatur, Illinois, Trustees .2500% R. L. Higgins .0625%	Cardinal Petroleum Company 100.0000%	Cardinal Petroleum Company 100%
	Township 140 North, Range 96 West Section 21: W/2SE/4	80.00	HBP	Douglas P. Head and Ruth C. Head 12.50%	T. D. Rimmer 2.1875% David A. Provinse 1.3125% (*)William S. Goan .4375% Henry R. C. Elser .4375% M. R. Everett .3125% Beulah Crews Holman and Millikin National Bank of Decatur, Illinois, Trustees .2500% R. L. Higgins .0625%	Cardinal Petroleum Company 100.0000%	

(*)Payable to Estate of William S. Goan, c/o Trust Department,
Security Trust and Savings Bank, Billings, Montana.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
49.	Township 140 North, Range 96 West Section 21: SW/4	78.684715 157.169430	HBP	Margaret Wock 12.50%	T. D. Rimmer 2.1875% David A. Provinse 1.3125% (s)William S. Goan .4375% M. R. Everett .3125% Beulah Crews Holman and Millikin National Bank of Decatur, Decatur, Illinois, Trustees .2500% R. L. Higgins .0625% Henry R. C. Elser.4375%	Cardinal Petroleum Company 100%	
	Township 140 North, Range 96 West Section 21: SW/4	80.00 160.00	HBP	State of North Dakota 12.50%	T. D. Rimmer 2.1875% David A. Provinse 1.3125% (s)William S. Goan .4375% Henry R. C. Elser.4375% M. R. Everett .3125% Beulah Crews Holman and Millikin National Bank of Decatur, Decatur, Illinois, Trustees .2500% R. L. Higgins .0625%	Cardinal Petroleum Company 100%	
	Township 140 North, Range 96 West Section 21: That portion of the SW/4 described as follows: Com- mencing at SW corner of said Sec- tion 21; thence N. along W. line of said Section a distance of 900'; thence E., parallel with S. line of said Section, a distance of 137'; thence S., parallel with W. line of said Section, a distance of 900'; thence W. along S. line of said Section a distance of 137' to point of beginning.	1.415285 2.830570	HBP	Adam F. Wock and Arlene A. Wock 12.50%	T. D. Rimmer 2.1875% David A. Provinse 1.3125% (s)William S. Goan .4375% Henry R. C. Elser.4375% M. R. Everett .3125% Beulah Crews Holman and Millikin National Bank of Decatur, Decatur, Illinois, Trustees .2500% R. L. Higgins .0625%	Cardinal Petroleum Company 100%	

(s) Payable to Estate of William S. Goan, c/o Trust Department, Security Trust and Savings Bank, Billings, Montana.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
50.	<u>COMMUNITIZED TRACT:</u>						
	<u>Township 140 North, Range 96 West</u> <u>Section 21: NW/4</u>	80.00 160.00	HBP	Margaret Wock 12.50%		Continental Oil Company 18.7500% North American Royalties, Inc. 60.9375% Louis W. Hill, Jr. 20.3125%	Continental Oil Company 18.7500% North American Royalties, Inc. 60.9375% Louis W. Hill, Jr. 20.3125%
	<u>Township 140 North, Range 96 West</u> <u>Section 21: NW/4</u>	80.00 160.00	HBP	State of North Dskota 12.50%		Continental Oil Company 18.7500% North American Royalties, Inc. 60.9375% Louis W. Hill, Jr. 20.3125%	
	<u>Township 140 North, Range 96 West</u> <u>Section 21: W/2NE/4</u>	80.00	HBP	Douglas P. Head 12.50%	M. R. Everett 1.250% R. L. Higgins .250% Beaulah Crews Holman and Millikin National Bank of Decatur, Decatur, Illinois, Trustees 1.000%	Continental Oil Company 18.7500% North American Royalties, Inc. 60.9375% Louis W. Hill, Jr. 20.3125%	
	<u>Township 140 North, Range 96 West</u> <u>Section 21: E/2NE/4</u>	80.00	HBP	Douglas P. Head 12.50%	M. R. Everett 1.250% R. L. Higgins .250% Beaulah Crews Holman and Millikin National Bank of Decatur, Decatur, Illinois, Trustees 1.000%	Continental Oil Company 18.7500% North American Royalties, Inc. 60.9375% Louis W. Hill, Jr. 20.3125%	

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
51.	<u>COMMUNITIZED TRACT:</u>						
	<u>Township 140 North, Range 96 West</u> <u>Section 22: SW/4</u>	120.00 160.00	HBP	Walter E. Hewson and Barbara Hewson 6.25% Frank Hoff and Clementine Hoff 6.25%		Continental Oil Company 75.00% North American Royalties, Inc. 12.50% Louis W. Hill, Jr. 12.50%	Continental Oil Company 62.50000% North American Royalties, Inc. 23.73047% Louis W. Hill, Jr. 11.42578% J. Hiram Moore, Betty Jane Moore, Michael Harrison Moore, Trustees of the Moore Trust 2.34375%
	<u>Township 140 North, Range 96 West</u> <u>Section 22: SW/4</u>	10.00 160.00	HBP	C. J. Winbauer and Joan M. Winbauer 12.50%		Continental Oil Company 75.00% North American Royalties, Inc. 12.50% Louis W. Hill, Jr. 12.50%	
	<u>Township 140 North, Range 96 West</u> <u>Section 22: SW/4</u>	30.00 160.00	HBP	A. W. Lucas Company 12.50%		Continental Oil Company 75.00% North American Royalties, Inc. 12.50% Louis W. Hill, Jr. 12.50%	
	<u>Township 140 North, Range 96 West</u> <u>Section 22: SE/4</u>	80.00 160.00	HBP	Anton Pribyl and Mary Pribyl 12.50%		Continental Oil Company 100.00%	
	<u>Township 140 North, Range 96 West</u> <u>Section 22: SE/4</u>	40.00 160.00	HBP	E. B. Kelly 12.50%		North American Royalties, Inc. 75.00% Louis W. Hill, Jr. 25.00%	

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
51.	Township 140 North, Range 96 West Section 22: SE/4	6.25 160.00	HBP	North American Royalties, Inc. 12.50%		North American Royalties, Inc. 100.00%	
	Township 140 North, Range 96 West Section 22: SE/4	6.25 160.00	HBP	The Home-Stake Oil and Gas Company 18.75%		North American Royalties, Inc. 75.00% Louis W. Hill, Jr. 25.00%	
	Township 140 North, Range 96 West Section 22: SE/4	6.25 160.00	HBP	The Home-Stake Royalty Corporation 18.75%		North American Royalties, Inc. 75.00% Louis W. Hill, Jr. 25.00%	
	Township 140 North, Range 96 West Section 22: SE/4	2.50 160.00	HBP	DeWitt Landis, Jr. 9.375% Charles E. Landis 9.375%		J. Hiram Moore, Betty Jane Moore, Michael Harrison Moore, Trustees of the Moore Trust 100.00%	
	Township 140 North, Range 96 West Section 22: SE/4	2.50 160.00	HBP	Elizabeth Landis 18.75%		J. Hiram Moore, Betty Jane Moore, Michael Harrison Moore, Trustees of the Moore Trust 100.00%	
	Township 140 North, Range 96 West Section 22: SE/4	2.50 160.00	HBP	Viola L. Younger 18.75%		North American Royalties, Inc. 75.00% Louis W. Hill, Jr. 25.00%	
	Township 140 North, Range 96 West Section 22: SE/4	2.50 160.00	HBP	Johnnie L. Service 18.75%		North American Royalties, Inc. 75.00% Louis W. Hill, Jr. 25.00%	

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
51.	Township 140 North, Range 96 West Section 22: SE/4	2.50 160.00	HBP	Emna L. Purves 18.75%		North American Royalties, Inc. 75.00% Louis W. Hill, Jr. 25.00%	
	Township 140 North, Range 96 West Section 22: SE/4	6.25 160.00	HBP	The First Trust Company of Saint Paul, as Trustee for Johanna Maud Hill, Louis Fors Hill and Mari Hill 18.75%		North American Royalties, Inc. 75.00% Louis W. Hill, Jr. 25.00%	
	Township 140 North, Range 96 West Section 22: SE/4	2.50 160.00	HBP	J. Hiram Moore, Betty Jane Moore, Michael Harrison Moore, Trustees of the Moore Trust 12.50%		J. Hiram Moore, Betty Jane Moore, Michael Harrison Moore, Trustees of the Moore Trust 100.00%	
52.	Township 140 North, Range 96 West Section 22: N/2	320.00	HBP	A. L. Wolfe and Rose Wolfe 9.375% Renee Wolfe 3.125% total 12.500%		Continental Oil Company 18.7500% North American Royalties, Inc. 40.6250% Louis W. Hill, Jr. 40.6250%	Continental Oil Company 18.750% North American Royalties, Inc. 40.625% Louis W. Hill, Jr. 40.625%
53.	Township 140 North, Range 96 West Section 23: W/2	320.00	HBP	Wayne Jilek and Diane M. Jilek 9.375% Anton F. Jilek and Sophie J. Jilek 3.125% total 12.500%		Continental Oil Company 100.00%	Continental Oil Company 100.000%

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
54.	Township 140 North, Range 96 West Section 23: SW/4SE/4	40.00	HBP	Wayne Jilek and Diane M. Jilek 9.375% Anton F. Jilek and Sophie J. Jilek 3.125% total 12.500%		Continental Oil Company 100.00%	Continental Oil Company 25.0625% Lone Star Producing Company 74.9375%
	Township 140 North, Range 96 West Section 23: The south 66.00 feet of .10 the SE/4SE/4 of Section 23, Township 140 North, Range 96 West, 5th Principle Meridian, North Dakota, more particularly described as follows: Commencing at the quarter section corner on the line between Sections 23 and 26, Township 140 North, Range 96 West, 5th Principle Meridian, North Dakota, thence North 89°54', East 1318.02 feet along said line to the point of beginning; thence North 66.00 feet along the North South centerline of the SE/4 of Section 23, thence 89°54' East 66.00 feet, thence South 66.00 feet to the line between Sections 23 and 26, thence South 89° 54' West 66.00 feet along said line to point of beginning. The tract as described contains 0.10 acres.		11-30-77	USA M-3737 (ND) (Acq.) 12.50%		Continental Oil Company 100.00%	
	Township 140 North, Range 96 West Section 23: E/2SE/4, NW/4SE/4 (Less .10 acre owned by U.S.A. -- See U.S. Government Lease M-3737 (ND) (Acq.) described above.	119.90	3-19-74	Anton A. Ridl, a/k/a Anton Ridl and Eleanor M. Ridl, Anton J. Ridl and Aakoka Ridl, Raymond A. Ridl and Regina Ridl 12.50%		Lone Star Producing Company 100.00%	

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
55.	Township 140 North, Range 96 West Section 23: NE/4	80.00 160.00	HBP	Wayne Jilek and Diane M. Jilek 6.25% Anton F. Jilek and Sophie J. Jilek 6.25% total 12.50%		Continental Oil Company 100%	Continental Oil Company 50% Lone Star Producing Company 50%
	Township 140 North, Range 96 West Section 23: NE/4	80.00 160.00	8-25-75	Bank of North Dakota 12.50%		Lone Star Producing Company 100%	
56.	Township 140 North, Range 96 West Section 17: S/2, NE/4	13.50 480.00	5-28-74	Virginia C. Moseley 12.50%		North American Royalties, Inc. 75% Louis W. Hill, Jr. 25%	Continental Oil Company 4.6875% Huston Huffman 4.6875% Louis W. Hill, Jr. 1.1719%
	Township 140 North, Range 96 West Section 17: S/2, NE/4	9.00 480.00	5-28-74	Virginia C. Moseley and Frederick C. Moseley, Jr., Trustees 12.50%		North American Royalties, Inc. 75% Louis W. Hill, Jr. 25%	North American Royalties, Inc. 66.0156% Helmerich and Payne, Inc. 23.4375%
	Township 140 North, Range 96 West Section 17: S/2, NE/4	120.00 480.00	10-27-71	Joseph F. and Edith May Miller 1.7858% George F. and Evelyn M. Miller 1.7857% Jack F. and Veronica Miller 1.7857% Theresia and Jacob Kainz 1.7857% Rose and Robert Otto 1.7857% Pauline and Matt Anheluk 1.7857% Mike J. and Betty J. Miller 1.7857% total 12.5000%		North American Royalties, Inc. 100%	

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
56.	Township 140 North, Range 96 West Section 17: S/2, NE/4	120.00 480.00	10-27-71	Mike J. Miller and Betty Jane Miller	12.50%	North American Royalties, Inc. 100%	
	Township 140 North, Range 96 West Section 17: S/2, NE/4	60.00 480.00		North American Royalties, Inc.	12.50%	North American Royalties, Inc. 100%	
	Township 140 North, Range 96 West Section 17: S/2, NE/4	112.50 480.00		Helmerich and Payne, Inc.	12.50%	Helmerich and Payne, Inc. 100%	
	Township 140 North, Range 96 West Section 17: S/2, NE/4	22.50 480.00		Huston Huffman	12.50%	Huston Huffman 100%	
	Township 140 North, Range 96 West Section 17: S/2, NE/4	22.50 480.00		Continental Oil Company	12.50%	Continental Oil Company 100%	
57.	Township 140 North, Range 96 West Section 16: SW/4	4.44 160.00	5-27-74	G. G. Tunstall	12.50%	North American Royalties, Inc. 75% Louis W. Hill, Jr. 25%	North American Royalties, Inc. 75% Louis W. Hill, Jr. 25%
	Township 140 North, Range 96 West Section 16: SW/4	26.68 160.00		A. M. Pate, Jr. and Sebert L. Pate	12.50%	North American Royalties, Inc. 75% Louis W. Hill, Jr. 25%	
	Township 140 North, Range 96 West Section 16: SW/4	4.44 160.00		Warren Donaldson	12.50%	North American Royalties, Inc. 75% Louis W. Hill, Jr. 25%	

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
57.	Township 140 North, Range 96 West Section 16: SW/4	120.00 160.00	10-17-76	Anton J. Kralicek and Bertha Kralicek 12.50%		North American Royalties, Inc. 75% Louis W. Hill, Jr. 25%	
	Township 140 North, Range 96 West Section 16: SW/4	4.44 160.00	5-27-74	Charles Travis Floyd, Administrator, Gus E. Holmstrom Estate and Mary Louise Floyd and Rose C. Holstrom 12.50%		North American Royalties, Inc. 75% Louis W. Hill, Jr. 25%	
58.	Township 140 North, Range 96 West Section 16: SE/4	80.00 160.00	3-27-77	Amos Freed, DuWayne R. Freed and Arlis Freed; and Howard A. Freed and Barbara Freed 12.50%	(14) R. E. Moore and Mildred A. Moore 2.50%	Cardinal Petroleum Company 100%	Cardinal Petroleum Company 50% North American Royalties, Inc. 50%
	Township 140 North, Range 96 West Section 16: SE/4	80.00 160.00		North American Royalties, Inc. 12.50%		North American Royalties, Inc. 100%	
59.	Township 140 North, Range 96 West Section 16: NW/4	2.50 160.00	9-30-76	Home-Stake Royalty Corporation 18.75%		North American Royalties, Inc. 75% Louis W. Hill, Jr. 25%	North American Royalties, Inc. 71.48594% Louis W. Hill, Jr. 23.30781% J. Hiram Moore, Betty Jane Moore, Michael Harrison Moore, Trustees of the Moore Trust 5.20625%

(14) Payable out of Cardinal Petroleum Company's interest.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
59.	Township 140 North, Range 96 West Section 16: NW/4	2.50 160.00	9-30-76	Home-Stake Oil and Gas Company 18.75%		North American Royalties, Inc. 75% Louis W. Hill, Jr. 25%	
	Township 140 North, Range 96 West Section 16: NW/4	2.50 160.00	9-30-76	First Trust Company of Saint Paul, Trustee for Mari Hill, Louis Fors Hill and Johanna Maud Hill 18.75%		North American Royalties, Inc. 75% Louis W. Hill, Jr. 25%	
	Township 140 North, Range 96 West Section 16: NW/4	5.00 160.00	9-30-76	Moran Company 12.50%		North American Royalties, Inc. 75% Louis W. Hill, Jr. 25%	
	Township 140 North, Range 96 West Section 16: NW/4	1.66 160.00		J. Hiram Moore, Betty Jane Moore, Michael Harrison Moore, Trustees of the Moore Trust 12.50%		J. Hiram Moore, Betty Jane Moore, Michael Harrison Moore, Trustees of the Moore Trust 100%	
	Township 140 North, Range 96 West Section 16: NW/4	5.00 160.00	9-30-76	Richard W. Neuman and Lucy M. Neuman 12.50%		North American Royalties, Inc. 75% Louis W. Hill, Jr. 25%	
	Township 140 North, Range 96 West Section 16: NW/4	.84 160.00	10-15-76	Charles E. Landis 18.75%		J. Hiram Moore, Betty Jane Moore, Michael Harrison Moore, Trustees of the Moore Trust 100%	
	Township 140 North, Range 96 West Section 16: NW/4	.84 160.00	10-15-76	DeWitt Landis, Jr. 18.75%		J. Hiram Moore, Betty Jane Moore, Michael Harrison Moore, Trustees of the Moore Trust 100%	

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
59.	Township 140 North, Range 96 West Section 16: NW/4	1.66 160.00	10-15-76	Elizabeth Landis 18.75%		J. Hiram Moore, Betty Jane Moore, Michael Harrison Moore, Trustees of the Moore Trust 100%	
	Township 140 North, Range 96 West Section 16: NW/4	1.66 160.00	10-15-76	Viola L. Younger 18.75%		J. Hiram Moore, Betty Jane Moore, Michael Harrison Moore, Trustees of the Moore Trust 100%	
	Township 140 North, Range 96 West Section 16: NW/4	1.67 160.00	10-15-76	Emna L. Purves 18.75%		J. Hiram Moore, Betty Jane Moore, Michael Harrison Moore, Trustees of the Moore Trust 100%	
	Township 140 North, Range 96 West Section 16: NW/4	1.67 160.00	9-30-76	Johnnie L. Service 18.75%		North American Royalties, Inc. 75% Louis W. Hill, Jr. 25%	
	Township 140 North, Range 96 West Section 16: NW/4	80.00 160.00	9-22-76 (15)	Mary Kralicek; Joseph Kralicek, Jr. and Josephine Kralicek; Anton Kralicek and Bertha Kralicek 12.50%		North American Royalties, Inc. 75% Louis W. Hill, Jr. 25%	
	Township 140 North, Range 96 West Section 16: NW/4	5.00 160.00	9-30-76	Johanna Rohrich 12.50%		North American Royalties, Inc. 75% Louis W. Hill, Jr. 25%	
	Township 140 North, Range 96 West Section 16: NW/4	40.00 160.00	3-08-77	George Gabbert and Emma Gabbert 12.50%		North American Royalties, Inc. 75% Louis W. Hill, Jr. 25%	

(15) Mary Kralicek has a life estate only.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
59.	Township 140 North, Range 96 West Section 16: NW/4	5.00 160.00	10-26-76	Robert L. Striebel and Betty M. Striebel 12.50%		North American Royalties, Inc. 75% Louis W. Hill, Jr. 25%	
	Township 140 North, Range 96 West Section 16: NW/4	2.50 160.00		North American Royalties, Inc. 12.50%		North American Royalties, Inc. 100%	
60.	<u>COMMUNITIZED TRACT:</u>						
	Township 140 North, Range 96 West Section 15: SW/4	4.50 160.00	7-14-74	Virginia C. Moseley 12.50%	(14) North American Royalties, Inc. 6.25%	Cardinal Petroleum Company 50% Louis W. Hill, Jr. 50%	Cardinal Petroleum Company 69.92188% Louis W. Hill, Jr. 13.67187% Huston Huffman 2.34375%
	Township 140 North, Range 96 West Section 15: SW/4	3.00 160.00	7-14-74	Virginia C. Moseley and Frederick S. Moseley, Jr., Trustees 12.50%	(14) North American Royalties, Inc. 6.25%	Cardinal Petroleum Company 50% Louis W. Hill, Jr. 50%	Helmerich & Payne, Inc. 11.71875% Continental Oil Company 2.34375%
	Township 140 North, Range 96 West Section 15: SW/4	40.00 160.00	7-17-77	R. E. Moore North American Royalties, Inc. 12.50%	(14) North American Royalties, Inc. 6.25%	Cardinal Petroleum Company 50% Louis W. Hill, Jr. 50%	
	Township 140 North, Range 96 West Section 15: SW/4	40.00 160.00	7-21-77	Joseph Kralicek, Jr. and Josephine Kralicek 12.50%	(14) North American Royalties, Inc. 6.25%	Cardinal Petroleum Company 50% Louis W. Hill, Jr. 50%	

(14) Overriding royalty payable out of Cardinal Petroleum Company's working interest.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
60.	Township 140 North, Range 96 West Section 15: SW/4	7.50 160.00		Huston Huffman 12.50%		* Huston Huffman	
	Township 140 North, Range 96 West Section 15: SW/4	20.00 160.00	7-26-72	North American Royalties, Inc. 12.50%		Cardinal Petroleum Company 100%	
	Township 140 North, Range 96 West Section 15: SW/4	37.50 160.00		Helmerich & Payne, Inc. 12.50%		* Helmerich & Payne, Inc. 100%	
	Township 140 North, Range 96 West Section 15: SW/4	7.50 160.00		Continental Oil Company 12.50%		* Continental Oil Company 100%	
	Township 140 North, Range 96 West Section 15: NW/4	160.00 160.00	7-29-72	Robert Kadrmas and Angeline Kadrmas 12.50%		Cardinal Petroleum Company 100%	
61.	Township 140 North, Range 96 West Section 15: E/2	57.142855 320.000000	HBP	Jacob Schank and Kathryn Schank 12.50%		(17)North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	North American Royalties, Inc. 38.50447% Louis W. Hill, Jr. 26.00447% J. Hiram Moore, Betty Jane Moore, Michael Harrison Moore, Trustees of the Moore Trust 3.57142% Cardinal Petroleum Company 31.91964%
	Township 140 North, Range 96 West Section 15: E/2	5.714285 320.000000	HBP	The Home-Stake Royalty Corporation 18.75%		(17)North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	

* Working Interest Revenue payable to Cardinal Petroleum Company until Development Drilling Costs are recouped (Legal Question).

(17) North American Royalties, Inc. and Louis W. Hill, Jr. lease in tract are subject to litigation.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
61.	<u>Township 140 North, Range 96 West</u> <u>Section 15: E/2</u>	<u>5.714285</u> <u>320.000000</u>	HBP	The Home-Stake Oil and Gas Company 18.75%		(17)North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	
	<u>Township 140 North, Range 96 West</u> <u>Section 15: E/2</u>	<u>5.714285</u> <u>320.000000</u>	HBP	First Trust Company of Saint Paul, as Trustee for Johanna Maud Hill, Louis Fors Hill and Mari Hill 18.75%		(17)North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	
	<u>Township 140 North, Range 96 West</u> <u>Section 15: E/2</u>	<u>22.857160</u> <u>320.000000</u>	HBP	E. O. Hancock 12.50%		(17)North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	
	<u>Township 140 North, Range 96 West</u> <u>Section 15: E/2</u>	<u>2.857145</u> <u>320.000000</u>	HBP	Frank Rummel, Jr. and (16)R. E. Moore Margaret Rummel 18.75%	2.50%	(17)North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	
	<u>Township 140 North, Range 96 West</u> <u>Section 15: E/2</u>	<u>5.714285</u> <u>320.000000</u>	HBP	Sebastian A. Mischel and Odessa Mischel 12.50%		(17)North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	
	<u>Township 140 North, Range 96 West</u> <u>Section 15: E/2</u>	<u>2.857145</u> <u>320.000000</u>	HBP	John A. Hoff and Irene M. Hoff 12.50%		(17)North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	

(6)Royalty payable out of working interest of North American Royalties, Inc. and Louis W. Hill, Jr.

(17) North American Royalties, Inc. and Louis W. Hill, Jr. leases in tract are subject to litigation.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
61.	<u>Township 140 North, Range 96 West</u> <u>Section 15: E/2</u>	<u>5.714285</u> 320.000000	HBP	Tillie Fischer 12.50%		(17) North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	
	<u>Township 140 North, Range 96 West</u> <u>Section 15: E/2</u>	<u>5.714285</u> 320.000000	HBP	E. F. Rakowski and Gladys M. Rakowski 12.50%		(17) North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	
	<u>Township 140 North, Range 96 West</u> <u>Section 15: E/2</u>	<u>5.714285</u> 320.000000	HBP	Cardinal Petroleum Company 12.50%		(17) North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	
	<u>Township 140 North, Range 96 West</u> <u>Section 15: E/2</u>	<u>5.714285</u> 320.000000	HBP	George P. Ficek 12.50%		(17) North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	
	<u>Township 140 North, Range 96 West</u> <u>Section 15: E/2</u>	<u>3.857150</u> 320.000000	HBP	R. L. Higgins and Wilma T. Higgins 12.50%		(17) North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	
	<u>Township 140 North, Range 96 West</u> <u>Section 15: E/2</u>	<u>.828570</u> 320.000000	HBP	J. M. Schultz Investment Company 12.50%		(17) North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	

(17) North American Royalties, Inc. and Louis W. Hill, Jr. leases in tract are subject to litigation.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
61.	<u>Township 140 North, Range 96 West</u> <u>Section 15: E/2</u>	<u>1.028570</u> <u>320.000000</u>	HBP	James E. Burke 12.50%		(17) North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	
	<u>Township 140 North, Range 96 West</u> <u>Section 15: E/2</u>	<u>3.809520</u> <u>320.000000</u>	HBP	Viola L. Younger 12.50%		(17) North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	
	<u>Township 140 North, Range 96 West</u> <u>Section 15: E/2</u>	<u>3.809520</u> <u>320.000000</u>	HBP	Emna L. Purves 18.75%		(17) North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	
	<u>Township 140 North, Range 96 West</u> <u>Section 15: E/2</u>	<u>3.809520</u> <u>320.000000</u>	HBP	Johnnie L. Service and C. T. Service, her husband 18.75%		(17) North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	
	<u>Township 140 North, Range 96 West</u> <u>Section 15: E/2</u>	<u>6.428570</u> <u>320.000000</u>	HBP	William Rummel 12.50%		(17) North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	

(17) North American Royalties, Inc. and Louis W. Hill, Jr. leases in tract are subject to litigation.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
61.	<u>Township 140 North, Range 96 West</u> <u>Section 15: E/2</u>	<u>5.714285</u> 320.000000	HBP	Cardinal Petroleum Company 12.50%		(17) North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	
	<u>Township 140 North, Range 96 West</u> <u>Section 15: E/2</u>	<u>5.714285</u> 320.000000	HBP	Julian Toskey and Pearl Toskey 12.50%		(17) North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	
	<u>Township 140 North, Range 96 West</u> <u>Section 15: E/2</u>	<u>1.142855</u> 320.000000	HBP	Norbert J. Muggli and Doris Muggli 18.75%		Cardinal Petroleum Company 100%	
	<u>Township 140 North, Range 96 West</u> <u>Section 15: E/2</u>	<u>1.142855</u> 320.000000	HBP	Ward Kirby and Virginia J. Kirby 18.75%		Cardinal Petroleum Company 100%	
	<u>Township 140 North, Range 96 West</u> <u>Section 15: E/2</u>	<u>22.000000</u> 320.000000	HBP	Theodore Kellogg and Kathleen Kellogg 18.75%		Cardinal Petroleum Company 100%	
	<u>Township 140 North, Range 96 West</u> <u>Section 15: E/2</u>	<u>20.714290</u> 320.000000	HBP	Shirley Ruth Shapiro and Sidney K. Shapiro 18.75%		Cardinal Petroleum Company 100%	
	<u>Township 140 North, Range 96 West</u> <u>Section 15: E/2</u>	<u>20.714290</u> 320.000000	HBP	Evelyn Margaret Rauch and Lloyd Rauch 18.75%		Cardinal Petroleum Company 100%	

(17) North American Royalties, Inc. and Louis W. Hill, Jr. leases in tract are subject to litigation.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
61.	<u>Township 140 North, Range 96 West</u> <u>Section 15: E/2</u>	<u>20.000000</u> <u>320.000000</u>	HBP	D. E. Balch 18.75%		Cardinal Petroleum Company 100%	
	<u>Township 140 North, Range 96 West</u> <u>Section 15: E/2</u>	<u>4.285720</u> <u>320.000000</u>	HBP	Janet M. Reichert 18.75%		Cardinal Petroleum Company 100%	
	<u>Township 140 North, Range 96 West</u> <u>Section 15: E/2</u>	<u>12.142860</u> <u>320.000000</u>	HBP	Margaret H. Rummel 18.75%		Cardinal Petroleum Company 100%	
	<u>Township 140 North, Range 96 West</u> <u>Section 15: E/2</u>	<u>3.809520</u> <u>320.000000</u>	HBP	J. Hiram Moore, Betty Jane Moore, Michael Harrison Moore, Trustees of the Moore Trust 12.50%		J. Hiram Moore, Betty Jane Moore, Michael Harrison Moore, Trustees of the Moore Trust 100%	
	<u>Township 140 North, Range 96 West</u> <u>Section 15: E/2</u>	<u>3.809520</u> <u>320.000000</u>	HBP	Elizabeth Landis 18.75%		J. Hiram Moore, Betty Jane Moore, Michael Harrison Moore, Trustees of the Moore Trust 100%	
	<u>Township 140 North, Range 96 West</u> <u>Section 15: E/2</u>	<u>3.809520</u> <u>320.000000</u>	HBP	Dewitt Landis, Jr. Charles E. Landis 9.375% 9.375%		J. Hiram Moore, Betty Jane Moore, Michael Harrison Moore, Trustees of the Moore Trust 100%	
	<u>Township 140 North, Range 96 West</u> <u>Section 15: E/2</u>	<u>40.000000</u> <u>320.000000</u>	HBP	North American Royalties, Inc. 12.50%		(17) North American Royalties, Inc. 100%	

(17) North American Royalties, Inc. and Louis W. Hill, Jr. leases in tract are subject to litigation.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
62.	Township 140 North, Range 96 West Section 14: SW/4, W/2NW/4	42.857145 240.000000	HBP	Jacob Schank and Kathryn Schank 12.50%		(17) North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	Cardinal Petroleum Company 48.93973% Louis W. Hill, Jr. 19.50335% North American Royalties, Inc. 28.87835%
	Township 140 North, Range 96 West Section 14: SW/4, W/2NW/4	4.285715 240.000000	HBP	The Home-Stake Royalty Corporation 18.75%		(17) North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	J. Hiram Moore, Betty Jane Moore, Michael Harrison Moore, Trustees of the Moore Trust 2.67857%
	Township 140 North, Range 96 West Section 14: SW/4, W/2NW/4	4.285715 240.000000	HBP	First Trust Company of Saint Paul, Trustee for Johanna Maud Hill, Louis Fors Hill and Mari Hill 18.75%		(17) North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	
	Township 140 North, Range 96 West Section 14: SW/4, W/2NW/4	17.142840 240.000000	HBP	E. O. Hancock 12.50%		(17) North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	
	Township 140 North, Range 96 West Section 14: SW/4, W/2NW/4	4.285715 240.000000	HBP	The Home-Stake Oil and Gas Company 18.75%		(17) North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	
	Township 140 North, Range 96 West Section 14: SW/4, W/2NW/4	2.142855 240.000000	HBP	Frank Rummel, Jr. and (16) R. E. Moore Margaret Rummel 18.75%	2.50%	(17) North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	
	Township 140 North, Range 96 West Section 14: SW/4, W/2NW/4	4.285715 240.000000	HBP	Sebastian A. Mischel and Odessa Mischel 12.50%		(17) North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	

(17) Working interest revenue payable to Cardinal Petroleum Company 94.8108% and J. Hiram Moore, Betty Jane Moore and Michael Harrison Moore, Trustees of the Moore Trust 5.1892% until development costs are recovered. North American Royalties, Inc. and Louis W. Hill, Jr. leases are subject to litigation.

(16) Royalty payable out of working interest of North American Royalties, Inc. and Louis W. Hill Jr.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
62.	Township 140 North, Range 96 West Section 14: SW/4, W/2NW/4	2.142855 240.000000	HBP	John A. Hoff and Irene M. Hoff 12.50%		(17) North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	
	Township 140 North, Range 96 West Section 14: SW/4, W/2NW/4	4.285715 240.000000	HBP	Tillie Fischer 12.50%		(17) North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	
	Township 140 North, Range 96 West Section 14: SW/4, W/2NW/4	4.285715 240.000000	HBP	E. F. Rakowski and Gladys M. Rakowski 12.50%		(17) North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	
	Township 140 North, Range 96 West Section 14: SW/4, W/2NW/4	4.285715 240.000000	HBP	Cardinal Petroleum Company 12.50%		(17) North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	
	Township 140 North, Range 96 West Section 14: SW/4, W/2NW/4	4.285715 240.000000	HBP	George P. Ficek 12.50%		(17) North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	
	Township 140 North, Range 96 West Section 14: SW/4, W/2NW/4	2.892860 240.000000	HBP	R. L. Higgins and Wilma T. Higgins 12.50%		(17) North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	

(17) Working interest revenue payable to Cardinal Petroleum Company 94.8108% and J. Hiram Moore, Betty Jane Moore, and Michael Harrison Moore, Trustees of the Moore Trust 5.1892% until development costs are recovered. North American Royalties, Inc. and Louis W. Hill, Jr. leases are subject to litigation.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
62.	Township 140 North, Range 96 West Section 14: SW/4, W/2NW/4	.621430 240.000000	HBP	J. M. Schultz Investment Company	12.50%	(17) North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	
	Township 140 North, Range 96 West Section 14: SW/4, W/2NW/4	.771430 240.000000	HBP	James E. Burke	12.50%	(17) North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	
	Township 140 North, Range 96 West Section 14: SW/4, W/2NW/4	2.857147 240.000000	HBP	Viola L. Younger	12.50%	(17) North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	
	Township 140 North, Range 96 West Section 14: SW/4, W/2NW/4	2.857147 240.000000	HBP	Emna L. Purves	18.75%	(17) North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	
	Township 140 North, Range 96 West Section 14: SW/4, W/2NW/4	2.857146 240.000000	HBP	Johnnie L. Service and C. L. Service, her husband	18.75%	(17) North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	

(17) Working interest revenue payable to Cardinal Petroleum Company 94.8108% and J. Hiram Moore, Betty Jane Moore, and Michael Harrison Moore, Trustees of the Moore Trust 5.1892% until development costs are recovered. North American Royalties, Inc. and Louis W. Hill, Jr. leases are subject to litigation.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
62.	Township 140 North, Range 96 West Section 14: SW/4, W/2NW/4	4.821430 240.000000	HBP	William Rummel 12.50%		(17) North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	
	Township 140 North, Range 96 West Section 14: SW/4, W/2NW/4	4.285715 240.000000	HBP	Cardinal Petroleum Company 12.50%		(17) North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	
	Township 140 North, Range 96 West Section 14: SW/4, W/2NW/4	4.285715 240.000000	HBP	Julian Toskey and Pearl Toskey 12.50%		(17) North American Royalties, Inc. 50% Louis W. Hill, Jr. 50%	
	Township 140 North, Range 96 West Section 14: SW/4, W/2NW/4	.857145 240.000000	HBP	Norbert J. Muggli and Doris Muggli 18.75%		Cardinal Petroleum Company 100%	
	Township 140 North, Range 96 West Section 14: SW/4, W/2NW/4	.857145 240.000000	HBP	Ward Kirby and Virginia J. Kirby 18.75%		Cardinal Petroleum Company 100%	
	Township 140 North, Range 96 West Section 14: SW/4, W/2NW/4	16.500000 240.000000	HBP	Theodore Kellogg and Kathleen Kellogg 18.75%		Cardinal Petroleum Company 100%	
	Township 140 North, Range 96 West Section 14: SW/4, W/2NW/4	15.535710 240.000000	HBP	Shirley Ruth Shapiro and Sidney K. Shapiro 18.75%		Cardinal Petroleum Company 100%	

(17) Working interest revenue payable to Cardinal Petroleum Company 94.8108% and J. Hiram Moore, Betty Jane Moore, and Michael Harrison Moore, Trustees of the Moore Trust 5.1892% until development costs are recovered. North American Royalties, Inc. and Louis W. Hill, Jr. leases are subject to litigation.

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
62.	Township 140 North, Range 96 West Section 14: SW/4, W/2NW/4	15.535710 240.000000	HBP	Evelyn Margaret Rauch and Lloyd Rauch 18.75%		Cardinal Petroleum Company 100%	
	Township 140 North, Range 96 West Section 14: SW/4, W/2NW/4	15.000000 240.000000	HBP	D. E. Balch 18.75%		Cardinal Petroleum Company 100%	
	Township 140 North, Range 96 West Section 14: SW/4, W/2NW/4	3.214280 240.000000	HBP	Janet M. Reichert 18.75%		Cardinal Petroleum Company 100%	
	Township 140 North, Range 96 West Section 14: SW/4, W/2NW/4	9.107140 240.000000	HBP	Margaret H. Rummel 18.75%		Cardinal Petroleum Company 100%	
	Township 140 North, Range 96 West Section 14: SW/4, W/2NW/4	2.857145 240.000000	HBP	J. Hiram Moore, Betty Jane Moore, Michael Harrison Moore, Trustees of the Moore Trust 12.50%		J. Hiram Moore, Betty Jane Moore, Michael Harrison Moore, Trustees of the Moore Trust 100%	
	Township 140 North, Range 96 West Section 14: SW/4, W/2NW/4	2.857145 240.000000	HBP	Elizabeth Landis 18.75%		J. Hiram Moore, Betty Jane Moore, Michael Harrison Moore, Trustees of the Moore Trust 100%	
	Township 140 North, Range 96 West Section 14: SW/4, W/2NW/4	2.857145 240.000000	HBP	De Witt Landis, Jr. 9.375% Charles E. Landis 9.375%		J. Hiram Moore, Betty Jane Moore, Michael Harrison Moore, Trustees of the Moore Trust 100%	
	Township 140 North, Range 96 West Section 14: SW/4, W/2NW/4	30.000000 240.000000	HBP	North American Royalties, Inc. 12.50%		North American Royalties, Inc. 100%	
	Township 140 North, Range 96 West Section 14: E/2NW/4	60.000000 80.000000	HBP	John J. Wolfe 12.50%	Continental Oil Company 6.25%	Cardinal Petroleum Company 100%	

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
62.	Township 140 North, Range 96 West Section 14: E/2NW/4	20.00 80.00	HBP	Arthur J. Wolfe 12.50%	Continental Oil Company 6.25%	Cardinal Petroleum Company 100%	
63.	Township 140 North, Range 96 West Section 14: E/2	80.00 320.00	11- 4-74	John J. Wolfe 12.50%		Continental Oil Company 100%	Continental Oil Company 100%
	Township 140 North, Range 96 West Section 14: E/2	80.00 320.00	11- 4-74	Arthur J. Wolfe 12.50%		Continental Oil Company 100%	
	Township 140 North, Range 96 West Section 14: E/2	160.00 320.00	10-13-74	The Federal Land Bank of Saint Paul 12.50%		Continental Oil Company 100%	
64.	Township 139 North, Range 97 West Section 3: SE/4	76.66667 160.00000	2-20-76	H. S. Swan .54348% W. F. Eisenberg 1.08696% E. Orcutt 1.08695% Paul Harral .54348% Cecil Kelsey .54348% Marshall Cator 1.08695% George A. Broome 1.63043% E. B. Kelly 5.97824% total 12.50000%		Shell Oil Company 100%	Shell Oil Company 98.02735% Henry Kadrmas 1.899375% Patsy Ann O'Gilvy } Neal O'Gilvy } .07890% Evelyn West } Bill West }
	Township 139 North, Range 97 West Section 3: SE/4, except that part of the Stark County, North Dakota road formerly U.S. Highway No. 10 located in the SE/4 of Section 3.	3.20708 153.94000	1-20-76	Patsy Ann O'Gilvy } Neal O'Gilvy } 12.50% Evelyn West } Bill West }		Shell Oil Company 100%	

Tract No.	Description Of Tract	No. of Acres	Expiration Date of Lease	Land Owners and Royalty Rate	Name of Owner and Percentage of Overriding Royalty Under Option Agreement or Assignment	Working Interest Owner and Percentage of Interest	Working Interest By Tracts
64.	Township 139 North, Range 97 West Section 3: SE/4, except that part of the Stark County, North Dakota road formerly U.S. Highway No. 10 located in the SE/4 of Section 3.	76.97 153.94	9-16-74	Henry Kadrmas 12.50%		Shell Oil Company 100%	
	Township 139 North, Range 97 West Section 3: All that part of the Stark County, North Dakota road formerly U.S. Highway No. 10 located in the SE/4 of Section 3.	.12625 6.06000		Patsy Ann } O'Gilvy } Neal O'Gilvy } 12.50% Evelyn West } Bill West }		Patsy Ann } O'Gilvy } Neal O'Gilvy } Evelyn West } Bill West } 100%	
	Township 139 North, Range 97 West Section 3: All that part of the Stark County, North Dakota road formerly U.S. Highway No. 10 located in the SE/4 of Section 3.	3.03000 6.06000		Henry Kadrmas 12.50%		Henry Kadrmas 100%	
65.	Township 139 North, Range 96 West Section 5: Lots 1, 2, 3, and 4, S/2N/2	323.78	HBP	State of North Dakota 12.50%		Union Oil Company of California 100%	Union Oil Company of California 100%
<u>TOTAL ACRES</u>		<u>16,308.42</u>					

VOLUME I
(Revised)

ENGINEERING REPORT
DICKINSON-WEST DICKINSON FIELD
STARK COUNTY, NORTH DAKOTA

October, 1971

CONTINENTAL OIL COMPANY

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VOLUME I
(Revised)

ENGINEERING REPORT
DICKINSON-WEST DICKINSON FIELD
STARK COUNTY, NORTH DAKOTA

OBJECT:

The purpose of Volume I of this report is to analyze primary performance, define the productive limits of the field, and develop possible unitization parameters.

CONCLUSIONS:

- (1) The original oil in place in the Heath "A" and "B" sands was 55,574,300 STBO.
- (2) The producing mechanism in the reservoir was by fluid expansion above the saturation pressure of 2147 psi and by solution gas drive thereafter, since no water drive is apparent.
- (3) The original reservoir pressure for the Heath "A" and "B" sands was 3475 psi at a datum of -5,300'.
- (4) Based on the May, 1970 pressure survey, the average reservoir pressure, weighted on a reservoir volume basis, was 875 psi.
- (5) Cumulative production as of September 1, 1971 was 6,229,991 STBO.
- (6) Primary reserves as of September 1, 1971 are estimated at 3,967,800 STBO.
- (7) Ultimate primary production is estimated at 10,197,791 STBO, or 18.4% of initial oil in place.

DISCUSSION:

Geology

Dickinson and West Dickinson Fields are located in Township 139 and 140 North and Ranges 96 and 97 West, Stark County, North Dakota on the south flank of the Williston Basin.

Dickinson and West Dickinson Fields produce from two Heath sand intervals of lower Pennsylvanian Age. The "A", upper sand, and "B", lower sand, are separated by a thin zone of black fissile shale which grades to a black argillaceous lime in some wells.

The environment of deposition is a near-shore, lagoon and marsh complex. This is deduced from the abundance of black, carbonaceous shales which often contain ostracods and linguloid brachiopods that are known to inhabit shallow, brackish water. These shales grade into thin coal beds. The black shales represent the reducing lagoonal environments and the reddish-brown shales and mudstones are from the nearby oxidizing environments. The sandstones appear to be beach deposits. They are always capped by a thin lignitic shale or coal which probably represents the progradation of the lagoon-marsh environment over the top of the beach as the beach progrades seaward. The anhydrite looks like the sabkha type as it is nodular and contains contorted shale streaks and laminations.

The Heath reservoir is a stratigraphically trapped oil accumulation with the only relationship between reservoir and structure being the position of the oil-water contact in the "B" sand on the north flank of the field.

"A" Zone

The "A" sand is found to be very thin and erratic on the edges of the fields. In the south and west areas this sand is thin but does correlate well with the better developed area of the field. Correlations show the sand to be consistently located in the lower part of the "A" zone. The "A" sand within the northeast part of the field is very thin and completely absent in some wells in this area. The sands, when present in the northeast, occupy various positions within the "A" zone causing it to be difficult to determine if they are connected in a common sand body.

"B" Zone

The "B" sand is quite thin in some wells, but does correlate well as a continuous sand unit. The "B" sand thins in both a northward and southward direction. The Wolfe No. 1, SW-SE Section 14, T140N, R96W, is the only well cored through the "B" zone that encountered no sand. The sand had become a sandy limestone. The "B" sand has low permeability (6 feet of NEP averaged 23 md) to the west in Zander No. 22-33, SE-NW Section 33, T140N, R97W. Dry holes have significantly limited the potential productive area to the northeast.

Development History

The Dickinson Heath Field was discovered in 1958 with the completion of Kadmas No. 1 (NE/4-SE/4 Section 31, T140N, R96W). Development was slow with only five productive wells being completed through 1965. These wells were all drilled on adjoining 160 acre tracts. In November, 1966, Zahradnik No. 1, SE/4-SE/4 Section 34, T140N, R97W, was completed approximately three miles west of the older productive area in what is now known as the West Dickinson Field.

In September, 1959 the North Dakota State Industrial Commission established 160 acre spacing for the Dickinson Field. In February, 1967 a temporary 320 acre spacing was ordered for the West Dickinson Field. This order was made permanent in March, 1968. During June, 1967 320 acre spacing was ordered for the northeast portion of the Dickinson Field.

Development accelerated in 1967 when 22 productive wells were completed. Three producers were completed in 1968, four in 1969, five in 1970, and two in 1971. At the present time there are 42 producing wells, 13 plugged and abandoned wells, and one temporary shut-in well.

Primary Production

As of September 1, 1971, cumulative production from the total field was 6,229,991 STBO. The North Dakota Proration Schedule and Oil Production Report and production data furnished by the operators were the sources of production data. Primary reserves, as of September 1, 1971, are estimated at 3,967,800 STBO. The resulting ultimate primary recovery is 10,197,791 STBO, or 18.4% of the original oil in place. Based on the reservoir data tabulated on Table 1, the original oil in place was calculated to be 55,574,300 STBO. A tabulation of cumulative oil produced, primary reserves, and ultimate primary production by well is shown on Table 2.

Primary reserves were estimated by extrapolating individual well performance decline curves to an economic limit of 12 BOPD. The extrapolation of these curves was based on stabilized portions of the well's performance, with as much production history as possible being considered. Due to the short period of production history for some of the newer wells, a representative decline rate has not been established. Decline rates from offset wells were assigned to these wells. The individual well performance decline curves with extrapolations are shown on Figures 1 through 42. The wells are arranged by tract numbers as shown on Figure 43. The decline rates are also indicated. The equation used to calculate the primary reserves from the decline curves was:

$$\text{Reserves} = \frac{(\text{Initial Rate} - \text{Rate at Economic Limit})}{\text{Decline Factor}} 30.4$$

Both the initial rate and rate at economic limit are in BOPD. The initial rate was the September, 1971 rate as indicated by each decline curve. The decline factor is calculated as follows:

$$\text{Decline Factor} = \ln \left[12 \sqrt{1 - \text{yearly decline rate}} \right]$$

To calculate the economic limit, a current operating cost (less taxes) of \$796 per well month was used. The net revenue per barrel of crude was calculated as follows:

\$ 3.060	Average Gross Crude Price
- .450	Less Trucking Charge
- .326	Less 12.5% Royalty
- .114	Less Production Tax (5% of value after trucking charges and royalty)
\$ 2.170	Net Revenue Per Barrel of Oil

The economic limit was calculated as follows:

$$\text{Economic Limit} = \frac{\$796 \text{ per well month}}{\$2.170 \text{ per BO}} = 367 \text{ BOPM} = 12 \text{ BOPD}$$

The high operating cost is primarily the result of the 90° F. pour point of the Heath crude. The crude tends to build-up a paraffin-like substance on the tubing and flowlines when it cools and sets up. Due to this problem, each well has its own tank battery and the crude has to be trucked out.

The producing mechanism in the reservoir was by fluid expansion above the saturation pressure of 2147 psi and by solution gas drive thereafter. There is no apparent water drive. Based on the May, 1970 pressure survey, the average reservoir pressure was approximately 875 psi.

Reservoir Data

The productive portion of the Heath "A" and "B" sands covers 11,639 surface acres and contains 69,252 acre-feet of net oil sand. The above mentioned area, 11,639 acres, was determined from a composite outline of the productive limits of the "A" and "B" sands. The composite productive limit can be seen on Figure 43, Tract and Ownership Map. On an individual basis, the productive portion of the "A" sand covers 5,694 surface acres and contains 16,520 acre-feet of net oil sand. The productive portion of the "B" sand covers 10,314 surface acres and contains 52,732 acre-feet of net oil sand. The above figures were obtained from Figures 44 and 45, Heath "A" and "B" net oil sand isopach maps, by use of a 10 acre grid overlay. The actual gridding was done on isopach maps with a scale of 1" = 1,000'.

In determining net pay for the individual wells, essentially the same procedure established by the original Engineering Committee was used. This procedure is summarized as follows:

WELLS FOR WHICH CORE ANALYSIS IS AVAILABLE THROUGH PAY ZONE:

Must have 10+% porosity and 1+ md permeability and 10+% oil saturation.

WELLS WITH LOGS ONLY:

Must have Sonic measured porosity of 10+%, based on 19,500 V_m and 5,550 V_f . These velocity values correspond with 65 μ sec at 10% porosity. Also, the Gamma Ray value must be less than 48 API units.

QUALIFICATIONS:

If a well has both core analysis and logs, core analysis will be given preference.

Several wells had only Gamma Ray-Neutron logs. A semi-log plot of porosity versus API Neutron units was made for each well to determine a Neutron unit value corresponding to 10% porosity. A shale section and a tight zone were assumed to have porosities of 38% and 2%, respectively. These two points were used to establish the curve. Individual well net pay picks are summarized on Table 3. To calculate porosity from the one Formation Density log, a grain density and fluid density of 2.68 grams/cc and 1.0 gram/cc, respectively, were used.

The oil-water contact is difficult to pick in the Heath sand because the productive reservoir is controlled more by permeability pinch out than by a water level. At the edge of the reservoir some wells have recovered water on DST's at various subsea depths. However, because of the oil-water transition zone in these lower quality sands (10-11% porosity), an exact contact is difficult to pick. The only well with sufficient quality pay to pick an oil-water contact with any degree of confidence is the Karsky-Buresh No. 1 (SE/4 Section 26, T140N, R97W). This well has nine feet of net "B" sand with an average porosity of 17.2% and an average permeability of 164 md. An examination of the core data indicates that the oil-water contact in this well is no higher than 7,949' (equivalent to a log depth of 7,953'). At this point the core water saturation increases from 28.5% to 58.2%. It is possible the oil-water contact could be lower based on core data, but definitely not any higher than 7,949' (7,953' log depth), or 5,408' subsea. It is difficult to see the contact on the log resistivity curve, but it shows up very well on the conductivity curve at a depth of 7,953'. With the top of the sand at 7,951', both log and core data support an oil-water contact at -5,408', and a net oil sand thickness of 2'.

Figure 46 is a structure map drawn on top of the Heath "B" sand porosity. In those wells which had no net "B" sand, the top of the "B" sand, as indicated on the Gamma Ray log, was used.

The original reservoir pressure of 3475 psi for both sands was obtained from Kadmas No. 1, NE/4-SE/4 Section 31, T140N, R96W, on February 9, 1958. This pressure, based on a datum of -5,300', was measured with a bottom hole pressure bomb. P.V.T. analysis indicated a saturation pressure of 2147 psi. Figure 47 is an isobaric map prepared from pressure

data obtained during the May, 1970 pressure survey. Based on this survey, the average reservoir pressure (both sands) was 875 psi. This is a weighted average pressure based on psi per acre foot.

Unitization

Potential participation parameters were calculated for guidance in Unit negotiations. These parameters are summarized by working interest owners (Table 4) and by tract (Table 5). Tract numbers and tract working interest ownership are shown on Figure 43. The proposed Unit boundary is also shown on Figure 43. A summary of the original input data is shown on Table 6.

ADDENDUM TO VOLUME I

June 30, 1972

N O T I C E N O T I C E N O T I C E

TABLE 4 - "PARTICIPATION PARAMETERS - PERCENTAGE BY WORKING INTEREST OWNER" - The Table is not correct because of legal problems, the leasing of unleased mineral interests, well payouts, reversion of interests after non-consent penalties, etc.

TABLE 5 - "PARTICIPATION PARAMETERS - PERCENTAGE BY TRACT" - This Table is correct as of the date of this notice and has been used in calculating tract participation in the Plan of Unitization.

CONTINENTAL OIL COMPANY

UNIT OPERATOR

PROPOSED DICKINSON HEATH SAND UNIT

TABLE 1
Reservoir Data

<u>Data</u>	<u>Value</u>	<u>Source</u>
Average Porosity	14.8 %	Core Analyses
Average Permeability	194 md	Core Analyses
Irreducible Water Saturation	22 %	Formation Evaluation Report by Continental Oil Company R&D, dated 3-3-67
Initial Formation Volume Factor	1.116	PVT Analysis
Saturation Pressure	2147 psi	PVT Analysis
Initial Reservoir Pressure	3475 psi	Bottom Hole Pressure Bomb, Kadmas No. 1, NE/4-SE/4 Section 31, T140N, R96W, 2-9-58
May 1970 Reservoir Pressure	875 psi	Weighted Average (psi/A-F) from May 1970 Pressure Survey
Net Oil Sand Acre-Feet		
"A" Sand	16,520 A-F	Heath "A" and "B" Sand Iso- pach Maps revised 10-11-71
"B" Sand	52,732 A-F	
Total	69,252 A-F	
Productive Surface Area		
"A" Sand	5,694 Acres	Heath "A" and "B" Sand Iso- pach Maps revised 10-11-71
"B" Sand	10,314 Acres	
Composite Productive Surface Area ("A" & "B")	11,639 Acres	Heath "A" and "B" Sand Iso- pach Maps revised 10-11-71
Average Net Oil Sand Thickness		
"A" Sand	2.9 Feet	
"B" Sand	5.1 Feet	

TABLE 2

DICKINSON-WEST DICKINSON FIELD
Primary Production Statistics

Tract Number	Operator, Lease and Well Number	Cumulative Oil 9-1-71	Remaining Primary 9-1-71	Ultimate Primary
2	Cleary-Pazourek 21-3	58,336	10,500	68,836
3	Shell-Steffan 22-2	47,438	22,500	69,938
7	Shell-Vozabal 44-33	72,529	69,300	141,829
9	Continental-Zander-Anderson 1	120,169	58,900	179,069
10	Continental-Zahradnik 1	450,953	174,800	625,753
11	Shell-Steffan 44-35	153,479	66,000	219,479
12	Continental-Zahradnik 2	274,250	173,300	447,550
13	Continental-Kadmas-State 2	126,157	143,000	269,157
14	Continental-Karsky-State 1	419,658	190,400	610,058
15	Superior-Kadmas 1	168,742	-	168,742
16	Cardinal-Frenzel 1	147,129	23,000	170,129
17	Continental-Frenzel 1	187,832	51,100	238,932
19	Union-State 1	75,505	65,800	141,305
20	Superior-Kalanek 1	162,235	3,800	166,035
21	Cardinal-Filipi 7-32	51,797	3,100	54,897
23	Continental-Kosteletzky 1	78,922	31,300	110,222
24	Continental-Zahradnik 3	116,093	165,100	281,193
26	Calvert-Buresh-Zahradnik 1	64,099	29,900	93,999
27	Continental-Karsky-Buresh 1	352,617	123,600	476,217
28	Continental-Kadmas 1	314,323	165,200	479,523
31	Continental-Frenzel 2	364,028	241,700	605,728
32	Cardinal-Ridl 1	62,205	-	62,205
33	Superior-Zahradnik 1	227,774	135,100	362,874
34	Continental-Ridl 1	324,008	200,500	524,508
35	Superior-Kalanek 2	30,906	-	30,906
36	Continental-Filipi 1	115,310	23,000	138,310
37	Cardinal-Filipi 5-29	276,357	107,900	384,257
38	Continental-Kudrna 1	47,991	-	47,991
39	Continental-Pribyl 1	99,814	6,800	106,614
40	Continental-Rashko 1	25,460	24,700	50,160
42	Lone Star-Kaisershot 1	14,071	54,200	68,271
46	Cardinal-Ridl 15-19	48,850	1,500	50,350
47	Continental-Ehrmantraut 1	215,764	211,600	427,364
48	North American-Ehrmantraut 1	93,346	211,600	304,946
49	Cardinal-Head-Wock 15-21	128,720	21,300	150,020
50	North American-Head-Wock State 1	202,331	291,000	493,331
51	Continental-Pribyl-Hewson 2	1,962	-	1,962
52	North American-Wolfe 1	256,540	273,600	530,140
53	Continental-Jilek 1	110,944	66,300	177,244
56	North American-Miller 1	9,187	120,700	129,887
61	Cardinal-Schank 15-15	126,441	208,900	335,341
62	Cardinal-Schank 5-14	5,719	196,800	202,519
TOTALS		6,229,991	3,967,800	10,197,791

TABLE 3
DICKINSON-WEST DICKINSON FIELD
Tabulation of Net Oil Sand Thickness

<u>Tract Number</u>	<u>Lease and Well Number</u>	<u>"A" Sand</u>	<u>"B" Sand</u>
2	Cleary-Pazourek 21-3	0	8.0
2	Shell-Pazourek 22-3	0	1.0
3	Shell-Steffan 22-2	0	5.0
7	Shell-Vozabal 44-33	0	3.5
8	Shell-Zander 22	0	6.0
9	Continental-Zander-Anderson 1	1.5	4.5
10	Continental-Zahradnik 1	6.0	15.0
11	Shell-Steffan 44-35	0	12.0
12	Continental-Zahradnik 2	2.0	5.0
13	Continental-Kadrmass-State 1	0	0
13	Continental-Kadrmass-State 2	2.5	4.5
14	Continental-Karsky-State 1	9.0	8.0
15	Superior-Kadrmass 1	3.0	8.0
16	Cardinal-Frenzel 1	7.5	5.0
17	Continental-Frenzel 1	4.0	10.0
19	Union-State 1	2.0	3.0
20	Superior-Kalanek 1	6.0	6.0
21	Cardinal-Filipi 7-32	0	5.5
23	Continental-Kosteletzky 1	0	3.0
24	Continental-Zahradnik 3	2.0	5.0
25	King Resources-Buresh-Marsh 1	2.0	0
26	Calvert-Buresh-Zahradnik 1	4.0	0
27	Continental-Karsky-Buresh 1	6.0	2.0
28	Continental-Kadrmass 1	7.0	10.0
29	Continental-Zahradnik-Ridl 1	0	0
31	Continental-Frenzel 2	1.0	7.0
32	Cardinal-Ridl 1	1.0	3.0
33	Superior-Zahradnik 1	0	7.0
34	Continental-Ridl 1	1.0	6.5
35	Superior-Kalanek 2	0	3.0
36	Continental-Filipi 1	0	5.0
37	Cardinal-Filipi 5-29	4.0	4.5
38	Continental-Kudrna 1	0	3.0
39	Continental-Pribyl 1	0.5	6.0
40	Continental-Rashko 1	2.0	0
42	Lone Star-Kaisershot 1	3.0	0
46	Cardinal-Ridl 15-19	2.0	4.0
47	Continental-Ehrmantraut 1	0	3.5
48	North American-Ehrmantraut 1	0	3.0

TABLE 3
 DICKINSON-WEST DICKINSON FIELD
 Tabulation of Net Oil Sand Thickness
 Page Two

<u>Tract Number</u>	<u>Lease and Well Number</u>	<u>"A" Sand</u>	<u>"B" Sand</u>
49	Cardinal-Head-Wock 15-21	0	4.0
50	North American-Head-Wock State 1	0	8.0
51	Continental-Pribyl-Hewson 1	0	1.0
51	Continental-Pribyl-Hewson 2	0	2.0
52	North American-Wolfe 1	0	11.0
53	Continental-Jilek 1	0	9.0
54	Continental-Jilek-Ridl 1	0	0
56	North American-Miller 1	0	3.0
58	North American-Freed 1	0	1.0
59	North American-Kralicek 1	0	3.0
60	Cardinal-Kadmas 5-15	0	0
60	Cardinal-Kralicek-Kadmas 15-X	0	1.0
61	Cardinal-Schank 15-15	0	9.0
62	Cardinal-Schank 5-14	0	7.0
63	Continental-Wolfe 1	0	0
63	Continental-Wolfe 2	0	1.0

DICKINSON HEATH SAND UNIT - RUN 1 SUBMITTED BY E M BARNETT
REGION- DIVISION-CASPER DIST.-

PERCENTAGES BY WORKING INTEREST

[illegible]

DICKINSON HEATH SAND UNIT - RUN 1 SUBMITTED BY E M BARNETT
 REGION- DIVISION-CASPER DIST.-

TABLE 5

PERCENTAGES BY LEASE

NAME	NET OIL ACRL-FEET	CUM OIL PROD AS OF 9/1/71	NET OIL SURFACE ACRES	OIL PROD MARCH THRU AUG 1971	OIL PROD JUNE THRU AUG 1971	PRIMARY RESERVES 9/1/71	ULTIMATE OIL PRODUCTION
TRACT 01 PAZOUREK	.06852	0.00000	.21643	0.00000	0.00000	0.00000	0.00000
TRACT 02 PAZOUREK 21-3	2.32200	.93637	2.30095	.65943	.76377	.26463	.67501
TRACT 03 STEFFAN 22-2	1.76019	.76145	1.49273	.66181	.64545	.56707	.68581
TRACT 04 JAEGER	.80181	0.00000	.02535	0.00000	0.00000	0.00000	0.00000
TRACT 05 JAEGER	1.11496	0.00000	1.24485	0.00000	0.00000	0.00000	0.00000
TRACT 06 KUTISCHTA	.27601	0.00000	.59301	0.00000	0.00000	0.00000	0.00000
TRACT 07 VOZABAL 44-33	.97018	1.16419	1.64781	1.56520	1.60396	1.74655	1.39079
TRACT 08 ZAIDER	1.08851	0.00000	1.92111	0.00000	0.00000	0.00000	0.00000
TRACT 09 ZAIDER-ANDERSON	2.24405	1.92888	2.36359	1.99694	2.04016	1.48445	1.75595
TRACT 10 ZAHRAJNIK 1	6.03921	7.23642	2.74936	4.06698	4.13059	4.40547	6.13617
TRACT 11 STEFFAN 44-35	5.52609	2.46355	2.74936	1.53300	1.88864	1.66339	2.15222
TRACT 12 ZAHRAJNIK 2	4.76037	4.48210	2.74936	4.09462	4.04132	4.36766	4.38889
TRACT 13 KARMAS STATE	2.47937	2.02499	1.86776	4.01187	3.99038	3.60401	2.63937
TRACT 14 KARSKY STATE	7.11735	6.73609	2.74936	5.13731	4.85474	4.79863	5.98226
TRACT 15 KARMAS 1	1.88860	2.70855	1.86097	.31913	.33594	0.00000	1.65469
TRACT 16 FRENZEL FLD	2.29684	2.36182	1.23412	.89409	1.00300	.57967	1.66829
TRACT 17 FRENZEL 1	2.67268	3.01497	1.37463	1.81576	1.84608	1.28786	2.34298
TRACT 18 FEDERAL LAND BANK	1.71277	0.00000	1.34427	0.00000	0.00000	0.00000	0.00000
TRACT 19 STATE 1	.77309	1.21196	1.18293	.98852	1.00412	1.65835	1.36564
TRACT 20 KALANEK 1	1.93980	2.60409	1.37463	.46921	.46232	.09577	1.62815
TRACT 21 FILIPI 7-32	1.09762	.83142	1.37463	.43646	.39914	.07813	.53832
TRACT 22 KOSTELECKY	.02754	0.00000	.13094	0.00000	0.00000	0.00000	0.00000
TRACT 23 KOSTELECKY 1	.28039	1.26680	.72299	.66465	.62946	.78885	1.08084
TRACT 24 ZAHRAJNIK 3	.64200	1.86346	1.67433	2.26449	2.29970	4.16100	2.75739
TRACT 25 BURESH-MAKSH	.59154	0.00000	1.89740	0.00000	0.00000	0.00000	0.00000
TRACT 26 BURESH-ZAHRAJNIK	1.82520	1.02888	2.74936	1.56394	1.44791	.75357	.92176
TRACT 27 KARSKY-BURESH	2.00021	5.65999	2.74936	3.85886	3.45422	3.11507	4.66981
TRACT 28 KARMAS	5.63784	5.04532	2.74936	3.46524	3.36170	4.16352	4.70222
TRACT 29 ZAHRAJNIK	.25047	0.00000	.94767	0.00000	0.00000	0.00000	0.00000
TRACT 30 RIOL	.55609	0.00000	1.03359	0.00000	0.00000	0.00000	0.00000
TRACT 31 FRENZEL 2	1.49091	5.84315	1.21539	5.90508	5.04141	6.09154	5.93980
TRACT 32 RIOL 1	1.65666	.99843	1.37463	.04465	.05964	0.00000	.60998
TRACT 33 ZAHRAJNIK 1	1.21138	3.65609	1.21682	2.75743	2.76203	3.40490	3.55835
TRACT 34 RIOL	1.71913	5.20078	1.37468	3.85254	3.76792	5.05318	5.14375
TRACT 35 KALANEK 2	.99504	.49608	1.37468	.28851	.31531	0.00000	.36307
TRACT 36 FILIPI 1	1.12995	1.85088	1.37468	.46457	.74668	.57967	1.35627
TRACT 37 FILIPI 5-29	2.89324	4.43592	2.74936	2.85028	3.03478	2.71939	3.76804
TRACT 38 KJURNA	.71234	.77032	1.48972	.27208	.29500	0.00000	.47060
TRACT 39 PAPIYL 1	1.59067	1.60215	2.69051	.61806	.61998	.17138	1.04547
TRACT 40 KASHKO	.06432	.40867	.47737	.72245	.77409	.62251	.49187
TRACT 41 MARSH	.00972	0.00000	.16654	0.00000	0.00000	0.00000	0.00000
TRACT 42 KATERSHOT	.91546	.22586	1.77033	.74675	.78570	1.36600	.66947
TRACT 43 ZAHRAJNIK	.04466	0.00000	.32090	0.00000	0.00000	0.00000	0.00000
TRACT 44 RIOL	.00436	0.00000	.03730	0.00000	0.00000	0.00000	0.00000
TRACT 45 ZAHRAJNIK	.37163	0.00000	.76226	0.00000	0.00000	0.00000	0.00000
TRACT 46 RIOL 19-19	1.07009	.78411	1.63415	.26330	.28145	.03780	.49373
TRACT 47 EHRMANTRAUT	1.99245	3.46331	2.74936	3.67631	3.72182	5.33293	4.15075
TRACT 48 EHRMANTRAUT	1.69128	1.49834	2.53757	3.63052	3.67991	5.33293	2.99031
TRACT 49 HEAD-LOCK 15-21	2.43135	2.06613	2.74936	1.21986	1.19643	.53682	1.47111

TABLE 5

PERCENTAGES BY LEASE

[illegible]

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TABLE 6

DICKINSON HEATH SAND UNIT - RUN 1 SUBMITTED BY E M BARNETT
 REGION- DIVISION-CASPER DIST.-

PARAMETER TOTALS BY INTEREST OWNER

NAME	NET OIL ACRE-FeET	CUM OIL PROD AS OF 9/1/71	NET OIL SURFACE ACRES	OIL PROD MARCH THRU AUG 1971	OIL PROD JUNE THRU AUG 1971	PRIMARY RESERVES 9/1/71	ULTIMATE OIL PRODUCTION
BOSWELL CORPORATION	804.01	29168.00	133.90	2088.00	1184.50	5250.00	34418.00
CARDINAL PETROLEUM CO	10259.31	807500.35	1958.81	108666.98	52962.58	545864.50	1381774.94
CENTRAL OIL COMPANY	740.64	37559.01	187.50	5580.47	2631.45	17519.53	55077.54
CITIFIS SERVICE OIL CO	508.10	48285.25	80.00	1193.25	603.00	950.00	40235.25
CONTINENTAL OIL COMPANY	21351.54	2518493.71	3459.68	222973.85	106934.92	1434825.07	3053318.78
FELDMONT OIL CORPORATION	1146.56	78685.87	89.34	6099.94	2823.37	35700.00	114385.87
GABBERT, GEORGE AND EMMA	34.12	0.00	17.46	0.00	0.00	0.00	0.00
GOLDEN, A G	20.46	1458.53	4.61	359.23	178.34	3306.25	4764.78
GREFN, G G	49.38	2503.87	12.50	372.03	175.43	1167.97	3671.84
HELMERICH AND PAYNE, INC	159.43	2153.20	57.89	3446.48	1962.42	28289.06	30442.27
HILL, LOUIS W JR	3814.13	349604.11	572.85	52996.21	25984.38	314395.90	664000.00
HUFFMAN, HUSTON	31.89	430.64	11.58	689.30	392.48	5657.81	6088.45
HUNT RETROLEUM CORP	327.43	23336.50	73.84	5747.75	2853.50	52930.00	70236.50
HUNT, H L	69.89	8203.85	12.00	520.35	266.27	2775.00	10978.85
JONES, CLYDE W	93.67	5509.71	9.88	282.69	145.36	1218.98	1728.50
KING RESOURCES	409.65	0.00	220.84	0.00	0.00	0.00	0.00
LITCH, GENE C	64.34	0.00	12.07	0.00	0.00	0.00	0.00
LONE STAR PRODUCING CO	496.83	14071.00	276.75	4729.00	2437.00	54200.00	68271.00
MCCLROY COMPANY	4.27	0.00	2.18	0.00	0.00	0.00	0.00
MOORE, J HIRAH	310.85	21870.44	82.52	3094.22	1480.85	13900.87	35771.31
NORTH AMERICAN ROYALTIES	6485.35	528219.29	1156.44	85655.34	43372.02	584354.06	1112573.35
RIDL, JOE V	385.10	0.00	120.30	0.00	0.00	0.00	0.00
ROHPICH, JCHANNA	4.27	0.00	2.18	0.00	0.00	0.00	0.00
SERVICE, JOHNNIE L	1.42	0.00	.73	0.00	0.00	0.00	0.00
SHELL OIL COMPANY	17174.11	1268718.17	2139.59	101655.90	50359.11	662725.00	1031443.17
SMART, HUCSON	148.26	0.00	19.56	0.00	0.00	0.00	0.00
SPENCER, C C	128.69	0.00	24.15	0.00	0.00	0.00	0.00
SORONSON, DAVID J	191.14	0.00	69.02	0.00	0.00	0.00	0.00
SUPERIOR OIL COMPANY	2738.71	408715.50	498.88	20859.00	10294.00	137000.00	545715.50
UNION OIL COMPANY	1134.31	75505.00	285.35	6260.00	3130.00	65800.00	141305.00
ZAHRADNIK, LOUIS	204.38	0.00	147.65	0.00	0.00	0.00	0.00
TOTALS	69251.46	6229991.00	11639.08	633270.00	310171.00	3967800.00	10197791.00

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DICKINSON HEATH SAND UNIT - RUN 1 SUBMITTED BY E M BARNETT
 REGION- DIVISION-CASPER DIST.-

TABLE 7

SUMMARY OF ORIGINAL INPUT DATA

LEASE NO.	1	TRACT 01	PAZOUPEK	OPERATOR BOSWELL CORPORATION	NO. OF W.I.= 1		
	NET OIL	CUM OIL	NET OIL	OIL PROD	OIL PROD	PRIMARY	ULTIMATE
	ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	JUNE THRU	RESERVES	OIL
		9/1/71	ACRES	AUG 1971	AUG 1971	9/1/71	PRODUCTION
	47.450	0.000	25.190	0.000	0.000	0.000	0.000
	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST
	SHELL OIL COMPANY	1.0000000					
LEASE NO.	2	TRACT 02	PAZOUPEK 21-3	OPERATOR BOSWELL CORPORATION	NO. OF W.I.= 2		
	NET OIL	CUM OIL	NET OIL	OIL PROD	OIL PROD	PRIMARY	ULTIMATE
	ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	JUNE THRU	RESERVES	OIL
		9/1/71	ACRES	AUG 1971	AUG 1971	9/1/71	PRODUCTION
	1600.020	58336.000	267.810	4176.000	2369.000	10500.000	68876.000
	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST
	SHELL OIL COMPANY	.5000000	BOSWELL CORPORATION	.5000000			
LEASE NO.	3	TRACT 03	STEFFAN 22-2	OPERATOR SHELL OIL COMPANY	NO. OF W.I.= 1		
	NET OIL	CUM OIL	NET OIL	OIL PROD	OIL PROD	PRIMARY	ULTIMATE
	ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	JUNE THRU	RESERVES	OIL
		9/1/71	ACRES	AUG 1971	AUG 1971	9/1/71	PRODUCTION
	1210.950	47438.000	173.740	4191.000	2002.000	22500.000	69938.000
	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST
	SHELL OIL COMPANY	1.0000000					
LEASE NO.	4	TRACT 04	JAEGER	OPERATOR UNION OIL COMPANY	NO. OF W.I.= 1		
	NET OIL	CUM OIL	NET OIL	OIL PROD	OIL PROD	PRIMARY	ULTIMATE
	ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	JUNE THRU	RESERVES	OIL
		9/1/71	ACRES	AUG 1971	AUG 1971	9/1/71	PRODUCTION
	1.250	0.000	2.950	0.000	0.000	0.000	0.000
	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST
	UNION OIL COMPANY	1.0000000					
LEASE NO.	5	TRACT 05	JAEGER	OPERATOR UNION OIL COMPANY	NO. OF W.I.= 3		
	NET OIL	CUM OIL	NET OIL	OIL PROD	OIL PROD	PRIMARY	ULTIMATE
	ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	JUNE THRU	RESERVES	OIL
		9/1/71	ACRES	AUG 1971	AUG 1971	9/1/71	PRODUCTION
	772.130	0.000	144.890	0.000	0.000	0.000	0.000
	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST
	UNION OIL COMPANY	.7500000	SPENCER, C C	.1666670	LITCH, GENE C		.0833330
LEASE NO.	6	TRACT 06	KUBISCHTA	OPERATOR SORENSON, DAVID J	NO. OF W.I.= 1		
	NET OIL	CUM OIL	NET OIL	OIL PROD	OIL PROD	PRIMARY	ULTIMATE
	ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	JUNE THRU	RESERVES	OIL
		9/1/71	ACRES	AUG 1971	AUG 1971	9/1/71	PRODUCTION
	191.140	0.000	69.020	0.000	0.000	0.000	0.000
	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST
	SORENSON, DAVID J	1.0000000					

TABLE 7

LEASE NO.	TRACT	NAME	NET OIL ACRE-FEET	CUM OIL PROD AS OF 9/1/71	NET OIL SURFACE ACRES	OIL PROD MARCH THRU AUG 1971	OIL PROD JUNE THRU AUG 1971	PRIMARY RESERVES 9/1/71	NO. OF W.I.=	ULTIMATE OIL PRODUCTION
7	TRACT 07	V22A9AL 44-33	677.400	72529.000	191.790	9532.000	4975.000	69300.000	1	141829.000
INTEREST OWNER			INTEREST		INTEREST OWNER		INTEREST		INTEREST	
SHELL OIL COMPANY			1.0000000							
8	TRACT 08	ZANDER	753.810	0.000	223.600	0.000	0.000	0.000	2	0.000
INTEREST OWNER			INTEREST		INTEREST OWNER		INTEREST		INTEREST	
SHELL OIL COMPANY			.8750000		CONTINENTAL OIL COMPANY		.1250000			
9	TRACT 09	ZANDER-ANDERSON	1554.590	120169.000	275.100	12646.000	6328.000	58900.000	2	179069.000
INTEREST OWNER			INTEREST		INTEREST OWNER		INTEREST		INTEREST	
CONTINENTAL OIL COMPANY			.5000000		SHELL OIL COMPANY		.5000000			
10	TRACT 10	ZAHRAONIK 1	4182.240	450953.900	320.000	25755.000	12998.000	174800.000	2	625753.000
INTEREST OWNER			INTEREST		INTEREST OWNER		INTEREST		INTEREST	
CONTINENTAL OIL COMPANY			.5000000		SHELL OIL COMPANY		.5000000			
11	TRACT 11	STEFFAN 44-35	4103.910	153479.000	320.000	9708.000	5858.000	66000.000	1	219479.000
INTEREST OWNER			INTEREST		INTEREST OWNER		INTEREST		INTEREST	
SHELL OIL COMPANY			1.0000000							
12	TRACT 12	ZAHRAONIK 2	3296.620	274250.000	320.000	25930.000	12535.000	173300.000	2	447550.000
INTEREST OWNER			INTEREST		INTEREST OWNER		INTEREST		INTEREST	
CONTINENTAL OIL COMPANY			.5000000		SHELL OIL COMPANY		.5000000			

TABLE 7

DICKINSON HEATH SAND UNIT - RUN 1 SUBMITTED BY E M BARNETT
 REGION- DIVISION-CASPER DIST.-

LEASE NO.	TRACT	STATE	OPERATOR	CONTINENTAL OIL COMPANY	NO. OF W.I.=
13	13	KARPMAS	STATE		3
	NET OIL	CUM OIL	NET OIL	OIL PROD	OIL PROD
	ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	JUNE THRU
		9/1/71	ACRES	AUG 1971	AUG 1971
	1717.000	126157.000	217.390	25406.100	12377.000
	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER
	CONTINENTAL OIL COMPANY	.6000000	NORTH AMERICAN ROYALTIES	.2000000	HILL, LOUIS W JR
					.2000000
14	14	KARSKY	STATE		6
	NET OIL	CUM OIL	NET OIL	OIL PROD	OIL PROD
	ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	JUNE THRU
		9/1/71	ACRES	AUG 1971	AUG 1971
	4928.870	419658.000	320.000	32533.000	15058.000
	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER
	CONTINENTAL OIL COMPANY	.3046875	SHELL OIL COMPANY	.3046875	NORTH AMERICAN ROYALTIES
	HILL, LOUIS W JR	.1015625	FELMONT OIL CORPORATION	.1875000	
					.1015625
15	15	KARPMAS	1	OPERATOR SUPERIOR OIL COMPANY	2
	NET OIL	CUM OIL	NET OIL	OIL PROD	OIL PROD
	ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	JUNE THRU
		9/1/71	ACRES	AUG 1971	AUG 1971
	1252.480	168742.000	216.600	2021.000	1042.000
	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER
	SUPERIOR OIL COMPANY	.5000000	CONTINENTAL OIL COMPANY	.5000000	
16	16	FRENZEL	FLB	OPERATOR CAROLINA PETROLEUM CO	2
	NET OIL	CUM OIL	NET OIL	OIL PROD	OIL PROD
	ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	JUNE THRU
		9/1/71	ACRES	AUG 1971	AUG 1971
	1590.600	147129.000	143.640	5662.000	3111.000
	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER
	CAROLINA PETROLEUM CO	.9835527	JONES, CLYDE W	.0164473	
17	17	FRENZEL	1	OPERATOR CONTINENTAL OIL COMPANY	4
	NET OIL	CUM OIL	NET OIL	OIL PROD	OIL PROD
	ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	JUNE THRU
		9/1/71	ACRES	AUG 1971	AUG 1971
	1850.870	197932.000	160.000	11524.000	5726.000
	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER
	CONTINENTAL OIL COMPANY	.7099125	HILL, LOUIS W JR	.1183188	NORTH AMERICAN ROYALTIES
	JONES, CLYDE W	.0164500			
					.1553187
18	18	FEDERAL	LAND BANK	OPERATOR CONTINENTAL OIL COMPANY	6
	NET OIL	CUM OIL	NET OIL	OIL PROD	OIL PROD
	ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	JUNE THRU
		9/1/71	ACRES	AUG 1971	AUG 1971
	1186.120	0.000	156.460	0.000	0.000
	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER
	CONTINENTAL OIL COMPANY	.5156250	HILL, LOUIS W JR	.0703125	NORTH AMERICAN ROYALTIES
	FELMONT OIL CORPORATION	.1875000	JONES, CLYDE W	.0312500	SMART, HUDSON
					.1250100

DICKINSON HEATH SAND UNIT - RUN 1 SUBMITTED BY E. M. BARNETT
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LEASE NO.	TRACT	STATE	OPERATOR	NO. OF W.I.=
19	19	1	UNION OIL COMPANY	1
	NET OIL	CUM OIL	NET OIL	OIL PROD
	ACRE-FOOT	PROD AS OF	SURFACE	MARCH THRU
		9/1/71	ACRES	AUG 1971
	535.370	75505.000	137.690	6260.000
	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST
	UNION OIL COMPANY	1.0000000		
20	20	KALANEK 1	SUPERIOR OIL COMPANY	3
	NET OIL	CUM OIL	NET OIL	OIL PROD
	ACRE-FOOT	PROD AS OF	SURFACE	MARCH THRU
		9/1/71	ACRES	AUG 1971
	1343.340	162235.000	160.000	2946.000
	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST
	SUPERIOR OIL COMPANY	.5000000	CITIES SERVICE OIL CO	.2500000
21	21	FILIPPI 7-32	CARDINAL PETROLEUM CO	2
	NET OIL	CUM OIL	NET OIL	OIL PROD
	ACRE-FOOT	PROD AS OF	SURFACE	MARCH THRU
		9/1/71	ACRES	AUG 1971
	760.120	51797.000	160.000	2764.000
	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST
	CARDINAL PETROLEUM CO	.9750000	HUNT, H L	.0250000
22	22	KOSTELECKY	CONTINENTAL OIL COMPANY	1
	NET OIL	CUM OIL	NET OIL	OIL PROD
	ACRE-FOOT	PROD AS OF	SURFACE	MARCH THRU
		9/1/71	ACRES	AUG 1971
	19.070	0.000	15.240	0.000
	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST
	CONTINENTAL OIL COMPANY	1.0000000		
23	23	KOSTELECKY 1	CONTINENTAL OIL COMPANY	1
	NET OIL	CUM OIL	NET OIL	OIL PROD
	ACRE-FOOT	PROD AS OF	SURFACE	MARCH THRU
		9/1/71	ACRES	AUG 1971
	194.590	78922.000	84.150	4209.000
	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST
	CONTINENTAL OIL COMPANY	1.0000000		
24	24	ZAPADNIK 3	CONTINENTAL OIL COMPANY	2
	NET OIL	CUM OIL	NET OIL	OIL PROD
	ACRE-FOOT	PROD AS OF	SURFACE	MARCH THRU
		9/1/71	ACRES	AUG 1971
	583.100	116093.000	194.940	14467.000
	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST
	CONTINENTAL OIL COMPANY	.5000000	SHELL OIL COMPANY	.5000000

*** USE OF THIS DOCUMENT IS RESTRICTED TO THOSE OPERATIONS IN WHICH CONTINENTAL OIL CO. HAS AN INTEREST ***

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LEASE NO.	TRACT	OWNER	OPERATOR	NO. OF W.I.=
25	25	BURESH-MARSH	KING RESOURCES	1
NET OIL	CUM OIL	NET OIL	OIL PROD	OIL PROD
ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	JUNE THRU
	9/1/71	ACRES	AUG 1971	AUG 1971
409.650	0.000	220.840	0.000	0.000
INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER
KING RESOURCES	1.0000000			
26	26	BURESH-ZAHRAADNIK	CENTRAL OIL COMPANY	3
NET OIL	CUM OIL	NET OIL	OIL PROD	OIL PROD
ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	JUNE THRU
	9/1/71	ACRES	AUG 1971	AUG 1971
1264.030	64099.000	320.000	9524.000	4491.000
INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER
CENTRAL OIL COMPANY	.5859375	SHELL OIL COMPANY	.3750000	GREEN, G G
27	27	KARSKY-BURESH	CONTINENTAL OIL COMPANY	2
NET OIL	CUM OIL	NET OIL	OIL PROD	OIL PROD
ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	JUNE THRU
	9/1/71	ACRES	AUG 1971	AUG 1971
1846.390	352617.000	320.000	24437.000	19714.000
INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER
CONTINENTAL OIL COMPANY	.5000000	SHELL OIL COMPANY	.5000000	
28	28	KADRMAS	CONTINENTAL OIL COMPANY	2
NET OIL	CUM OIL	NET OIL	OIL PROD	OIL PROD
ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	JUNE THRU
	9/1/71	ACRES	AUG 1971	AUG 1971
3904.290	314323.000	320.000	22071.000	10427.000
INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER
CONTINENTAL OIL COMPANY	.5000000	SHELL OIL COMPANY	.5000000	
29	29	ZAHRAADNIK	ZAHRAADNIK, LOUIS	1
NET OIL	CUM OIL	NET OIL	OIL PROD	OIL PROD
ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	JUNE THRU
	9/1/71	ACRES	AUG 1971	AUG 1971
173.450	0.000	110.300	0.000	0.000
INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER
ZAHRAADNIK, LOUIS	1.0000000			
30	30	RIDL	RIDL, JOE V	1
NET OIL	CUM OIL	NET OIL	OIL PROD	OIL PROD
ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	JUNE THRU
	9/1/71	ACRES	AUG 1971	AUG 1971
385.100	0.000	120.300	0.000	0.000
INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER
RIDL, JOE V	1.0000000			

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LEASE NO.	TRACT	FIELD	OPERATOR	CONTINENTAL OIL COMPANY	NO. OF W.I.=
31	31	FRENZEL 2	NET OIL	OIL PROD	3
		CUM OIL	SURFACE	MARCH THRU	ULTIMATE
		PROD AS OF	ACRES	JUNE THRU	OIL
		9/1/71	141.460	AUG 1971	PRODUCTION
		1032.480	34862.000	AUG 1971	605728.000
		354028.000	15637.000	241700.000	INTEREST
		INTEREST	INTEREST	INTEREST	INTEREST
		CONTINENTAL OIL COMPANY	HILL, LOUIS W JR	INTEREST	NORTH AMERICAN ROYALTIES
		.7500000	.1250000		.1250000
LEASE NO.	TRACT	FIELD	OPERATOR	CARDINAL PETROLEUM CO	NO. OF W.I.=
32	32	RIDL 1	NET OIL	OIL PROD	1
		CUM OIL	SURFACE	MARCH THRU	ULTIMATE
		PROD AS OF	ACRES	JUNE THRU	OIL
		9/1/71	180.000	AUG 1971	PRODUCTION
		731.750	284.000	AUG 1971	62205.000
		62205.000	185.000	0.000	INTEREST
		INTEREST	INTEREST	INTEREST	INTEREST
		CARDINAL PETROLEUM CO			
		1.0000000			
LEASE NO.	TRACT	FIELD	OPERATOR	SUPERIOR OIL COMPANY	NO. OF W.I.=
33	33	ZAHADNIK 1	NET OIL	OIL PROD	1
		CUM OIL	SURFACE	MARCH THRU	ULTIMATE
		PROD AS OF	ACRES	JUNE THRU	OIL
		9/1/71	141.860	AUG 1971	PRODUCTION
		838.900	17462.000	AUG 1971	362274.000
		227774.000	8567.000	135100.000	INTEREST
		INTEREST	INTEREST	INTEREST	INTEREST
		SUPERIOR OIL COMPANY			
		1.0000000			
LEASE NO.	TRACT	FIELD	OPERATOR	CONTINENTAL OIL COMPANY	NO. OF W.I.=
34	34	RIDL	NET OIL	OIL PROD	1
		CUM OIL	SURFACE	MARCH THRU	ULTIMATE
		PROD AS OF	ACRES	JUNE THRU	OIL
		9/1/71	160.000	AUG 1971	PRODUCTION
		1180.520	24397.000	AUG 1971	524508.000
		324008.000	11687.000	200500.000	INTEREST
		INTEREST	INTEREST	INTEREST	INTEREST
		CONTINENTAL OIL COMPANY			
		1.0000000			
LEASE NO.	TRACT	FIELD	OPERATOR	SUPERIOR OIL COMPANY	NO. OF W.I.=
35	35	KALANEK 2	NET OIL	OIL PROD	3
		CUM OIL	SURFACE	MARCH THRU	ULTIMATE
		PROD AS OF	ACRES	JUNE THRU	OIL
		9/1/71	180.000	AUG 1971	PRODUCTION
		629.080	1827.000	AUG 1971	30906.000
		30906.000	978.000	0.000	INTEREST
		INTEREST	INTEREST	INTEREST	INTEREST
		SUPERIOR OIL COMPANY	CITIES SERVICE OIL CO	INTEREST	NORTH AMERICAN ROYALTIES
		.5000000	.2500000		.2500000
LEASE NO.	TRACT	FIELD	OPERATOR	CONTINENTAL OIL COMPANY	NO. OF W.I.=
36	36	FILIPPI 1	NET OIL	OIL PROD	3
		CUM OIL	SURFACE	MARCH THRU	ULTIMATE
		PROD AS OF	ACRES	JUNE THRU	OIL
		9/1/71	180.000	AUG 1971	PRODUCTION
		782.510	2942.000	AUG 1971	134310.000
		115310.000	2316.000	23000.000	INTEREST
		INTEREST	INTEREST	INTEREST	INTEREST
		CONTINENTAL OIL COMPANY	HILL, LOUIS W JR	INTEREST	NORTH AMERICAN ROYALTIES
		.7500000	.1250000		.1250000

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LEASE NO. 37	TRACT 37	FILIPPI 5-29	OPERATOR CARDINAL PETROLEUM CO	NO. OF W.I.= 2		
NET OIL	CUM OIL	NET OIL	OIL PROD	OIL PROD	PRIMARY	ULTIMATE
ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	JUNE THRU	RESERVES	OIL
	9/1/71	ACRES	AUG 1971	AUG 1971	9/1/71	PRODUCTION
2003.610	276357.300	320.000	18050.000	9413.000	107900.000	384257.000
INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST
CARDINAL PETROLEUM CO	.9750000	HUNT, H L	.0250000			
LEASE NO. 38	TRACT 38	KUDRNA	OPERATOR CONTINENTAL OIL COMPANY	NO. OF W.I.= 3		
NET OIL	CUM OIL	NET OIL	OIL PROD	OIL PROD	PRIMARY	ULTIMATE
ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	JUNE THRU	RESERVES	OIL
	9/1/71	ACRES	AUG 1971	AUG 1971	9/1/71	PRODUCTION
493.310	47991.000	173.390	1723.000	915.000	0.000	47991.000
INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST
CONTINENTAL OIL COMPANY	.7500000	HILL, LOUIS W JR	.1250000	NORTH AMERICAN ROYALTIES	.1250000	
LEASE NO. 39	TRACT 39	PRIAYL 1	OPERATOR CONTINENTAL OIL COMPANY	NO. OF W.I.= 4		
NET OIL	CUM OIL	NET OIL	OIL PROD	OIL PROD	PRIMARY	ULTIMATE
ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	JUNE THRU	RESERVES	OIL
	9/1/71	ACRES	AUG 1971	AUG 1971	9/1/71	PRODUCTION
1101.560	99814.000	313.150	3914.000	1923.000	6800.000	106614.000
INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST
CONTINENTAL OIL COMPANY	.6210938	HILL, LOUIS W JR	.1035156	NORTH AMERICAN ROYALTIES	.1035156	
MOORE, J HIRAH	.1718750					
LEASE NO. 40	TRACT 40	RASHKO	OPERATOR CONTINENTAL OIL COMPANY	NO. OF W.I.= 1		
NET OIL	CUM OIL	NET OIL	OIL PROD	OIL PROD	PRIMARY	ULTIMATE
ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	JUNE THRU	RESERVES	OIL
	9/1/71	ACRES	AUG 1971	AUG 1971	9/1/71	PRODUCTION
44.890	25460.000	55.620	4575.000	2401.000	24700.000	50160.000
INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST
CONTINENTAL OIL COMPANY	1.0000000					
LEASE NO. 41	TRACT 41	MARSH	OPERATOR CONTINENTAL OIL COMPANY	NO. OF W.I.= 2		
NET OIL	CUM OIL	NET OIL	OIL PROD	OIL PROD	PRIMARY	ULTIMATE
ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	JUNE THRU	RESERVES	OIL
	9/1/71	ACRES	AUG 1971	AUG 1971	9/1/71	PRODUCTION
6.730	0.000	12.400	0.000	0.000	0.000	0.000
INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST
CONTINENTAL OIL COMPANY	.5000000	SHELL OIL COMPANY	.5000000			
LEASE NO. 42	TRACT 42	KAISERSHOT	OPERATOR LONE STAR PRODUCING CO	NO. OF W.I.= 1		
NET OIL	CUM OIL	NET OIL	OIL PROD	OIL PROD	PRIMARY	ULTIMATE
ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	JUNE THRU	RESERVES	OIL
	9/1/71	ACRES	AUG 1971	AUG 1971	9/1/71	PRODUCTION
356.960	14071.000	206.050	4729.000	2437.000	54200.000	62271.000
INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST
LONE STAR PRODUCING CO	1.0000000					

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LEASE NO. 43	TRACT 43	ZAHRAADNIK	OPERATOR ZAHRAADNIK, LOUIS	NO. OF W.I.= 1	
NET OIL	CUM OIL	NET OIL	OIL PROD	PRIMARY	ULTIMATE
ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	RESERVES	OIL
	9/1/71	ACRES	AUG 1971	9/1/71	PRODUCTION
30.930	0.000	37.350	0.000	0.000	0.000
INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST
ZAHRAADNIK, LOUIS	1.0000000				
LEASE NO. 44	TRACT 44	RIDL	OPERATOR LONE STAR PRODUCING CO	NO. OF W.I.= 1	
NET OIL	CUM OIL	NET OIL	OIL PROD	PRIMARY	ULTIMATE
ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	RESERVES	OIL
	9/1/71	ACRES	AUG 1971	9/1/71	PRODUCTION
3.020	0.000	4.400	0.000	0.000	0.000
INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST
LONE STAR PRODUCING CO	1.0000000				
LEASE NO. 45	TRACT 45	ZAHRAADNIK	OPERATOR SUPERIOR OIL COMPANY	NO. OF W.I.= 1	
NET OIL	CUM OIL	NET OIL	OIL PROD	PRIMARY	ULTIMATE
ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	RESERVES	OIL
	9/1/71	ACRES	AUG 1971	9/1/71	PRODUCTION
257.350	0.000	88.720	0.000	0.000	0.000
INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST
SUPERIOR OIL COMPANY	1.0000000				
LEASE NO. 46	TRACT 46	RIDL 15-19	OPERATOR CAPOINAL PETROLEUM CO	NO. OF W.I.= 2	
NET OIL	CUM OIL	NET OIL	OIL PROD	PRIMARY	ULTIMATE
ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	RESERVES	OIL
	9/1/71	ACRES	AUG 1971	9/1/71	PRODUCTION
741.050	48850.000	190.200	1794.000	1500.000	50350.000
INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST
CAPOINAL PETROLEUM CO	.5000000	CONTINENTAL OIL COMPANY	.5000000		
LEASE NO. 47	TRACT 47	EHMANTRAUT	OPERATOR CONTINENTAL OIL COMPANY	NO. OF W.I.= 3	
NET OIL	CUM OIL	NET OIL	OIL PROD	PRIMARY	ULTIMATE
ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	RESERVES	OIL
	9/1/71	ACRES	AUG 1971	9/1/71	PRODUCTION
1379.800	215764.000	320.000	23281.000	211600.000	427364.000
INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST
CONTINENTAL OIL COMPANY	.7500000	HILL, LOUIS W JR	.1093750	NORTH AMERICAN ROYALTIES	.1406250
LEASE NO. 48	TRACT 48	EHMANTRAUT	OPERATOR NORTH AMERICAN ROYALTIES	NO. OF W.I.= 5	
NET OIL	CUM OIL	NET OIL	OIL PROD	PRIMARY	ULTIMATE
ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	RESERVES	OIL
	9/1/71	ACRES	AUG 1971	9/1/71	PRODUCTION
1309.740	93346.000	295.350	22991.000	211600.000	304946.000
INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST
NORTH AMERICAN ROYALTIES	.4528505	CONTINENTAL OIL COMPANY	.1312254	HILL, LOUIS W JR	.1502501
HUNT PETROLEUM CORP	.2500000	GOLDEN, A G	.0156250		

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LEASE NO. 49	TRACT 49	HEAD-WOOD	15-21	OPERATOR	CARDINAL PETROLEUM CO	NO. OF W.I.=	1
NET OIL	CUM OIL	NET OIL	OIL PROD	OIL PROD	PRIMARY	ULTIMATE	
ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	JUNE THRU	RESERVES	OIL	
	9/1/71	ACRES	AUG 1971	AUG 1971	9/1/71	PRODUCTION	
1683.750	128720.000	320.000	7725.000	3711.000	21300.000	150020.000	
INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST	
CARDINAL PETROLEUM CO	1.0000000						
LEASE NO. 50	TRACT 50	HEAD-WOOD	STATE	OPERATOR	NORTH AMERICAN ROYALTIES	NO. OF W.I.=	7
NET OIL	CUM OIL	NET OIL	OIL PROD	OIL PROD	PRIMARY	ULTIMATE	
ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	JUNE THRU	RESERVES	OIL	
	9/1/71	ACRES	AUG 1971	AUG 1971	9/1/71	PRODUCTION	
2221.370	202331.000	320.000	33814.000	17940.000	291000.000	493331.000	
INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST	
NORTH AMERICAN ROYALTIES	.6093750	HILL, LOUIS W JR	.2031250	CONTINENTAL OIL COMPANY	.1875000		
LEASE NO. 51	TRACT 51	PRIGYL-HEWSON		OPERATOR	CONTINENTAL OIL COMPANY	NO. OF W.I.=	4
NET OIL	CUM OIL	NET OIL	OIL PROD	OIL PROD	PRIMARY	ULTIMATE	
ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	JUNE THRU	RESERVES	OIL	
	9/1/71	ACRES	AUG 1971	AUG 1971	9/1/71	PRODUCTION	
840.070	1062.000	294.190	681.000	335.000	0.000	1962.000	
INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST	
CONTINENTAL OIL COMPANY	.6250000	NORTH AMERICAN ROYALTIES	.2373047	HILL, LOUIS W JR	.1142578		
MOORE, J HIRAM	.0234375						
LEASE NO. 52	TRACT 52	WOLFF		OPERATOR	NORTH AMERICAN ROYALTIES	NO. OF W.I.=	7
NET OIL	CUM OIL	NET OIL	OIL PROD	OIL PROD	PRIMARY	ULTIMATE	
ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	JUNE THRU	RESERVES	OIL	
	9/1/71	ACRES	AUG 1971	AUG 1971	9/1/71	PRODUCTION	
2820.870	256540.000	320.000	60999.000	29504.000	273600.000	530140.000	
INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST	
NORTH AMERICAN ROYALTIES	.4062500	HILL, LOUIS W JR	.4062500	CONTINENTAL OIL COMPANY	.1875000		
LEASE NO. 53	TRACT 53	JILEK		OPERATOR	CONTINENTAL OIL COMPANY	NO. OF W.I.=	1
NET OIL	CUM OIL	NET OIL	OIL PROD	OIL PROD	PRIMARY	ULTIMATE	
ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	JUNE THRU	RESERVES	OIL	
	9/1/71	ACRES	AUG 1971	AUG 1971	9/1/71	PRODUCTION	
1280.900	110344.000	280.140	20449.000	8804.000	66300.000	177244.000	
INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST	
CONTINENTAL OIL COMPANY	1.0000000						
LEASE NO. 54	TRACT 54	JILEK-RIDL		OPERATOR	CONTINENTAL OIL COMPANY	NO. OF W.I.=	2
NET OIL	CUM OIL	NET OIL	OIL PROD	OIL PROD	PRIMARY	ULTIMATE	
ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	JUNE THRU	RESERVES	OIL	
	9/1/71	ACRES	AUG 1971	AUG 1971	9/1/71	PRODUCTION	
46.740	0.000	37.640	0.000	0.000	0.000	0.000	
INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST	
CONTINENTAL OIL COMPANY	.2506250	LONE STAR PRODUCING CO	.7493750				

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LEASE NO.	TRACT	STATE	OPERATOR	NO. OF W.T.=
55	55	BANK OF NORTH DAKOTA	CONTINENTAL OIL COMPANY	2
NET OIL	CUM OIL	NET OIL	OIL PROD	ULTIMATE
ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	OIL
	9/1/71	ACRES	AUG 1971	PRODUCTION
123.640	0.000	76.190	0.000	0.000
INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST
CONTINENTAL OIL COMPANY	.5000000	LONE STAR PRODUCING CO	.5000000	
56	56	MILLER	NORTH AMERICAN ROYALTIES	5
NET OIL	CUM OIL	NET OIL	OIL PROD	ULTIMATE
ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	OIL
	9/1/71	ACRES	AUG 1971	PRODUCTION
500.570	9197.000	189.590	14705.000	120700.000
INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST
NORTH AMERICAN ROYALTIES	.6601560	HELMERICH AND PAYNE, INC	.2343750	.0117100
HUFFMAN, HUSTON	.0468750	CONTINENTAL OIL COMPANY	.0468750	
57	57	KRALICEK	NORTH AMERICAN ROYALTIES	2
NET OIL	CUM OIL	NET OIL	OIL PROD	ULTIMATE
ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	OIL
	9/1/71	ACRES	AUG 1971	PRODUCTION
593.810	0.000	154.400	0.000	0.000
INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST
NORTH AMERICAN ROYALTIES	.7500000	HILL, LOUIS W JR	.2500000	
58	58	FREED	NORTH AMERICAN ROYALTIES	2
NET OIL	CUM OIL	NET OIL	OIL PROD	ULTIMATE
ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	OIL
	9/1/71	ACRES	AUG 1971	PRODUCTION
66.720	0.000	48.600	0.000	0.000
INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST
NORTH AMERICAN ROYALTIES	.5000000	CARDINAL PETROLEUM CO	.5000000	
59	59	KRALICEK	KRALICEK, MARY	7
NET OIL	CUM OIL	NET OIL	OIL PROD	ULTIMATE
ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	OIL
	9/1/71	ACRES	AUG 1971	PRODUCTION
136.500	0.000	69.850	0.000	0.000
INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST
GABBERT, GEORGE AND EMMA	.2500000	ROHRICH, JOHANNA	.0312500	.0312500
MOORE, J HIRAH	.0520620	SERVICE, JOHNNIE L	.0104380	.4726560
HILL, LOUIS W JR	.1523440			
60	60	KRALICEK-KADRMAS	CARDINAL PETROLEUM CO	5
NET OIL	CUM OIL	NET OIL	OIL PROD	ULTIMATE
ACRE-FEET	PROD AS OF	SURFACE	MARCH THRU	OIL
	9/1/71	ACRES	AUG 1971	PRODUCTION
359.320	0.000	114.850	0.000	0.000
INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST
CARDINAL PETROLEUM CO	.6992188	HILL, LOUIS W JR	.1367187	.1171275
CONTINENTAL OIL COMPANY	.0234375	HUFFMAN, HUSTON	.0234375	

*** USE OF THIS DOCUMENT IS RESTRICTED TO THOSE OPERATIONS IN WHICH CONTINENTAL OIL CO. HAS AN INTEREST ***

DICKINSON HEATH SAND UNIT - RUN 1 SUBMITTED BY E M BARNETT
REGION- DIVISION-CASPER DIST.-

TABLE 7

LEASE NO.	TRACT	SCHANK	15-15	OPERATOR	CARDINAL PETROLEUM CO	NO. OF W.I.=	2
NET OIL	CUM OIL	NET OIL	OIL PROD	OIL PROD	PRIMARY	ULTIMATE	
ACRE-FFET	PROD AS OF	SURFACE	MARCH THRU	JUNE THRU	RESERVES	OIL	
	9/1/71	ACRES	AUG 1971	AUG 1971	9/1/71	PRODUCTION	
1935.980	126441.000	271.000	40509.000	18974.000	208900.000	335341.000	
INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST OWNER	INTEREST	
CARDINAL PETROLEUM CO	.9642858	MOORE, J HIRAM	.0357142				
LEASE NO. 62	TRACT 62	SCHANK 5-14	OPERATOR	CARDINAL PETROLEUM CO	NO. OF W.I.=	2	
NET OIL	CUM OIL	NET OIL	OIL PROD	OIL PROD	PRIMARY	ULTIMATE	
ACRE-FFET	PROD AS OF	SURFACE	MARCH THRU	JUNE THRU	RESERVES	OIL	
	9/1/71	ACRES	AUG 1971	AUG 1971	9/1/71	PRODUCTION	
1488.350	5719.000	317.000	35795.000	17354.000	196800.000	202519.000	
INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST OWNER	INTEREST	
CARDINAL PETROLEUM CO	.0732143	MOORE, J HIRAM	.0267857				
LEASE NO. 63	TRACT 63	WOLFF	OPERATOR	CONTINENTAL OIL COMPANY	NO. OF W.I.=	1	
NET OIL	CUM OIL	NET OIL	OIL PROD	OIL PROD	PRIMARY	ULTIMATE	
ACRE-FFET	PROD AS OF	SURFACE	MARCH THRU	JUNE THRU	RESERVES	OIL	
	9/1/71	ACRES	AUG 1971	AUG 1971	9/1/71	PRODUCTION	
187.990	0.000	137.400	0.000	0.000	0.000	0.000	
INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST OWNER	INTEREST	
CONTINENTAL OIL COMPANY	1.0000000						
LEASE NO. 64	TRACT 64	KADMAS	OPERATOR	SHELL OIL COMPANY	NO. OF W.I.=	1	
NET OIL	CUM OIL	NET OIL	OIL PROD	OIL PROD	PRIMARY	ULTIMATE	
ACRE-FFET	PROD AS OF	SURFACE	MARCH THRU	JUNE THRU	RESERVES	OIL	
	9/1/71	ACRES	AUG 1971	AUG 1971	9/1/71	PRODUCTION	
.040	0.000	.500	0.000	0.000	0.000	0.000	
INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST OWNER	INTEREST	
SHELL OIL COMPANY	1.0000000						
LEASE NO. 65	TRACT 65	STATE	OPERATOR	UNION OIL COMPANY	NO. OF W.I.=	1	
NET OIL	CUM OIL	NET OIL	OIL PROD	OIL PROD	PRIMARY	ULTIMATE	
ACRE-FFET	PROD AS OF	SURFACE	MARCH THRU	JUNE THRU	RESERVES	OIL	
	9/1/71	ACRES	AUG 1971	AUG 1971	9/1/71	PRODUCTION	
18.500	0.000	36.040	0.000	0.000	0.000	0.000	
INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST	INTEREST OWNER	INTEREST OWNER	INTEREST	
UNION OIL COMPANY	1.0000000						
NET OIL	CUM OIL	NET OIL	OIL PROD	OIL PROD	PRIMARY	ULTIMATE	
ACRE-FFET	PROD AS OF	SURFACE	MARCH THRU	JUNE THRU	RESERVES	OIL	
	9/1/71	ACRES	AUG 1971	AUG 1971	9/1/71	PRODUCTION	
TOTALS	69251.460	6229991.000	11639.080	633270.000	310171.000	3967800.000	10197791.000

CONTINENTAL OIL CO.
CASPER DIVISION

STATE- NORTH DAKOTA
LEASE-

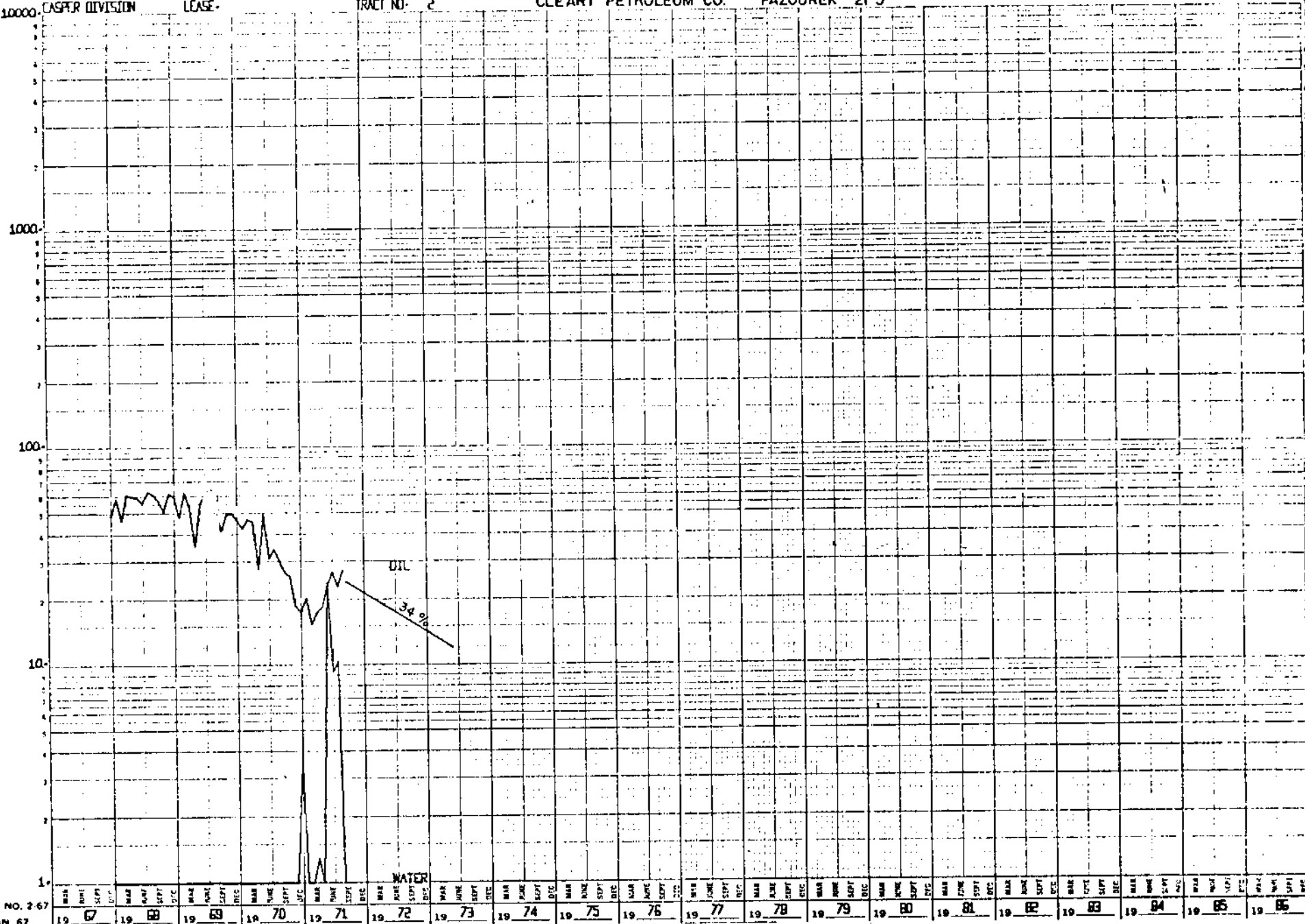
FIELD- DICKINSON
TRACT NO- 2

RESERVOIR- HEATH
CLEARY PETROLEUM CO.

PAZOUREK 21-3

BEELS OR MWT/DAY

FORM NO. 2-67
JAN. 67



STEFFAN 22-2



CONTINENTAL OIL CO.
CASPER DIVISION

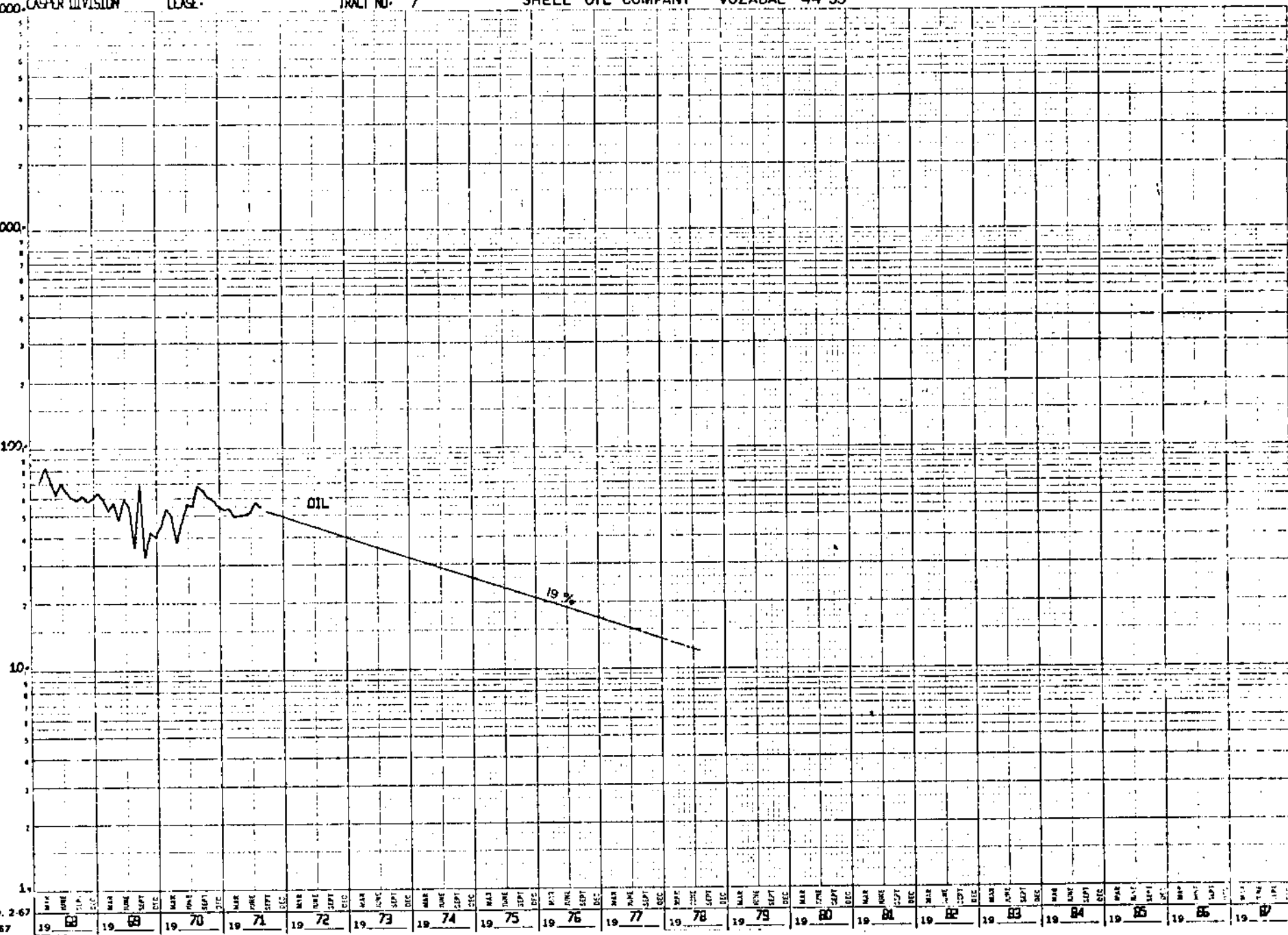
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LEASE:

FIELD: DUKES
TRACT NO. 7

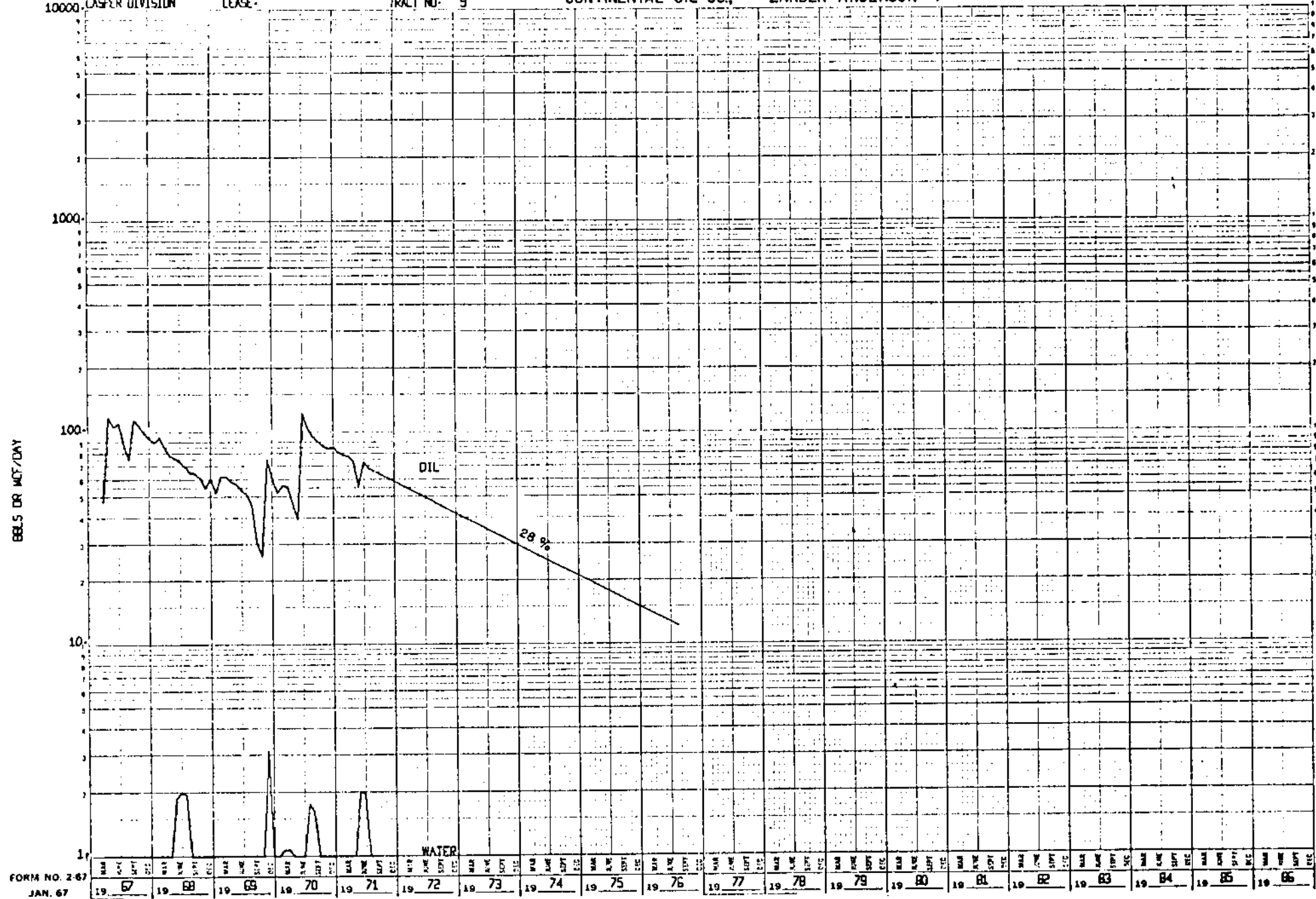
RESERVOIR: HEATH
SHELL OIL COMPANY VOZABAL 44-33

BELS OR MC/DAY

FORM NO. 2-67
JAN. 67

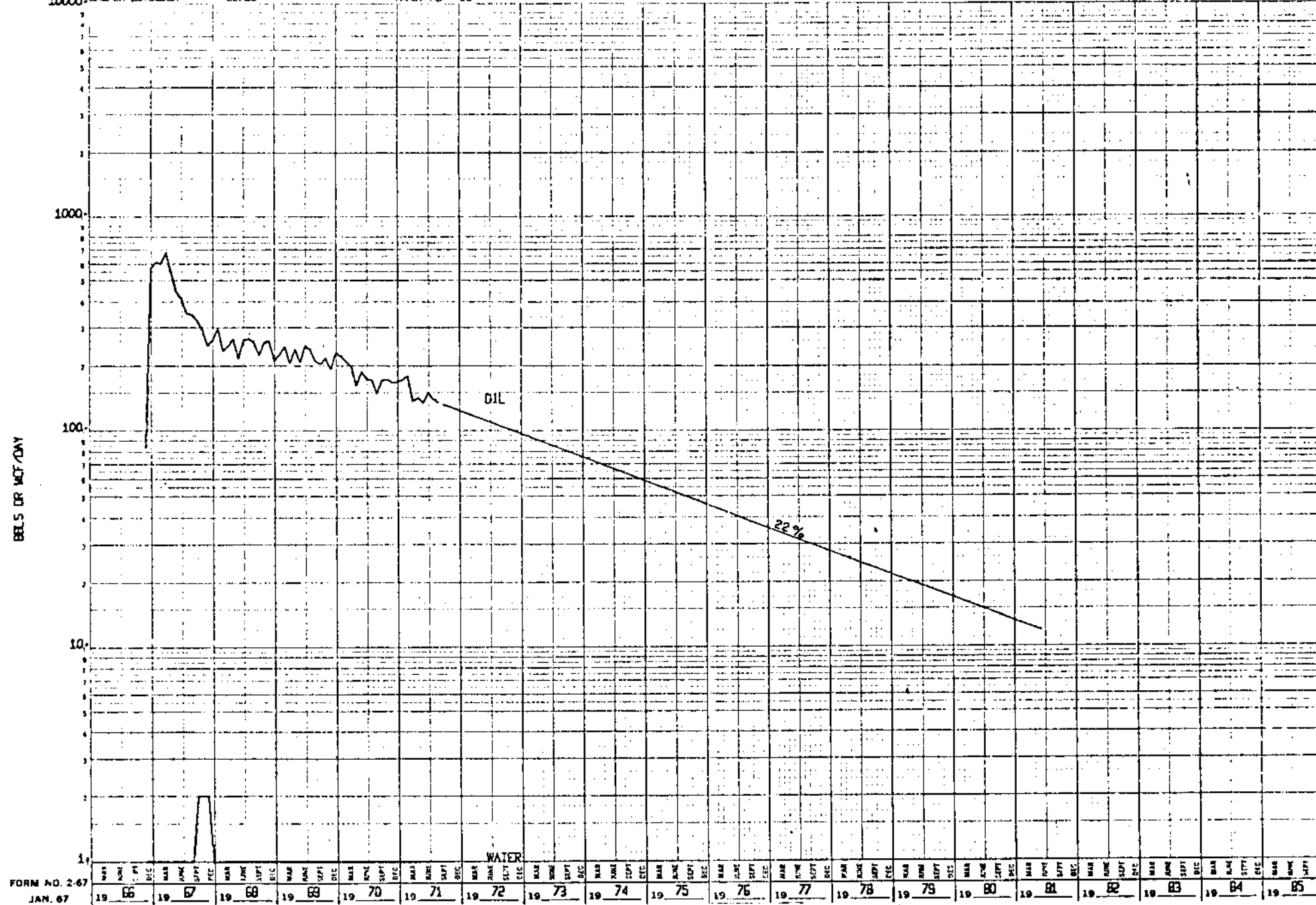


CONTINENTAL OIL CO. STATE: NORTH DAKOTA FIELD: DICKINSON RESERVOIR: HEATH
 CASPER DIVISION LEASE: TRACT NO: 9 CONTINENTAL OIL CO., ZANDER-ANDERSON 1



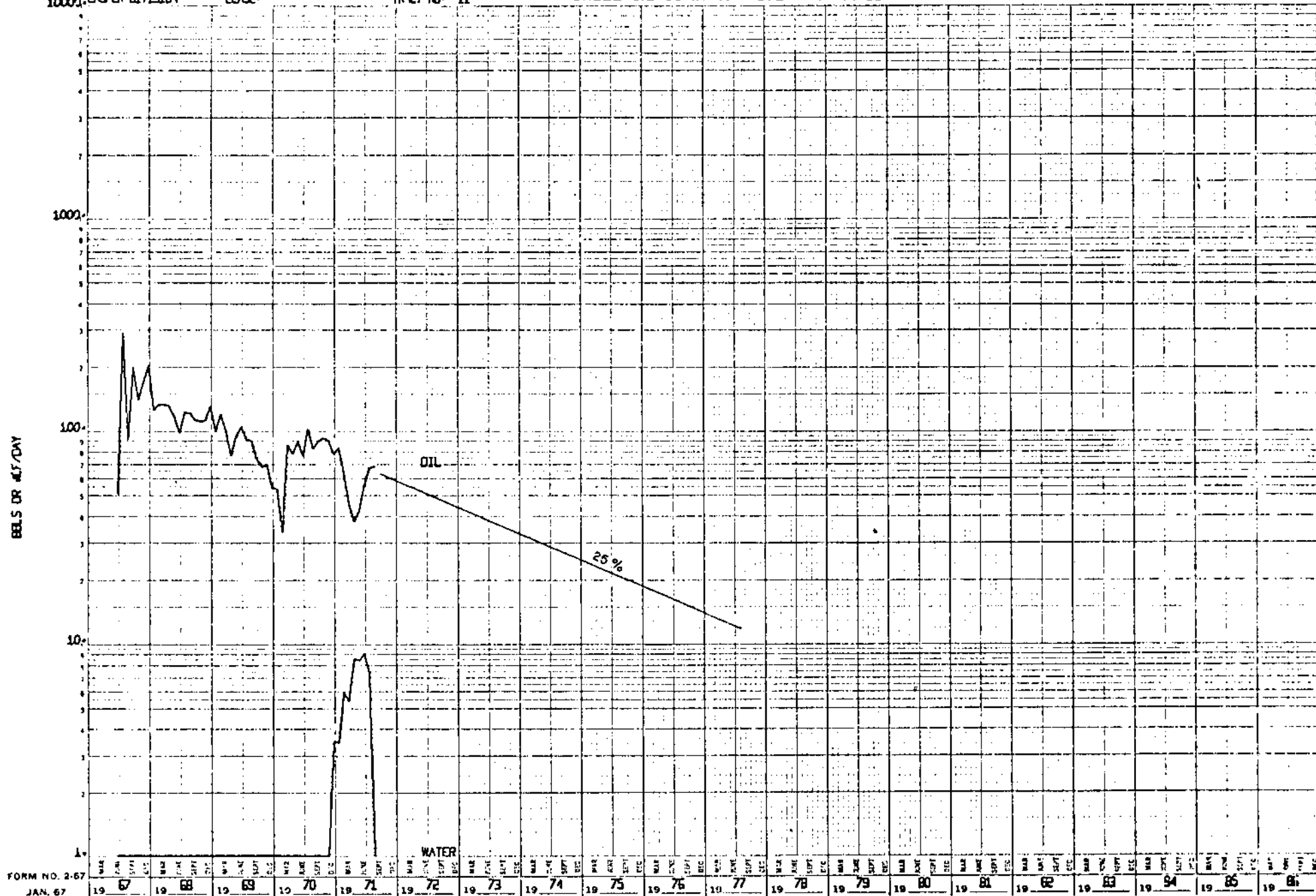
FORM NO. 2-67
 JAN. 67

CONTINENTAL OIL CO. STATE: NORTH DAKOTA FIELD: DICKINSON RESERVOIR: HEATH
CASPER DIVISION LEASE: TRACT NO. 10 CONTINENTAL OIL CO. ZAHRADNIK 1

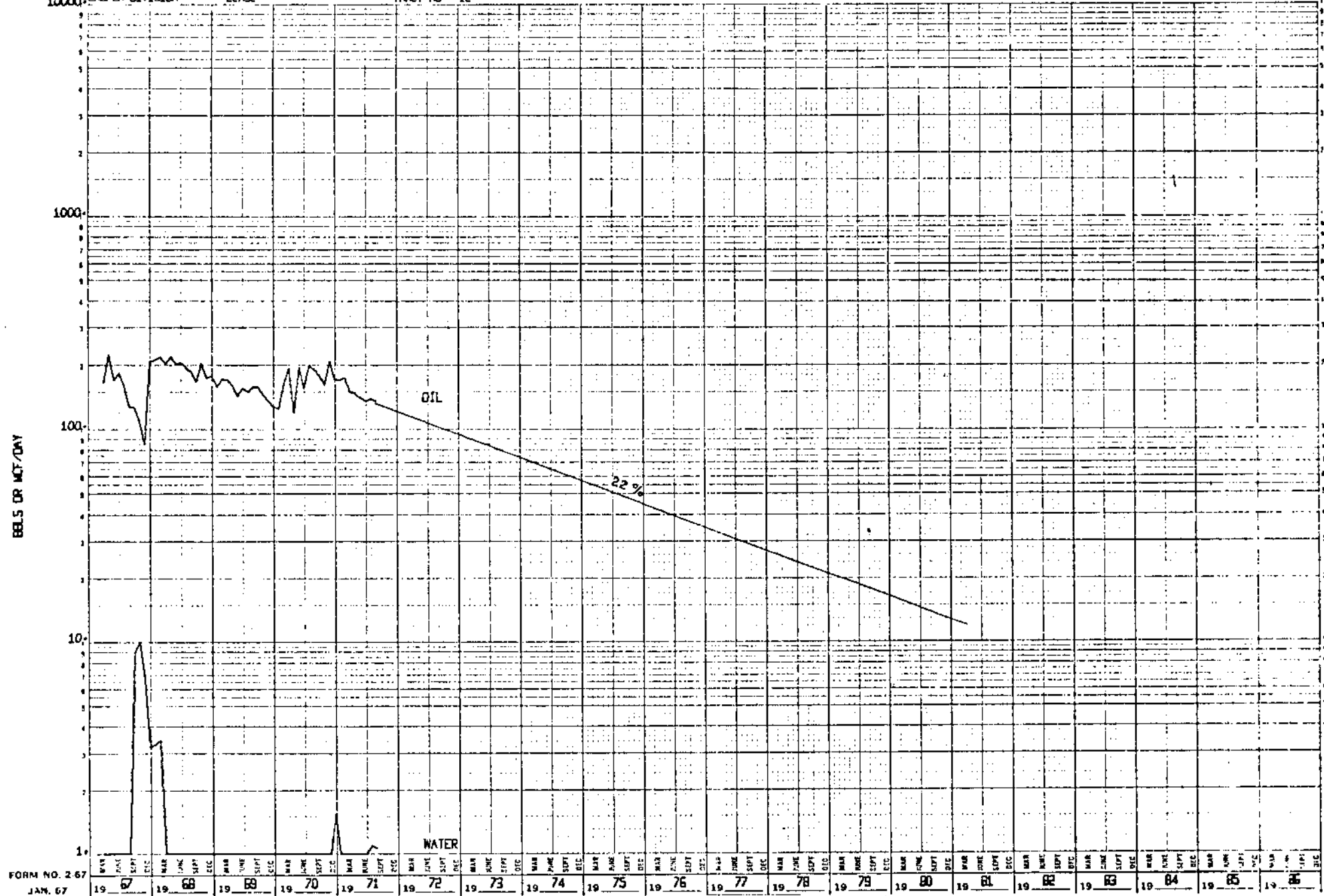


FORM NO. 2-67
JAN. 67

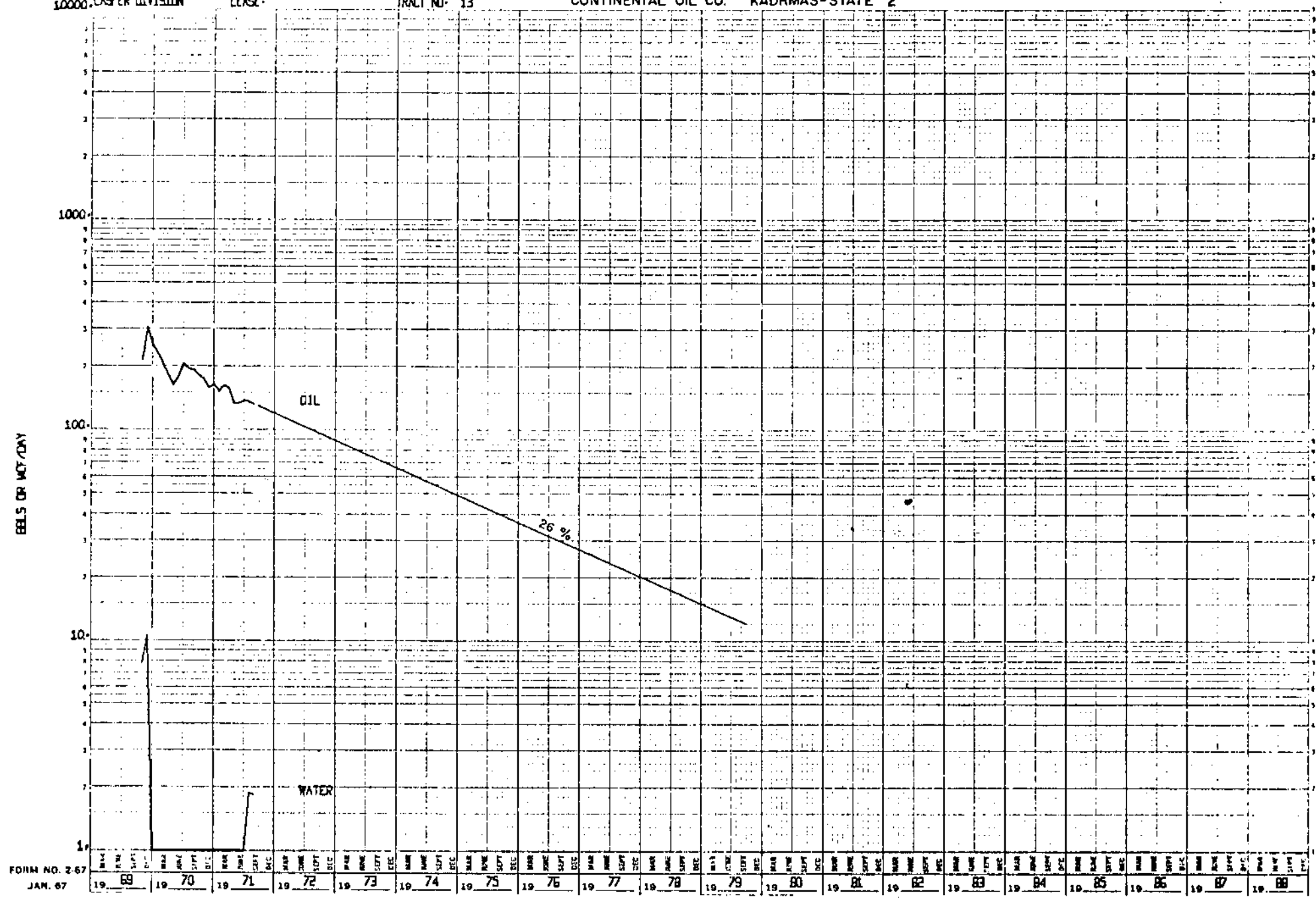
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 CASPER DIVISION LEASE: TRACT NO. 11 SHELL OIL COMPANY STEFFAN 44-35



CONTINENTAL OIL CO. STATE- NORTH DAKOTA FIELD- DICKINSON RESERVOIR- HEATH
 CASPER DIVISION LEASE- TRACT NO- 12 CONTINENTAL OIL CO. ZAHRADNIK 2

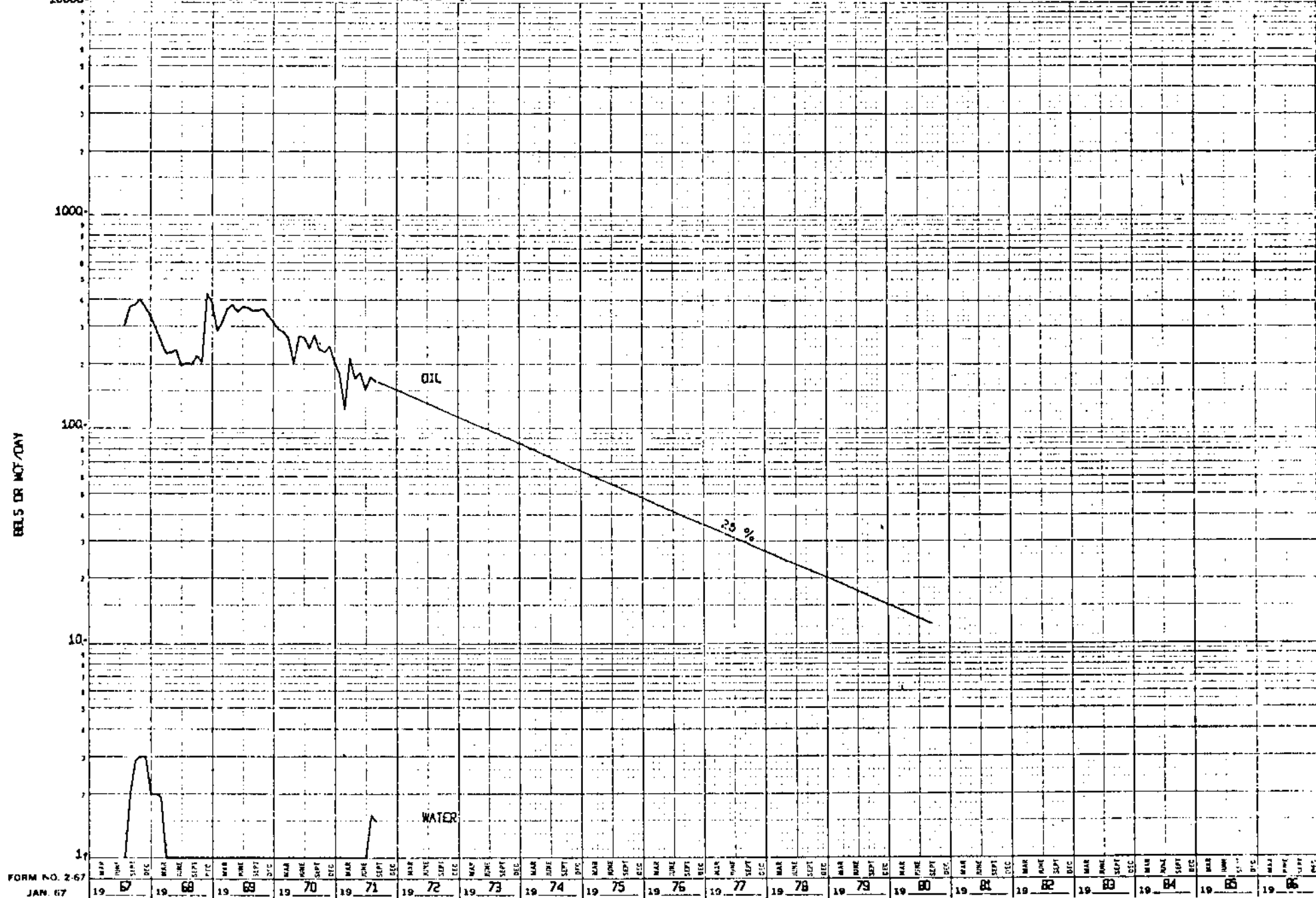


CONTINENTAL OIL CO. STATE: NORTH DAKOTA FIELD: DICKINSON RESERVOIR: HEATH
 CASPER DIVISION LEASE: TRACT NO. 13 CONTINENTAL OIL CO. KADRMAS-STATE 2

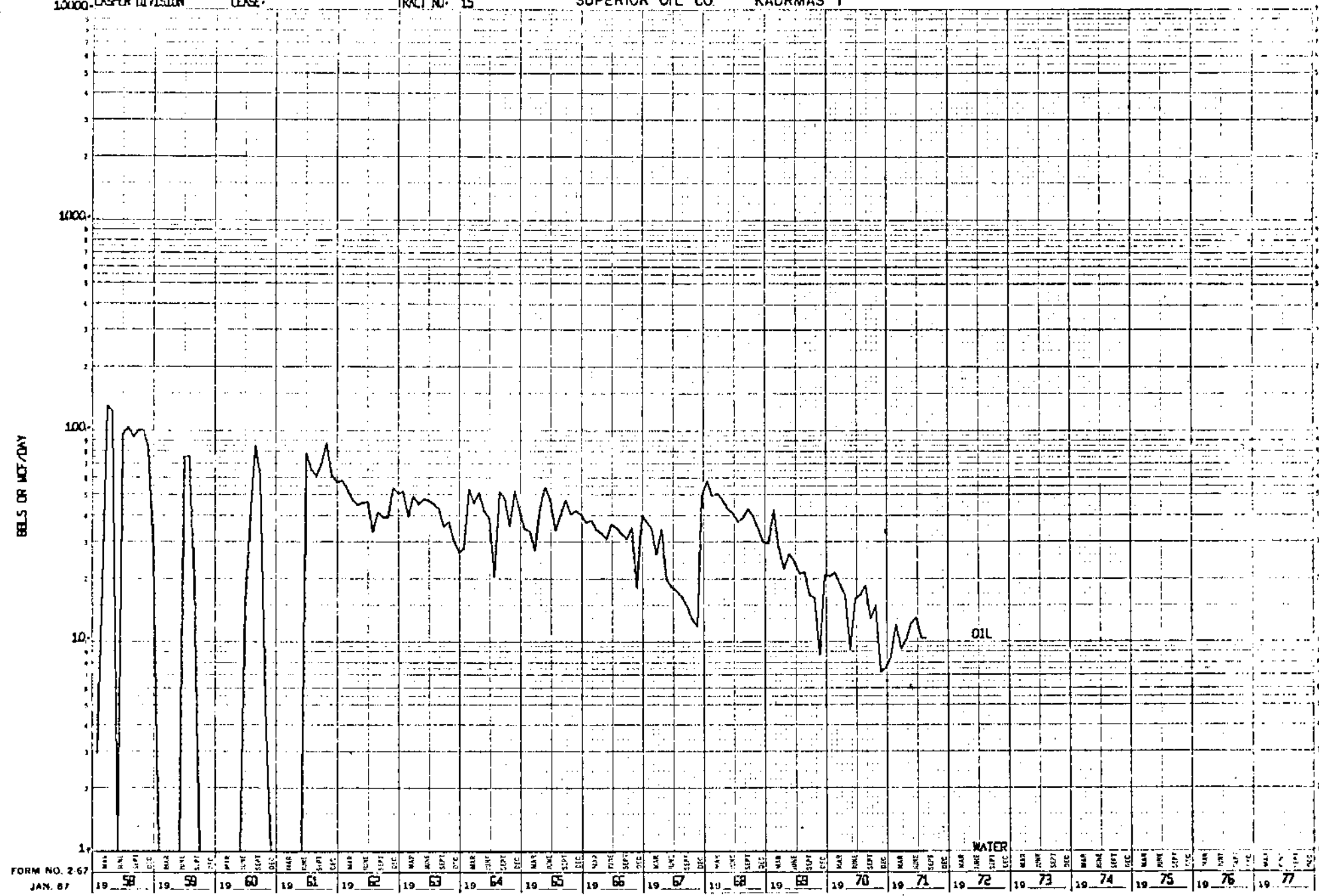


FORM NO. 2-67
 JAN. 67

CONTINENTAL OIL CO. STATE: NORTH DAKOTA FIELD: DICKINSON RESERVOIR: HEATH
 CASPER DIVISION LEASE: TRACT NO. 14 CONTINENTAL OIL CO. KARSKY - STATE 1



CONTINENTAL OIL CO. STATE: NORTH DAKOTA FIELD: DICKINSON RESERVOIR: HEATH
 CASPER DIVISION LEASE: TRACT NO. 15 SUPERIOR OIL CO. KADRMAS I

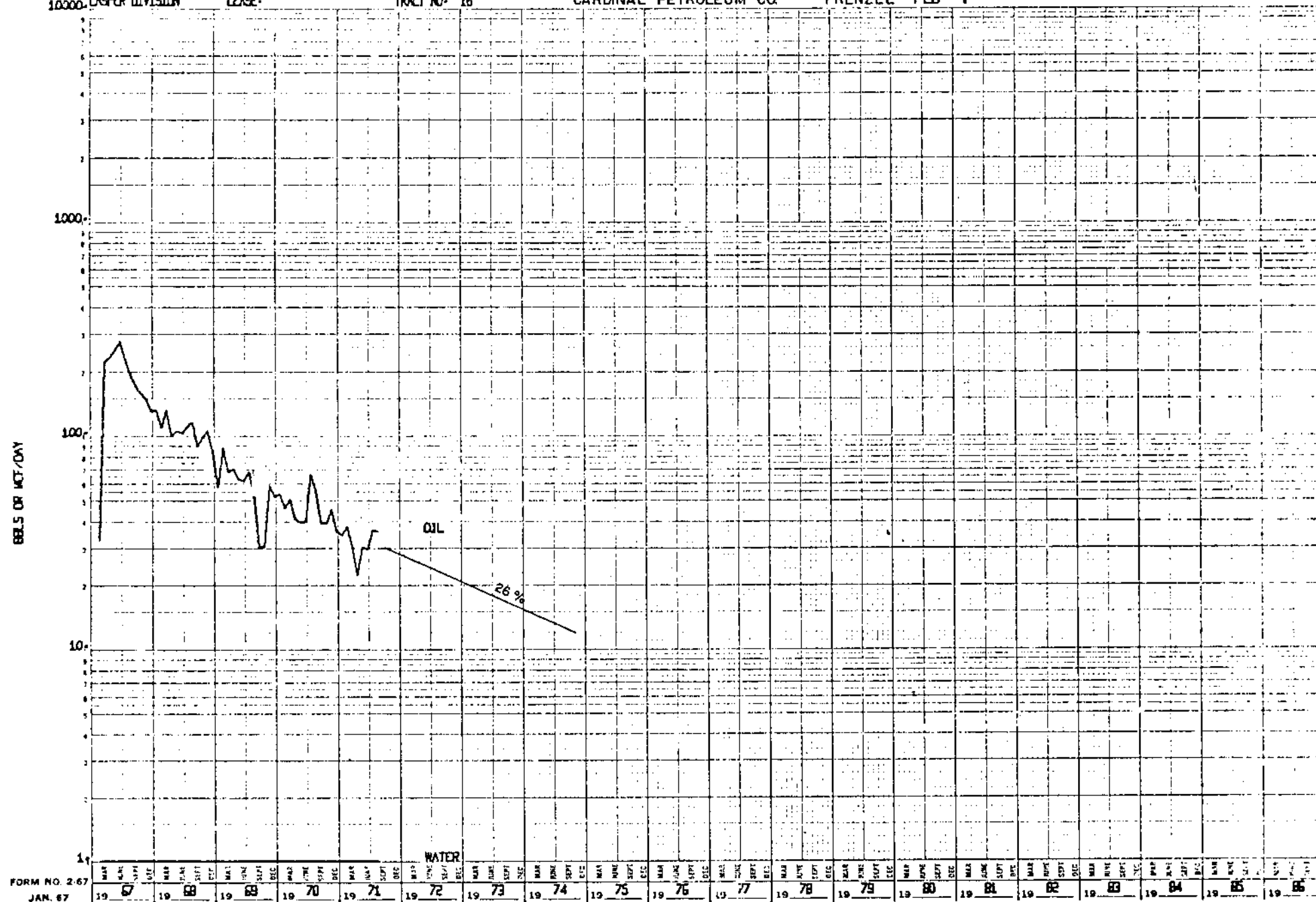


CONTINENTAL OIL CO. STATE - NORTH DAKOTA
10000 CASPER DIVISION LEASE

FIELD - DICKINSON
TRACT NO. 16

RESERVOIR - HEATH
CARDINAL PETROLEUM CO.

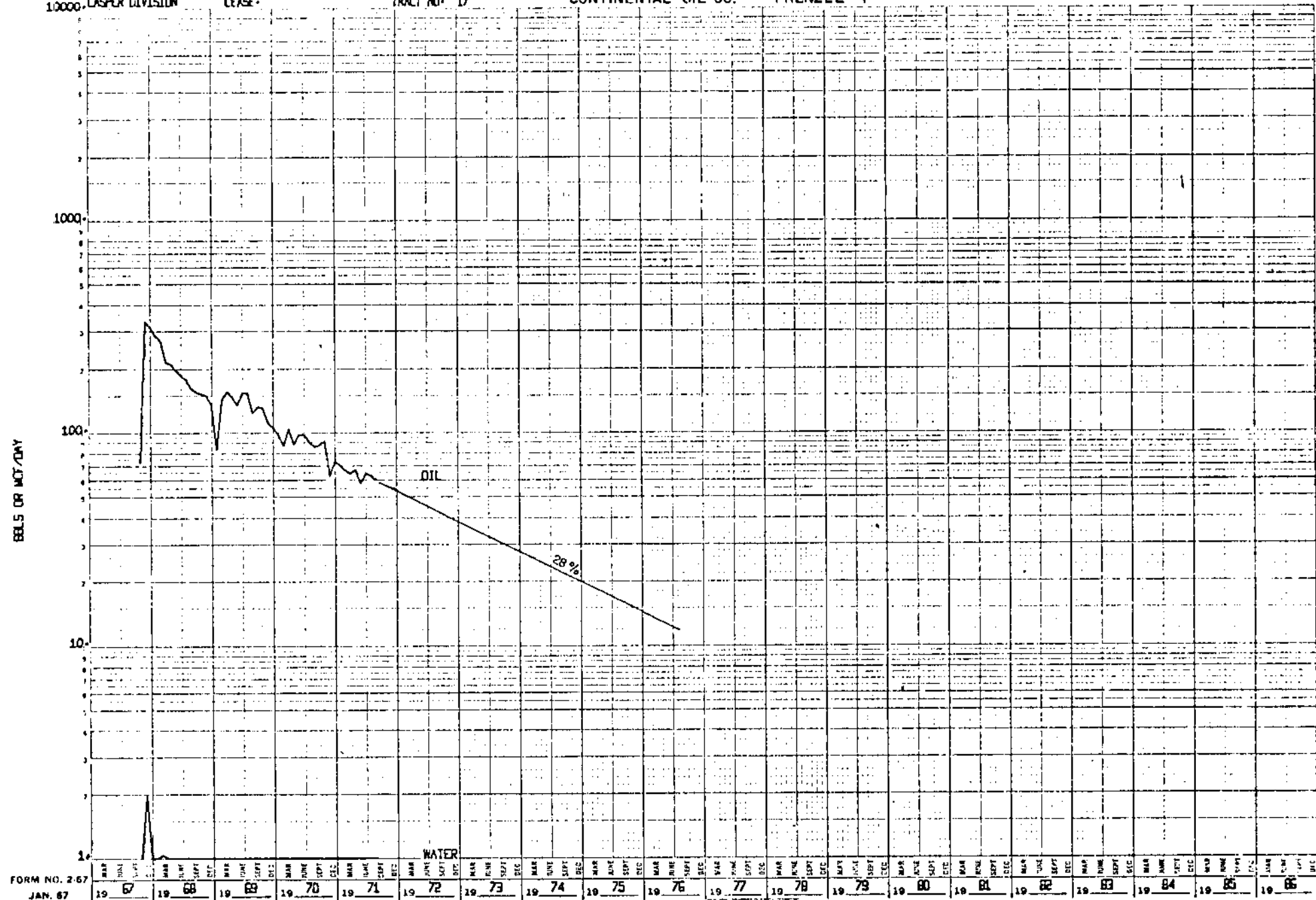
FRENZEL FLB 1



CONTINENTAL OIL CO. STATE: NORTH DAKOTA
10000 CASPER DIVISION LEASE:

FIELD: OBERKONIG
TRACT NO: 17

RESERVOIR: HEATH
CONTINENTAL OIL CO. FRENZEL I

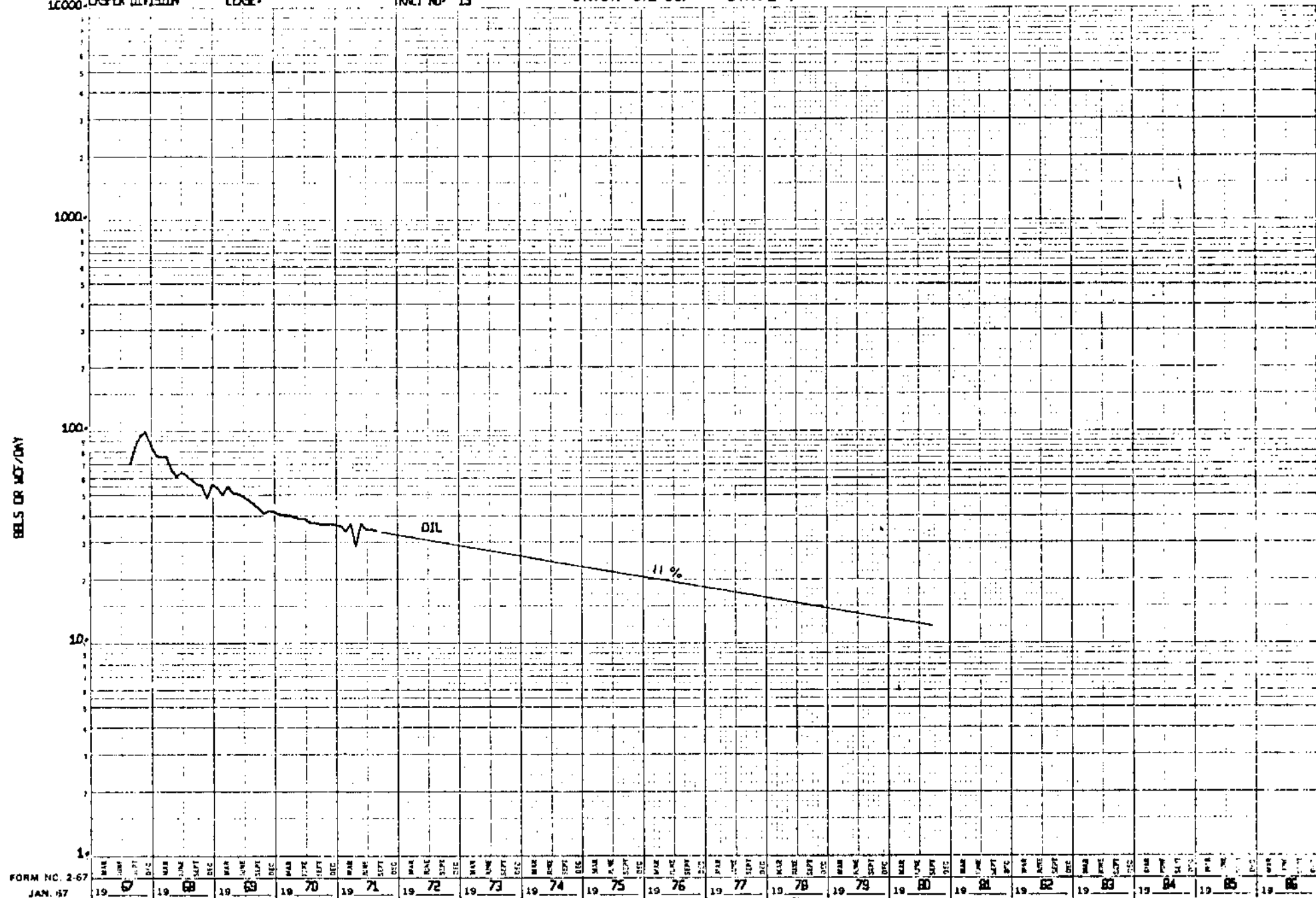


CONTINENTAL OIL CO.
10000 CASPER DIVISION

STATE- NORTH DAKOTA
LEASE-

FIELD- DICKINSON
TRACT NO- 19

RESERVOIR- HEATH
UNION OIL CO. STATE 1



CONTINENTAL OIL CO.
CASPER DIVISION

STATE - NORTH DAKOTA
LEASE -

FIELD - OGDEN
TRACT NO. 20

RESERVOIR - HEATH
SUPERIOR OIL CO. KALANEK 1

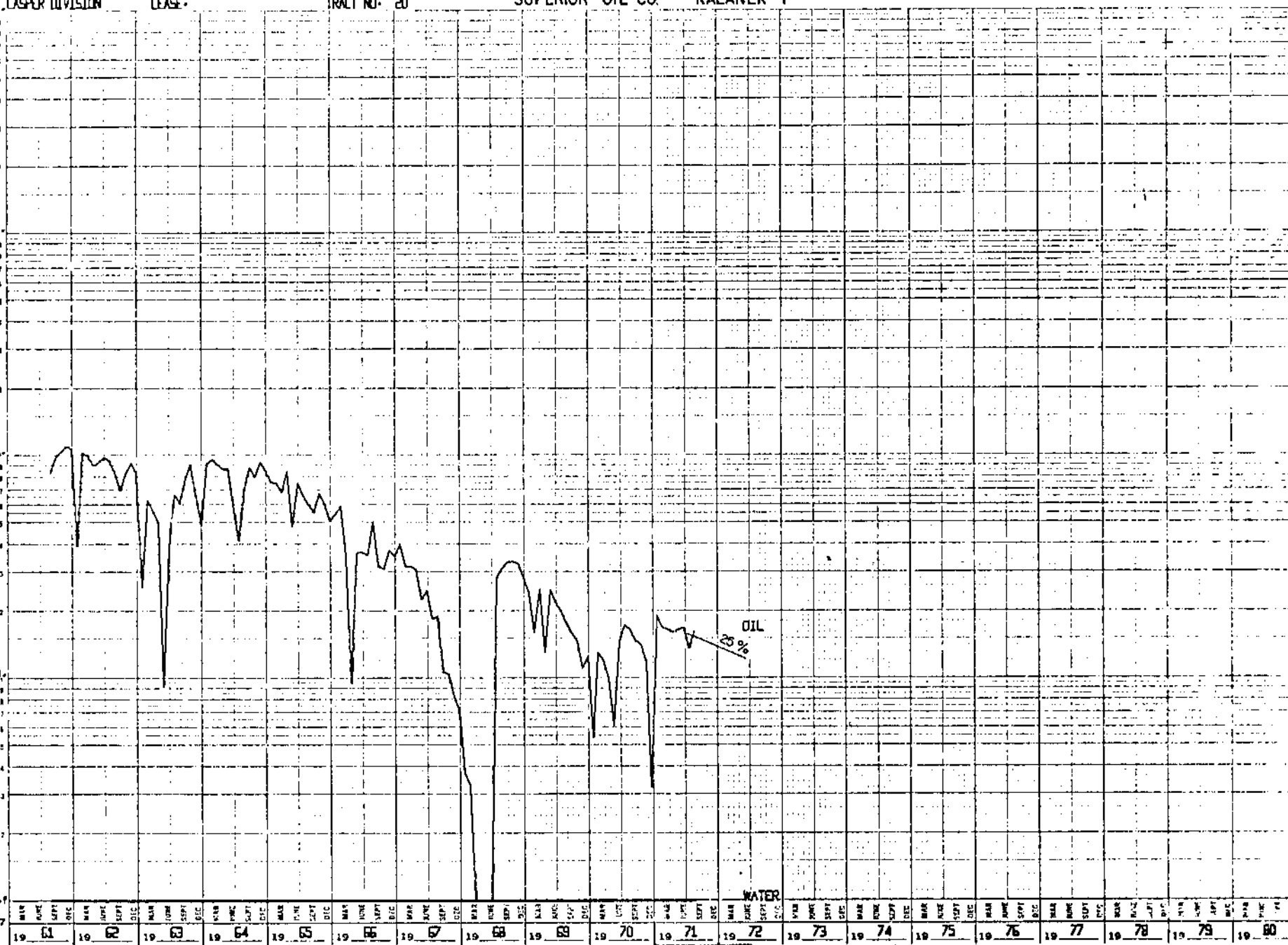
BEELS OR MCY/DAY

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10000

FORM NO. 2-67
JAN. 67



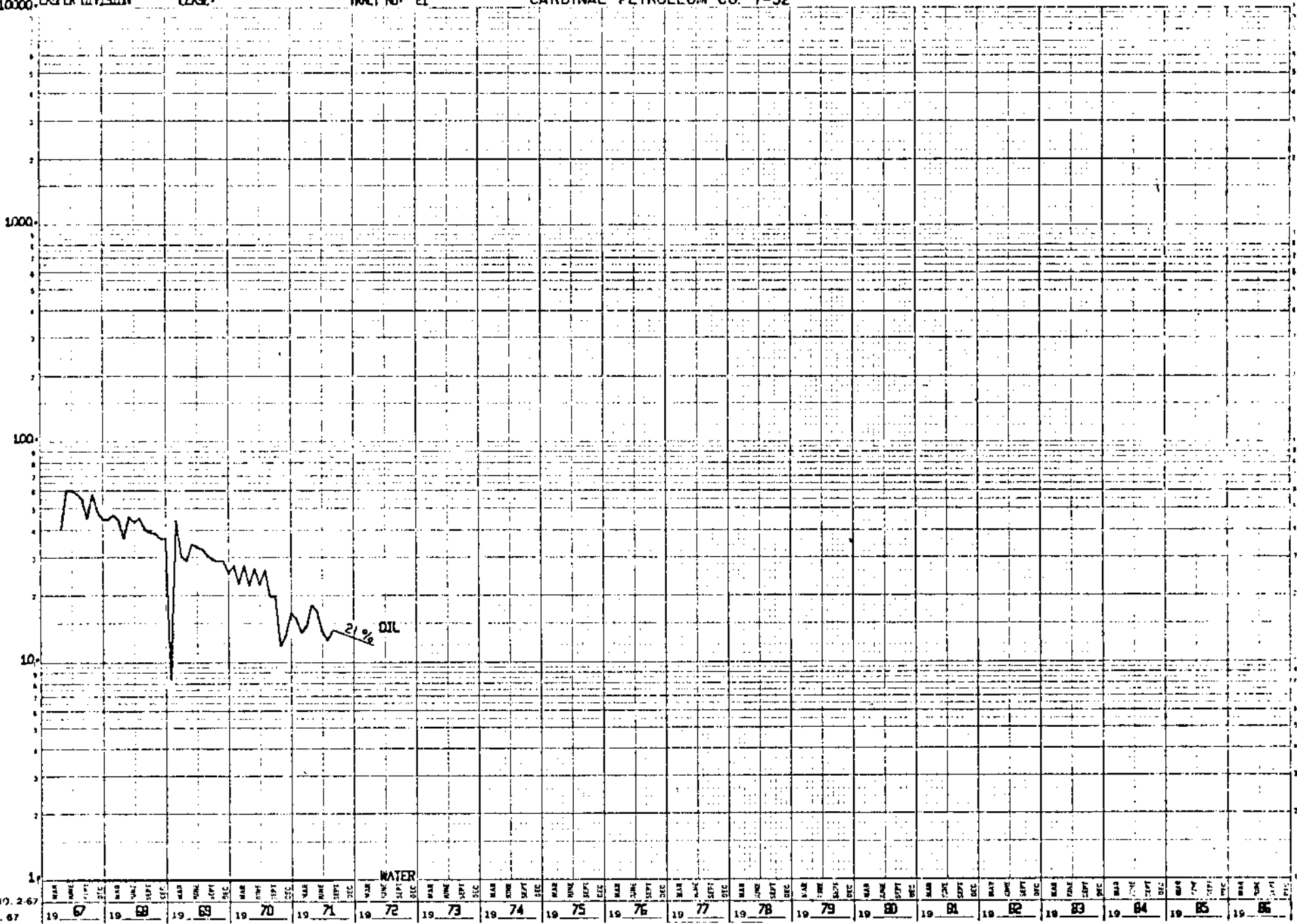
CONTINENTAL OIL CO.
CASPER DIVISION

STATE: NORTH DAKOTA
LEASE:

FIELD: DICKINSON
TRACT NO: 21

RESERVOIR: HEATH
CARDINAL PETROLEUM CO. 7-32

BBL'S OR MCF/DAY



FORM NO. 2-67
JAN. 67

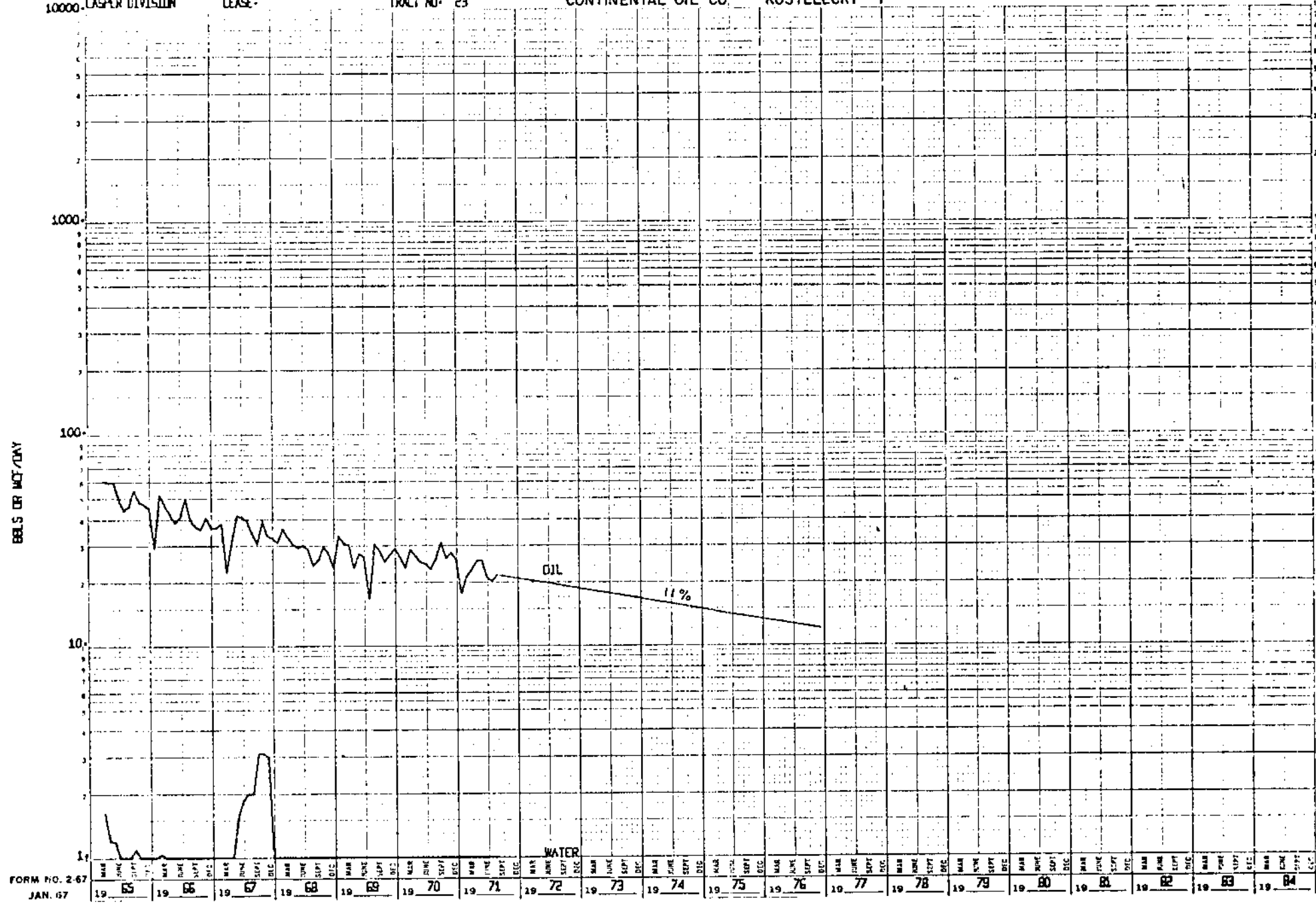
CONTINENTAL OIL CO.
CASPER DIVISION

STATE: NORTH DAKOTA
LEASE:

FIELD: DICKINSON
TRACT NO: 23

RESERVOIR: HEATH
CONTINENTAL OIL CO.

KOSTELECKY 1



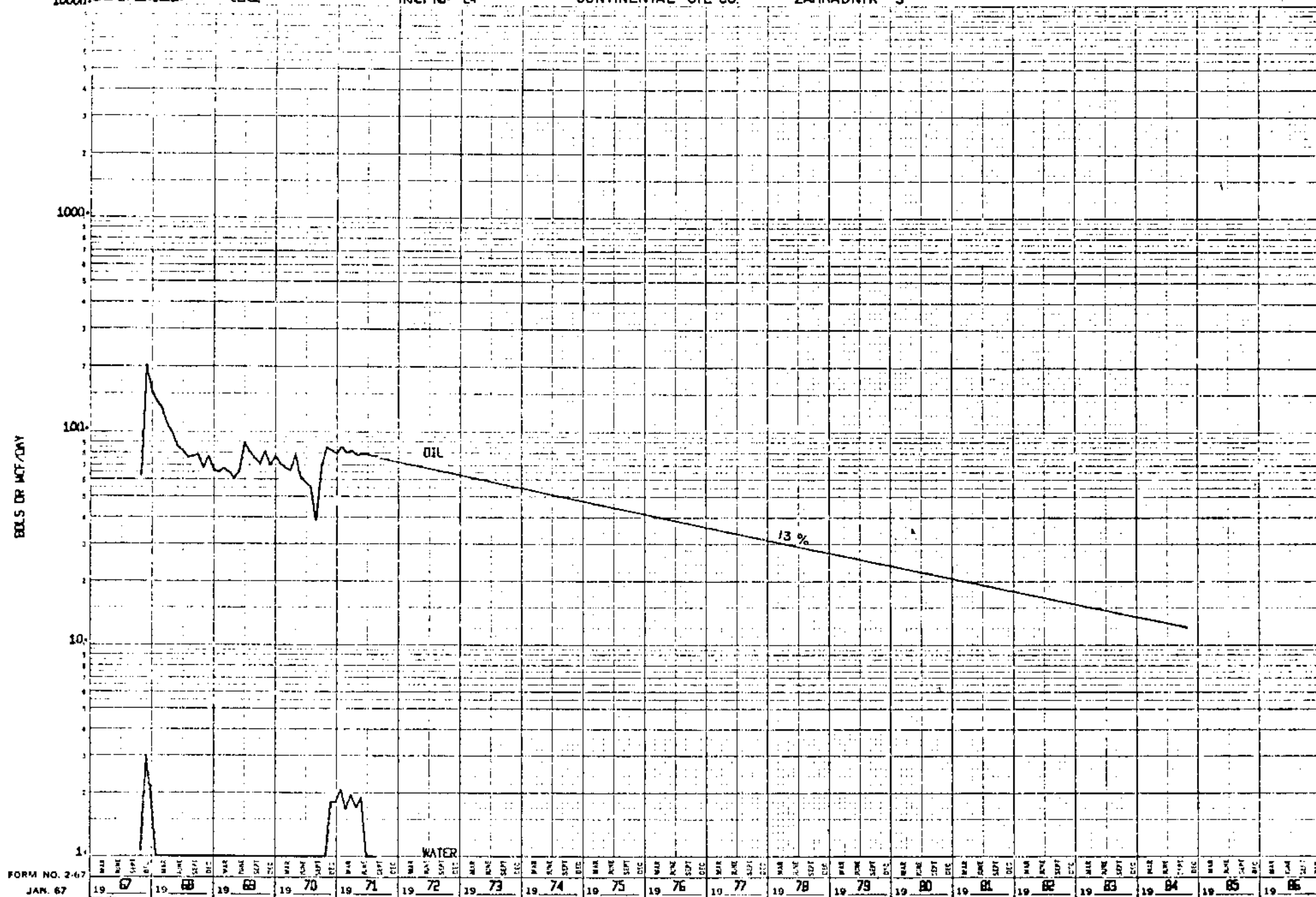
CONTINENTAL OIL CO.
10000 CASPER DIVISION

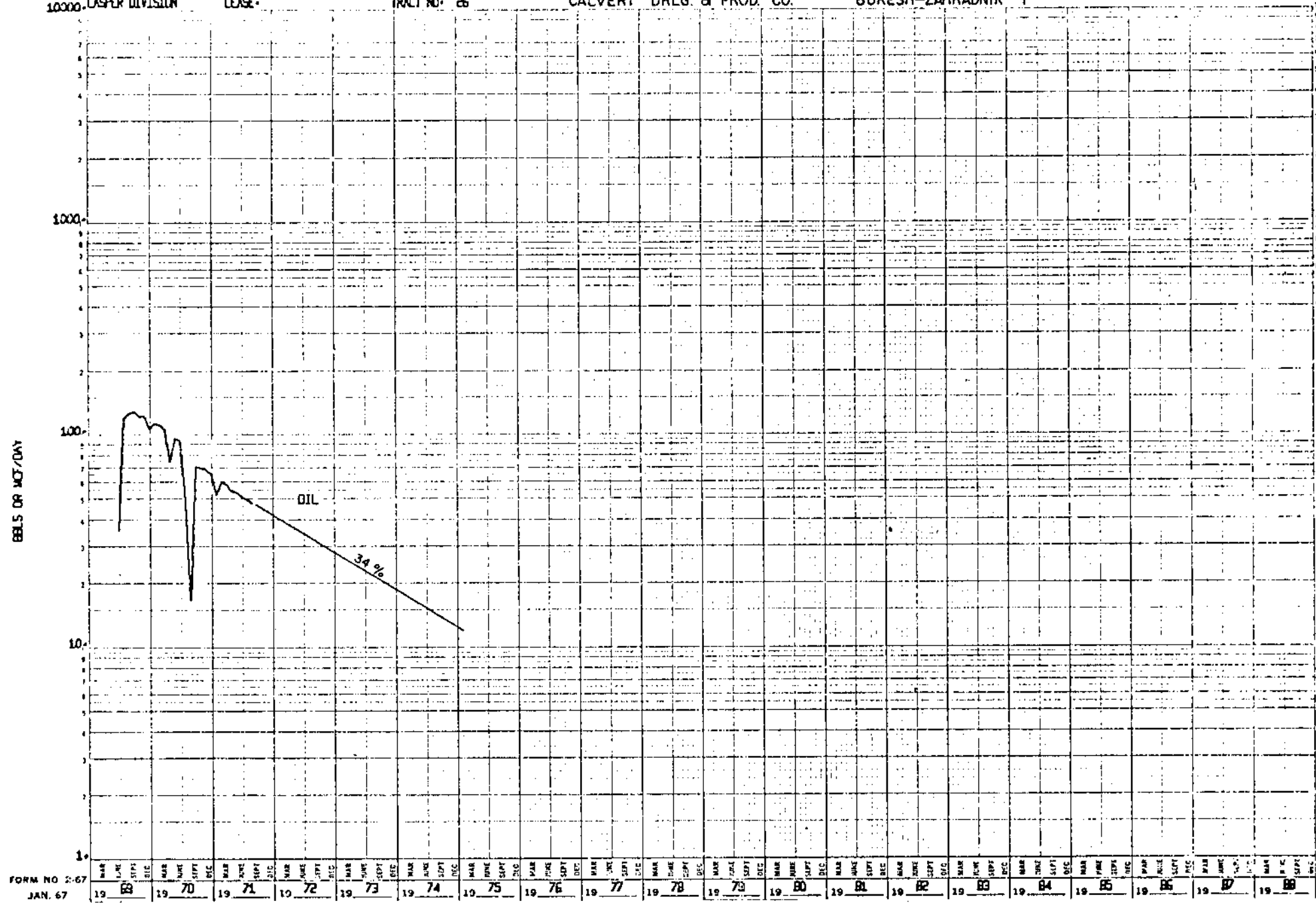
STATE- NORTH DAKOTA
LEASE-

FIELD- DICKINSON
TRACT NO- 24

RESERVOIR- HEATH
CONTINENTAL OIL CO.

ZAHRADNIK 3





CONTINENTAL OIL CO.
CASPER DIVISION

STATE- NORTH DAKOTA
LEASE-

FIELD- DICKINSON
TRACT NO- 27

RESERVOIR- HEATH
CONTINENTAL OIL CO.

KARSKY-BURESH I

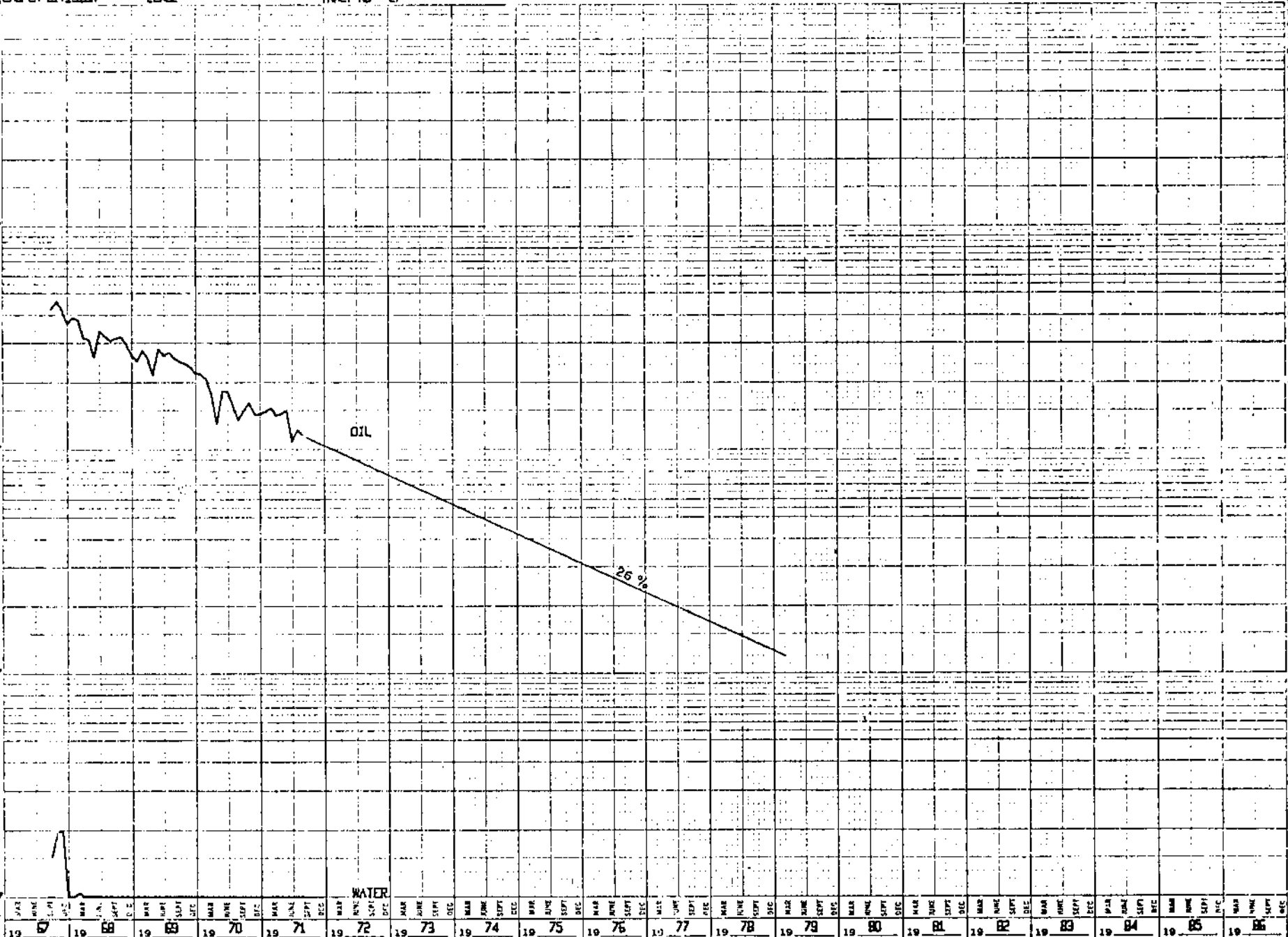
BEELS OR MCF/DAY

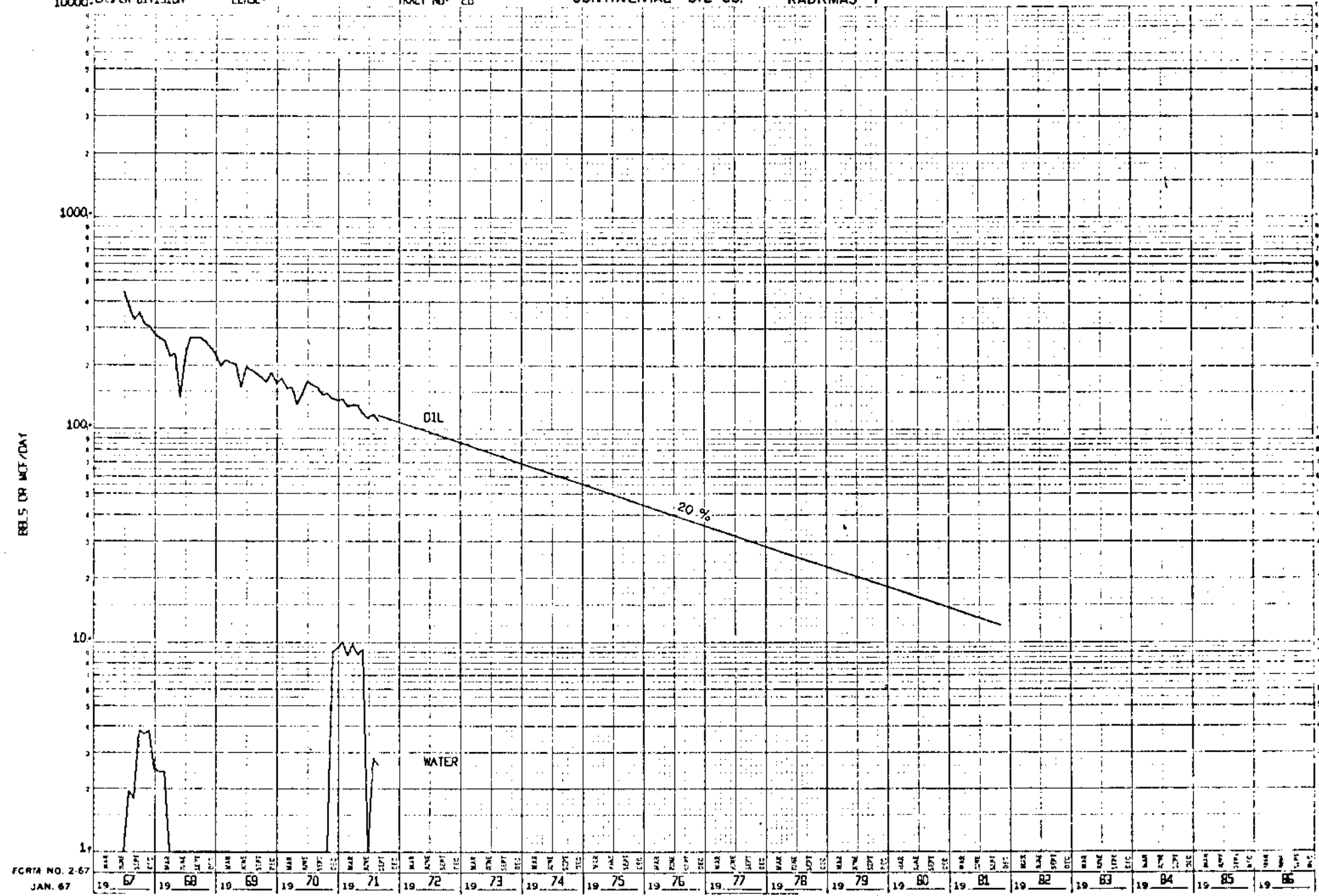
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FORM NO. 2-67
JAN. 67

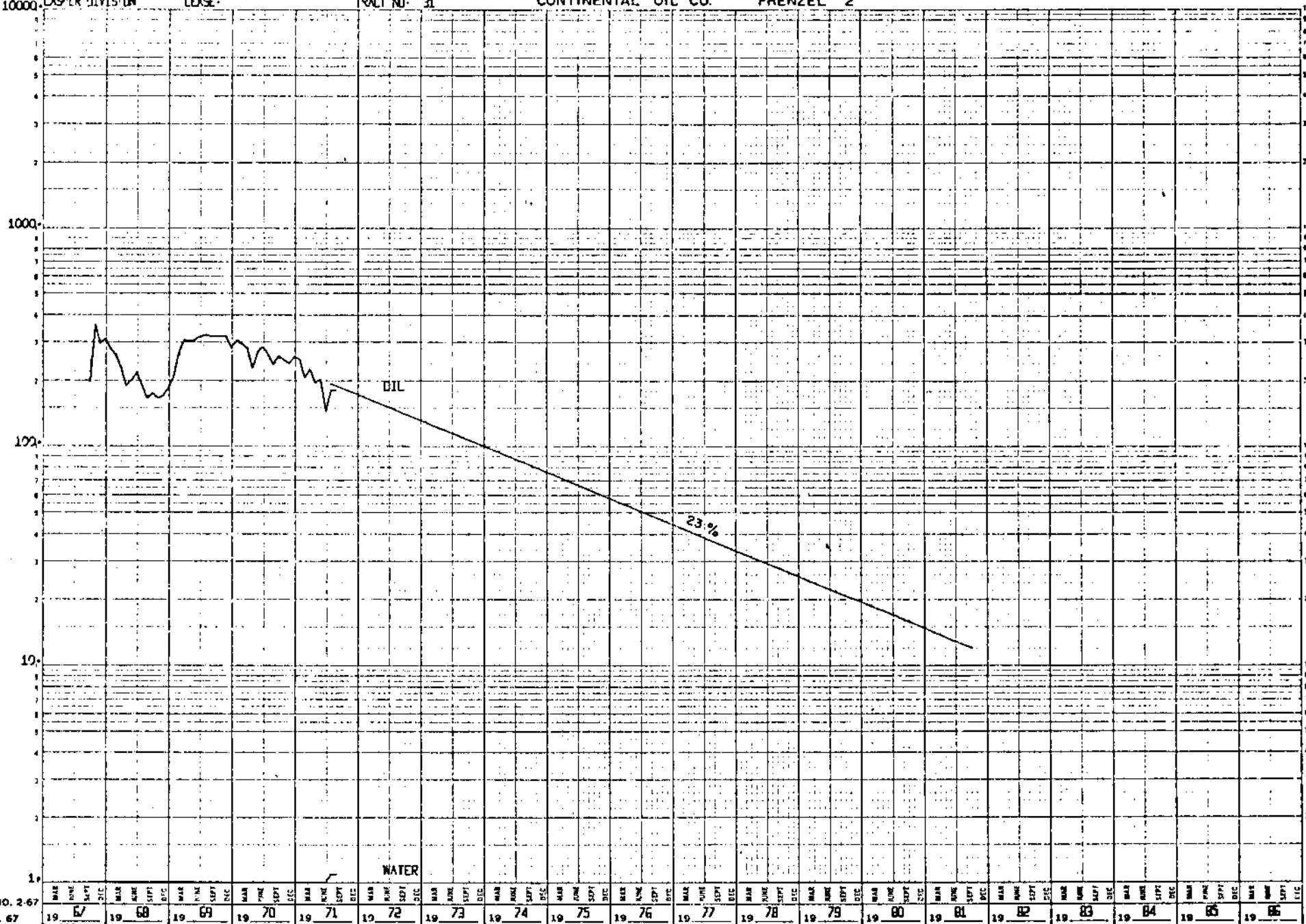




FCRTA NO. 267
 JAN. 67

CONTINENTAL OIL CO. STATE: NORTH DAKOTA FIELD: DICKINSON RESERVOIR: HEATH
 CASPER DIVISION LEASE: TRACT NO: 31 CONTINENTAL OIL CO. FRENZEL 2

33.5 OR W/FLOW



FORM NO. 2-67
 JAN. 67

MAR 67	APR 67	MAY 67	JUN 67	JUL 67	AUG 67	SEP 67	OCT 67	NOV 67	DEC 67	JAN 68	FEB 68	MAR 68	APR 68	MAY 68	JUN 68	JUL 68	AUG 68	SEP 68	OCT 68	NOV 68	DEC 68	JAN 69	FEB 69	MAR 69	APR 69	MAY 69	JUN 69	JUL 69	AUG 69	SEP 69	OCT 69	NOV 69	DEC 69	JAN 70	FEB 70	MAR 70	APR 70	MAY 70	JUN 70	JUL 70	AUG 70	SEP 70	OCT 70	NOV 70	DEC 70	JAN 71	FEB 71	MAR 71	APR 71	MAY 71	JUN 71	JUL 71	AUG 71	SEP 71	OCT 71	NOV 71	DEC 71	JAN 72	FEB 72	MAR 72	APR 72	MAY 72	JUN 72	JUL 72	AUG 72	SEP 72	OCT 72	NOV 72	DEC 72	JAN 73	FEB 73	MAR 73	APR 73	MAY 73	JUN 73	JUL 73	AUG 73	SEP 73	OCT 73	NOV 73	DEC 73	JAN 74	FEB 74	MAR 74	APR 74	MAY 74	JUN 74	JUL 74	AUG 74	SEP 74	OCT 74	NOV 74	DEC 74	JAN 75	FEB 75	MAR 75	APR 75	MAY 75	JUN 75	JUL 75	AUG 75	SEP 75	OCT 75	NOV 75	DEC 75	JAN 76	FEB 76	MAR 76	APR 76	MAY 76	JUN 76	JUL 76	AUG 76	SEP 76	OCT 76	NOV 76	DEC 76	JAN 77	FEB 77	MAR 77	APR 77	MAY 77	JUN 77	JUL 77	AUG 77	SEP 77	OCT 77	NOV 77	DEC 77	JAN 78	FEB 78	MAR 78	APR 78	MAY 78	JUN 78	JUL 78	AUG 78	SEP 78	OCT 78	NOV 78	DEC 78	JAN 79	FEB 79	MAR 79	APR 79	MAY 79	JUN 79	JUL 79	AUG 79	SEP 79	OCT 79	NOV 79	DEC 79	JAN 80	FEB 80	MAR 80	APR 80	MAY 80	JUN 80	JUL 80	AUG 80	SEP 80	OCT 80	NOV 80	DEC 80	JAN 81	FEB 81	MAR 81	APR 81	MAY 81	JUN 81	JUL 81	AUG 81	SEP 81	OCT 81	NOV 81	DEC 81	JAN 82	FEB 82	MAR 82	APR 82	MAY 82	JUN 82	JUL 82	AUG 82	SEP 82	OCT 82	NOV 82	DEC 82	JAN 83	FEB 83	MAR 83	APR 83	MAY 83	JUN 83	JUL 83	AUG 83	SEP 83	OCT 83	NOV 83	DEC 83	JAN 84	FEB 84	MAR 84	APR 84	MAY 84	JUN 84	JUL 84	AUG 84	SEP 84	OCT 84	NOV 84	DEC 84	JAN 85	FEB 85	MAR 85	APR 85	MAY 85	JUN 85	JUL 85	AUG 85	SEP 85	OCT 85	NOV 85	DEC 85
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CONTINENTAL OIL CO.
CASPER DIVISION

STATE- NORTH DAKOTA
LEASE-

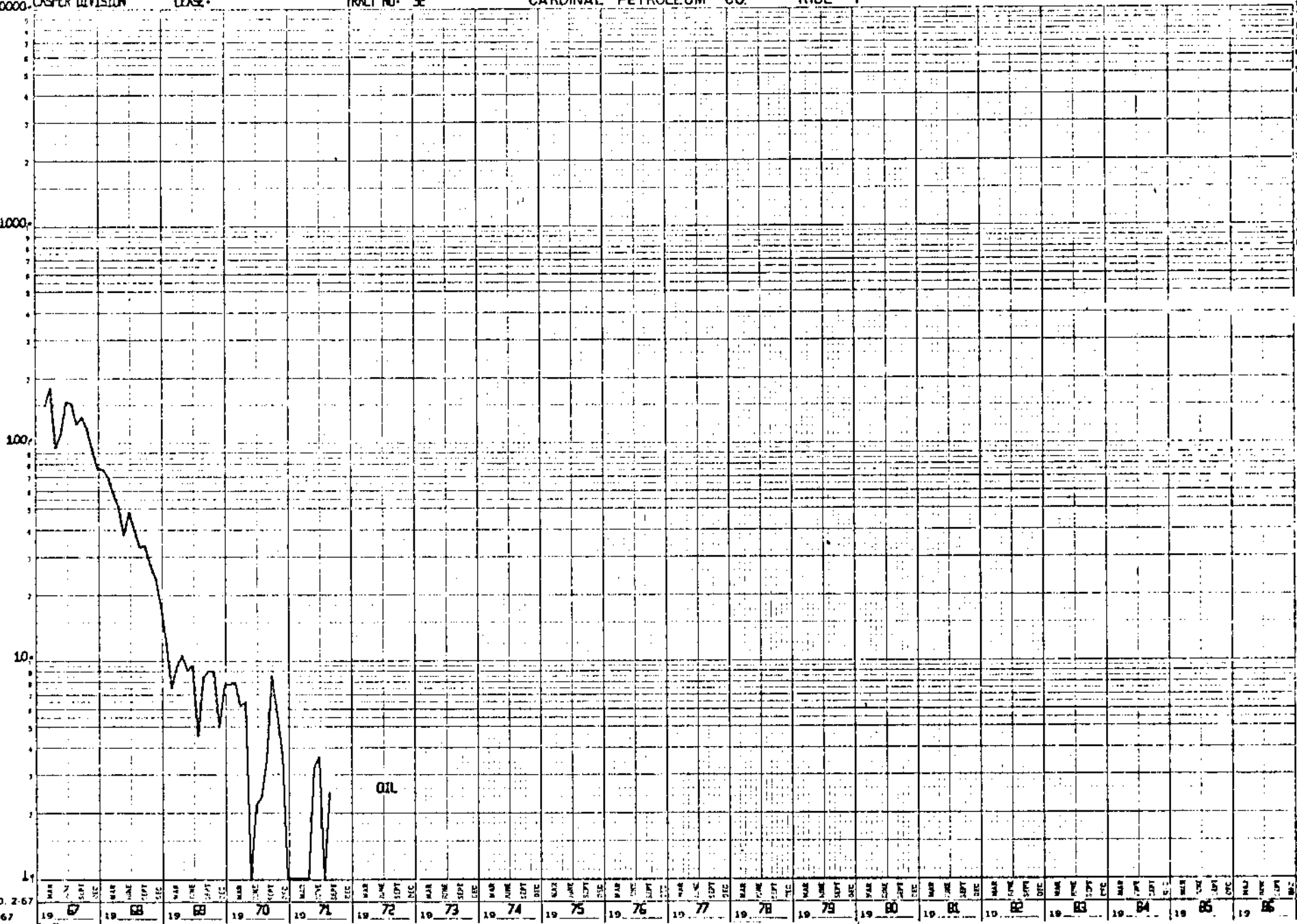
FIELD- OILKINDEN
TRACT NO- 32

RESERVOIR- HEATH
CARDINAL PETROLEUM CO.

RIDG 1

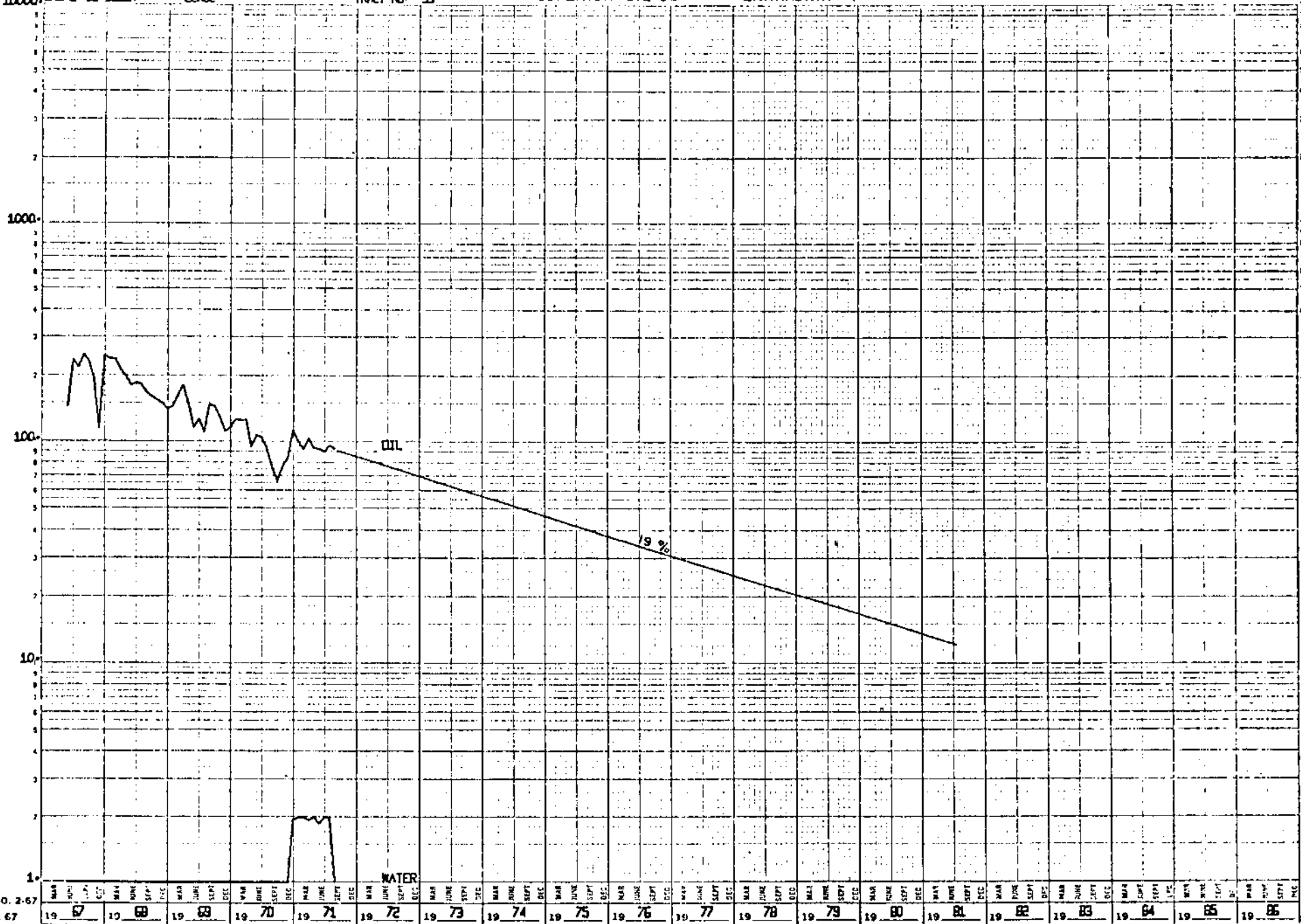
BBL'S OR MC/DAY

FORM NO. 2-67
JAN. 67

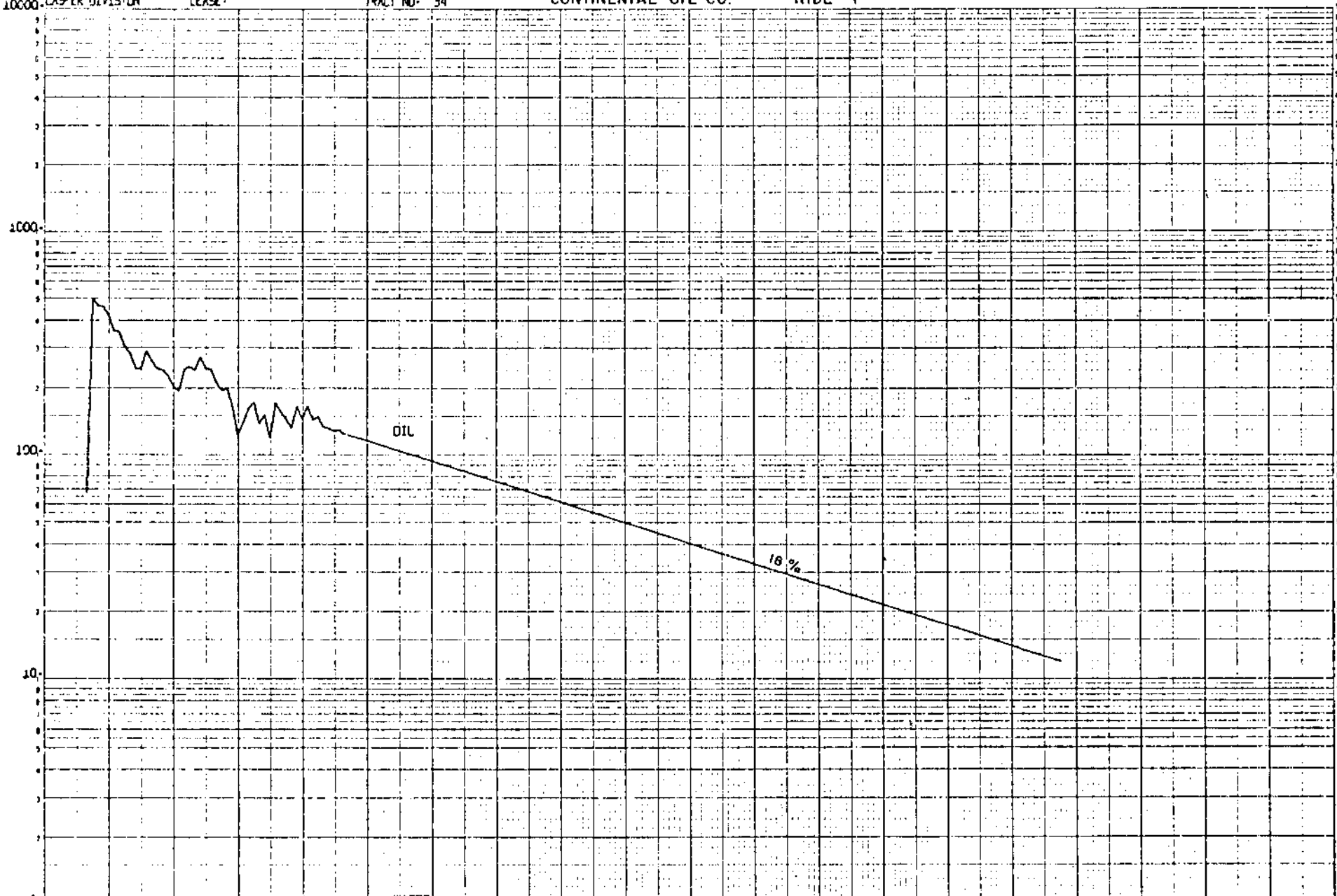


BARRELS OF OIL / DAY

FORM NO. 2-67
 JAN. 67



BBLS OR MCF/DAY

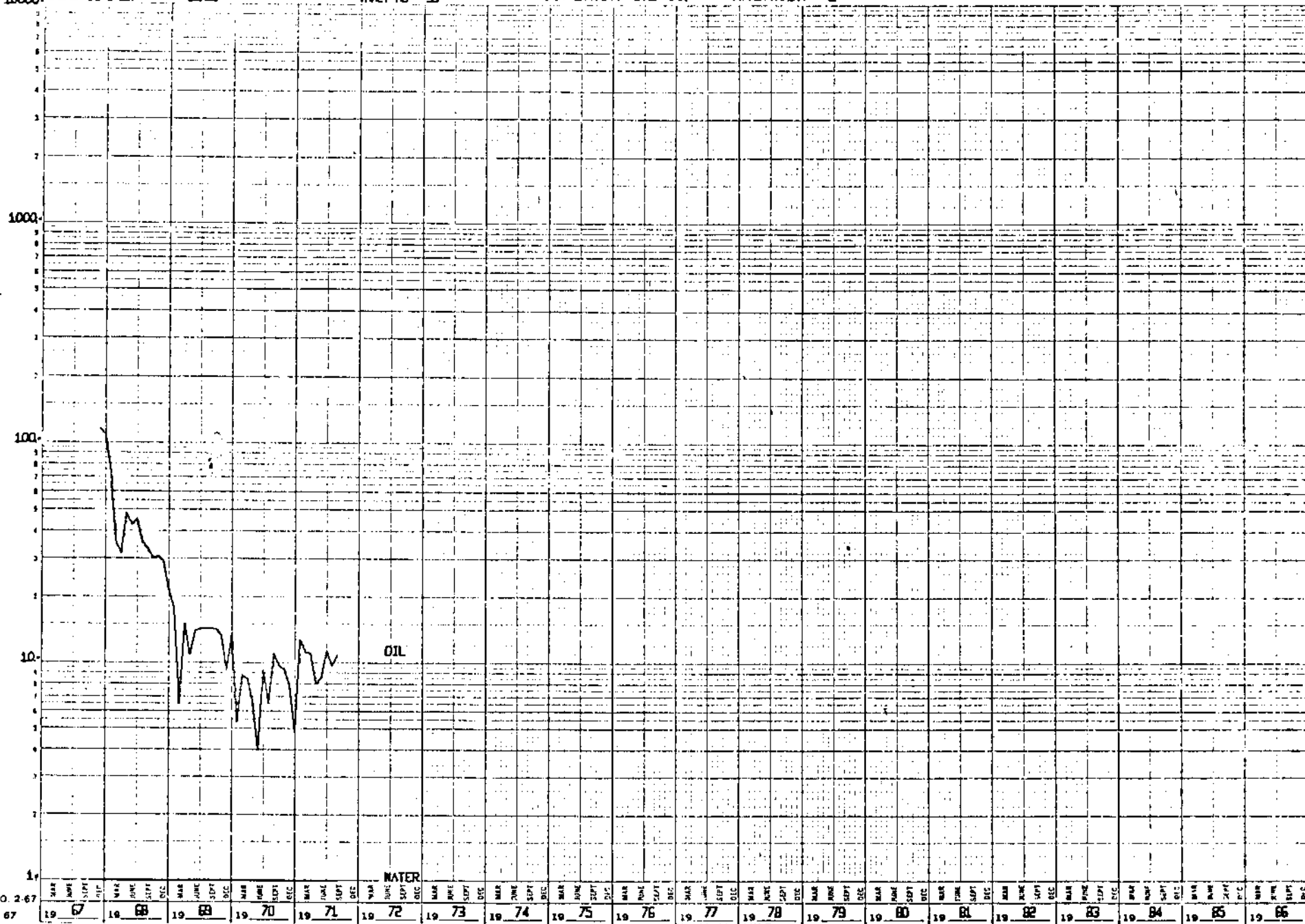


FORM NO. 2-67
 JAN. 67

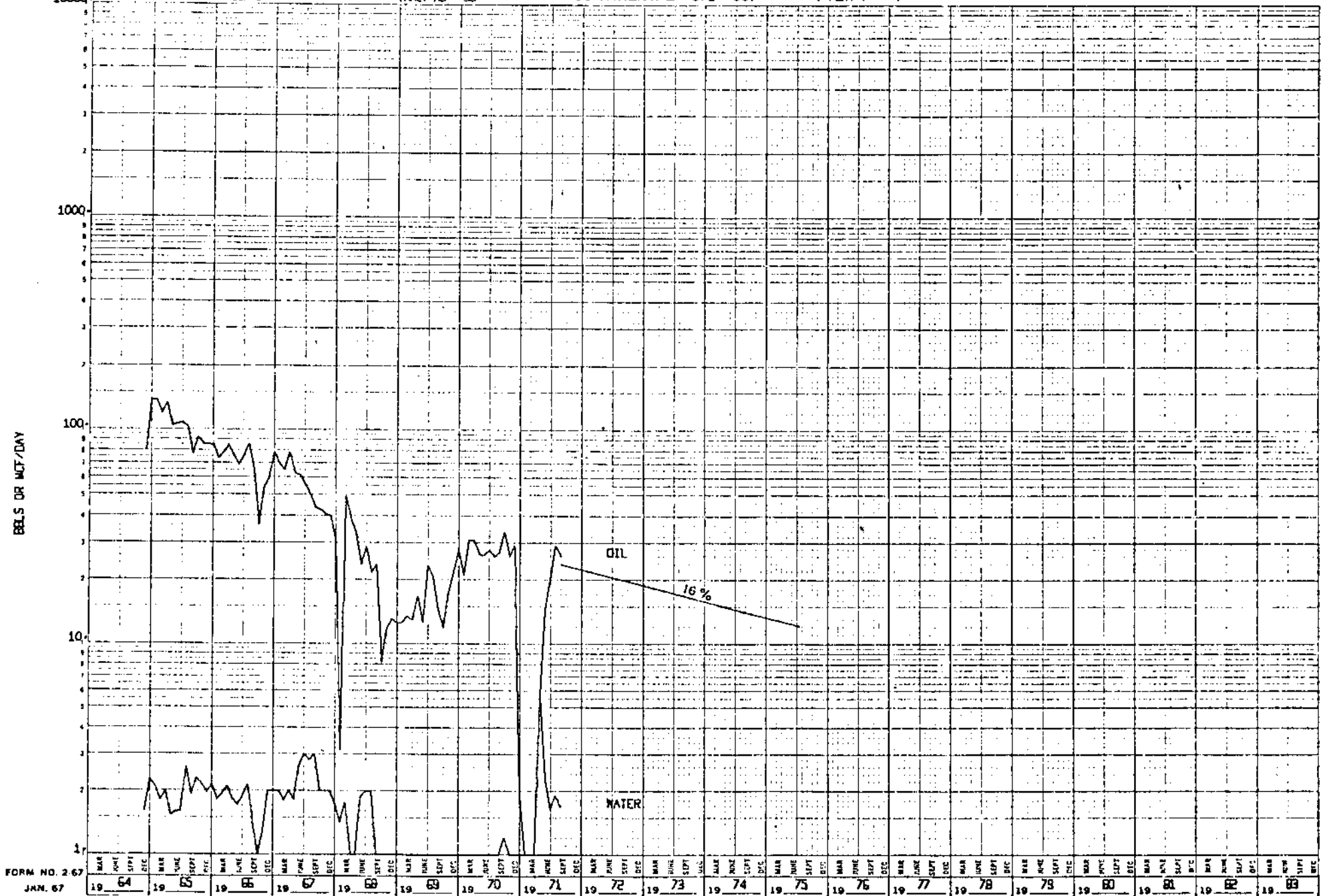
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CONTINENTAL OIL CO. STATE- NORTH DAKOTA FIELD- DICKINSON RESERVOIR- HEATH
 CASPER DIVISION LEASE- TRACT NO- 35 SUPERIOR OIL CO. KALANEK 2

BEELS OR MCF/DAY



FORM NO. 2-67
 JAN. 67



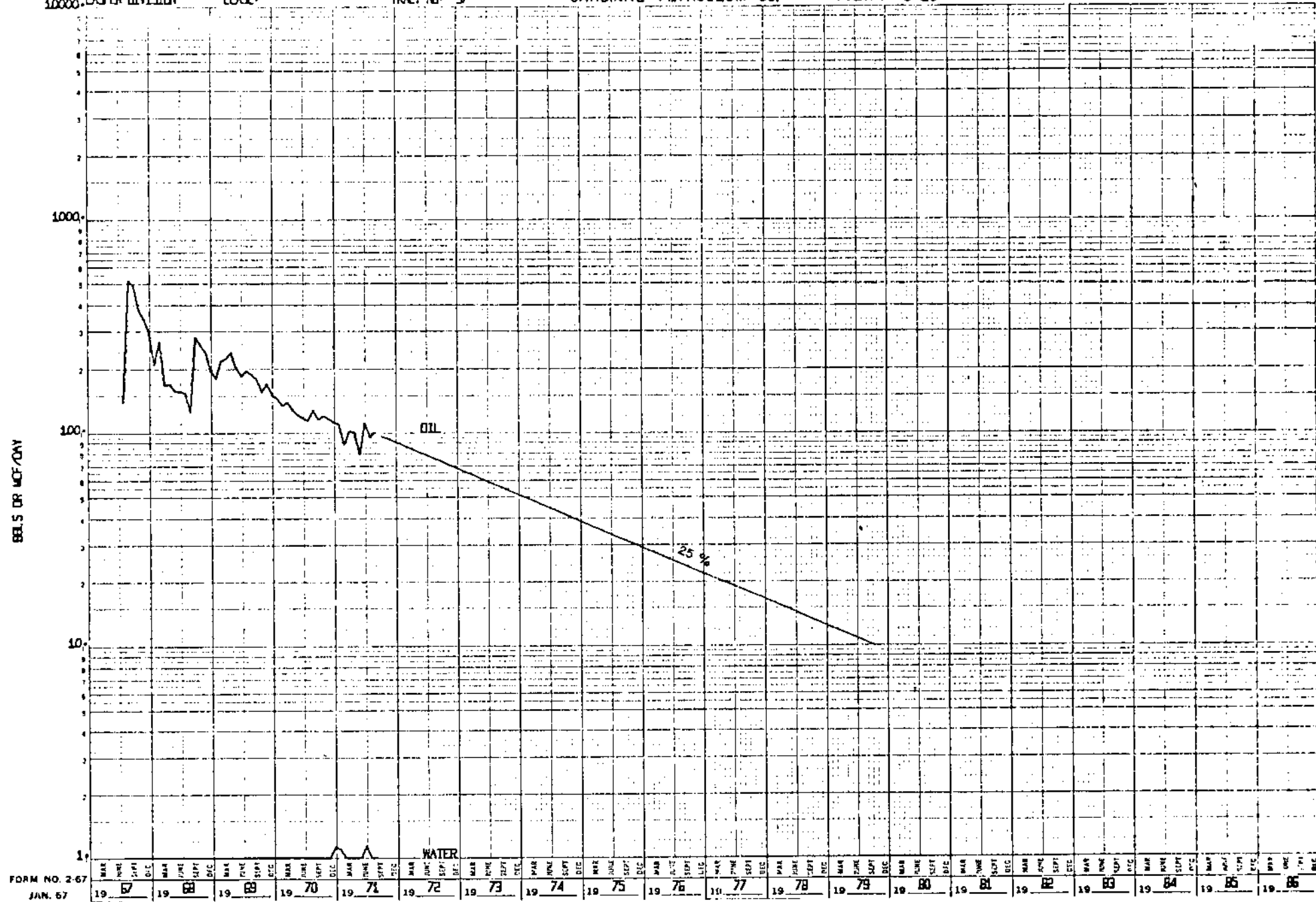
CONTINENTAL OIL CO.
10000 CASPER DIVISION

STATE - NORTH DAKOTA
LEASE

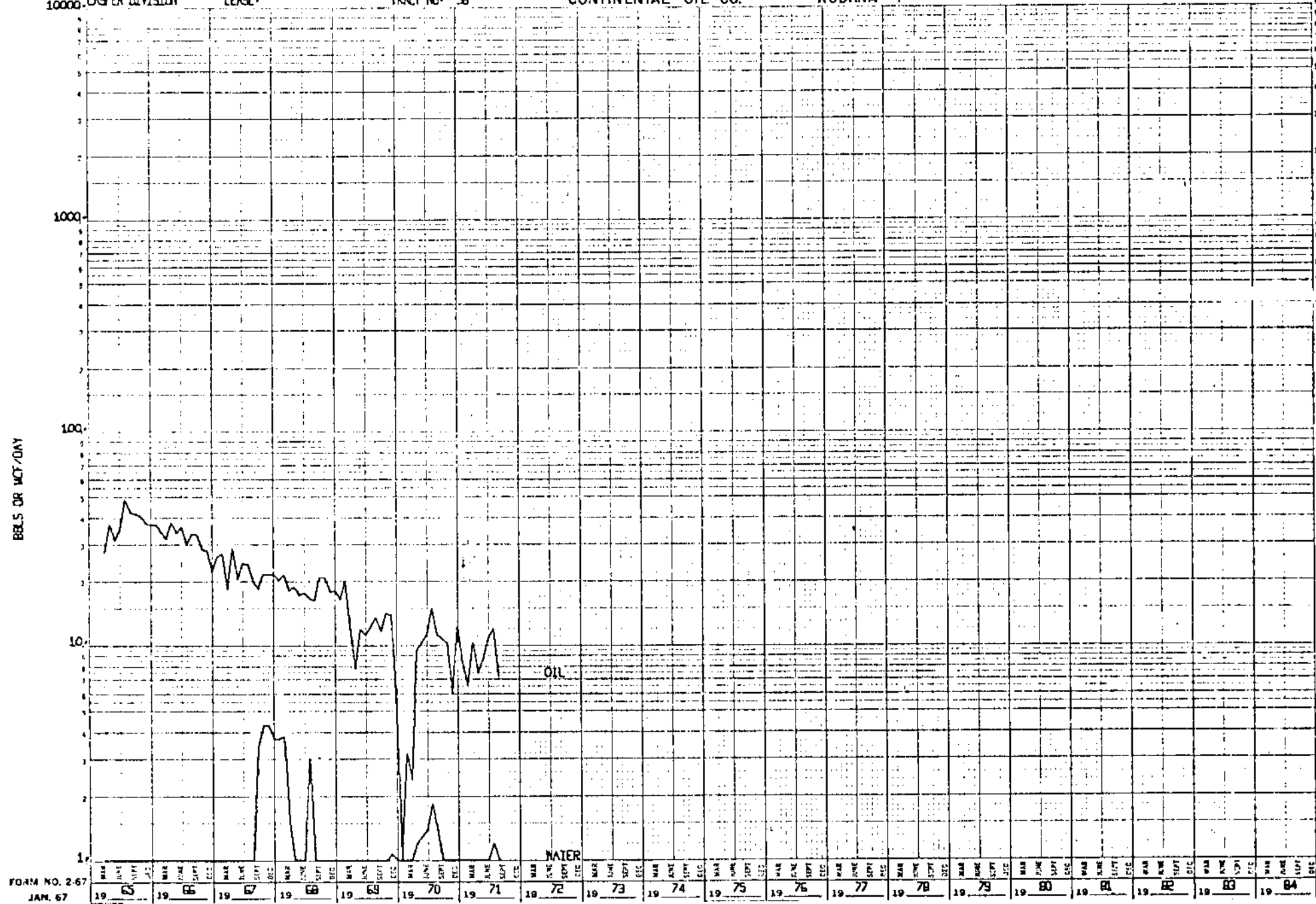
FIELD - DICKINSON
TRACT NO. 37

RESERVOIR - HEATH
CARDINAL PETROLEUM CO.

FILIP 5-29



CONTINENTAL OIL CO. STATE- NORTH DAKOTA FIELD- DICKINSON RESERVOIR- HEATH
CASPER DIVISION LEASE- TRACT NO- 38 CONTINENTAL OIL CO. KUDRNA I



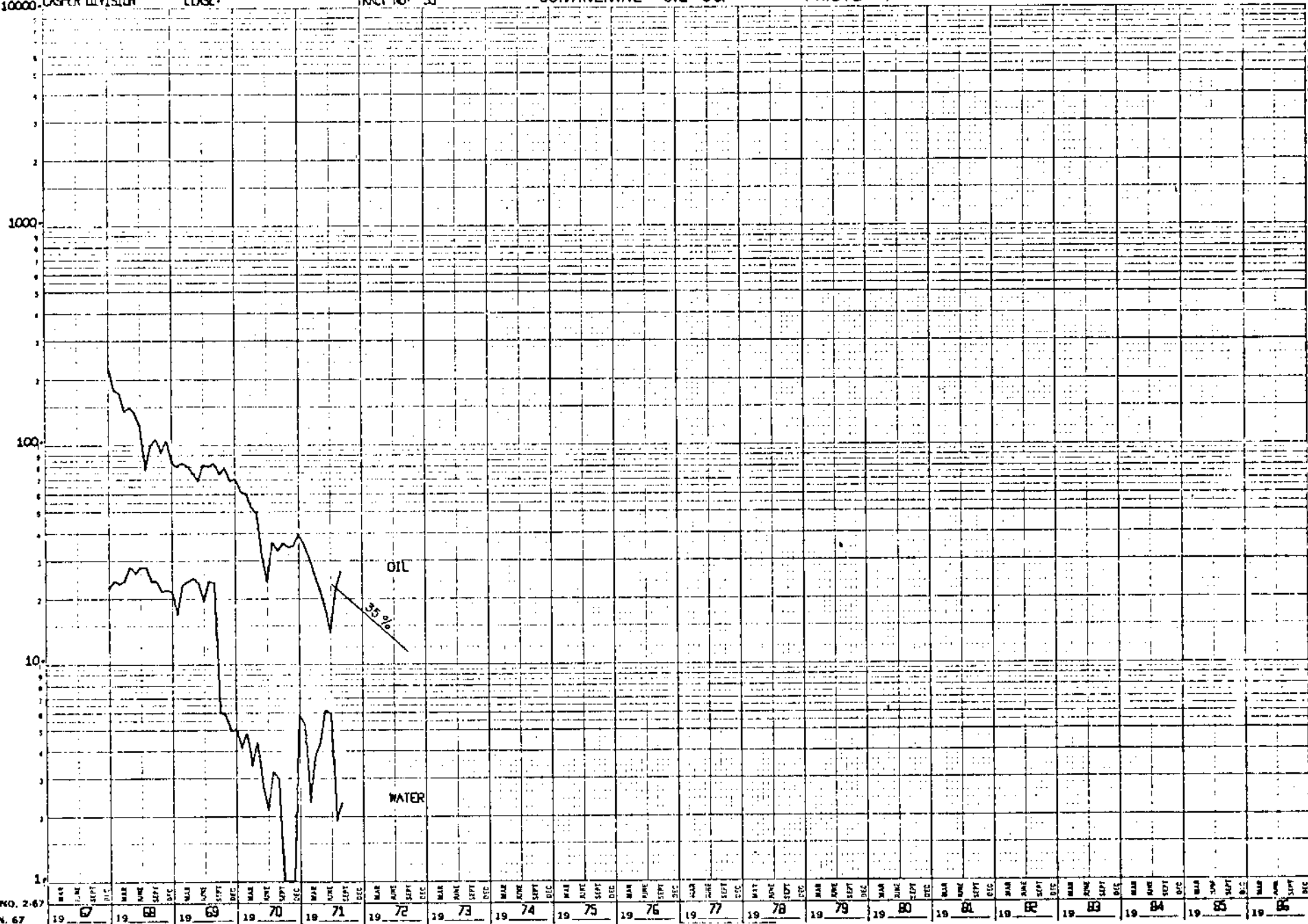
CONTINENTAL OIL CO. STATE: NORTH DAKOTA
10000 CASPER DIVISION LEASE:

FIELD: DICKINSON
TRACT NO. 39

RESERVOIR: HEATH
CONTINENTAL OIL CO.

PRIBYL 1

BBL'S OR MCF/DAY



FORM NO. 2-67
JAN. 67

CONTINENTAL OIL CO.
CASPER DIVISION

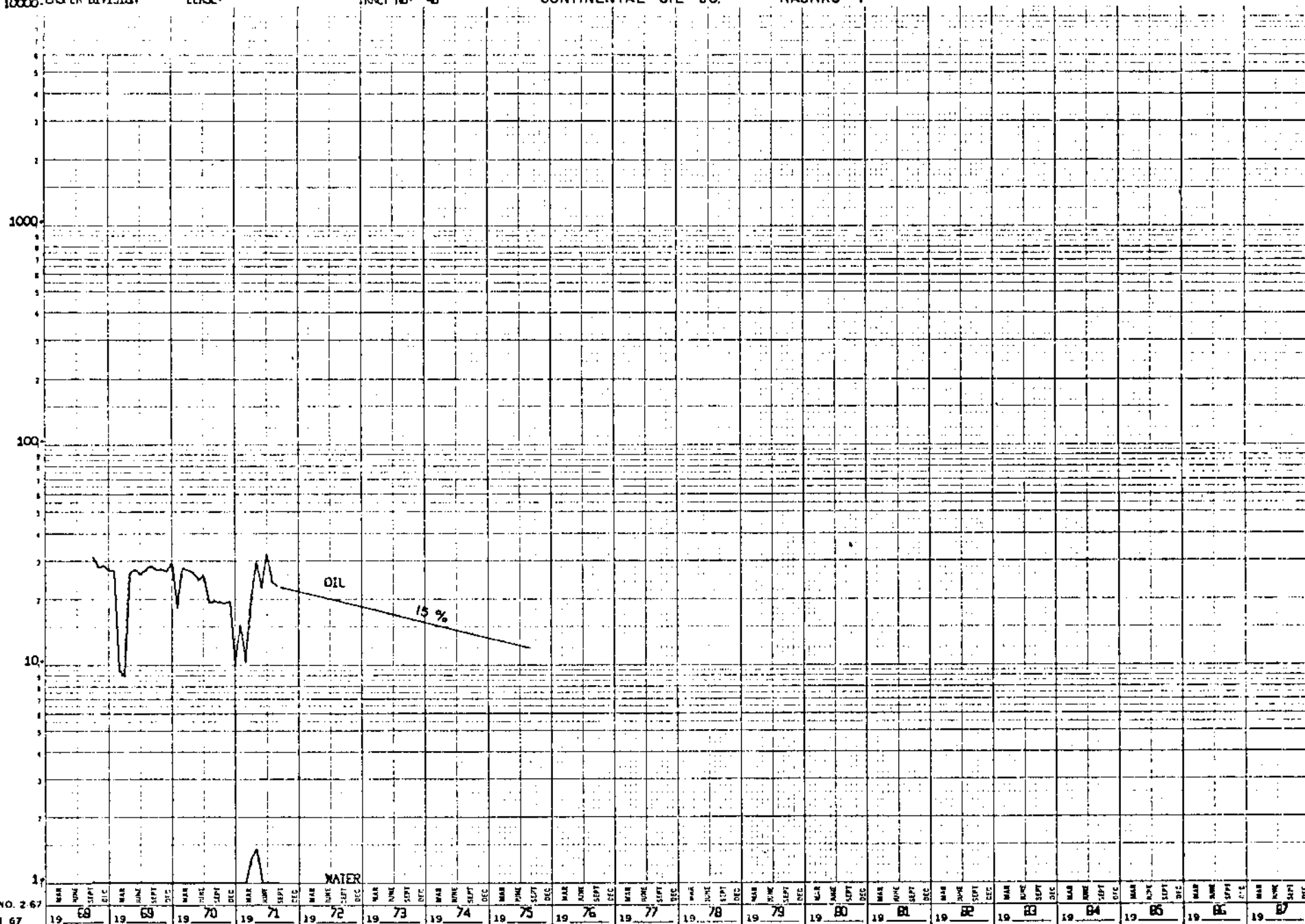
STATE- NORTH DAKOTA
LEASE-

FIELD- BUCKLESON
TRACT NO- 40

RESERVOIR- HEATH
CONTINENTAL OIL CO.

RASHKO I

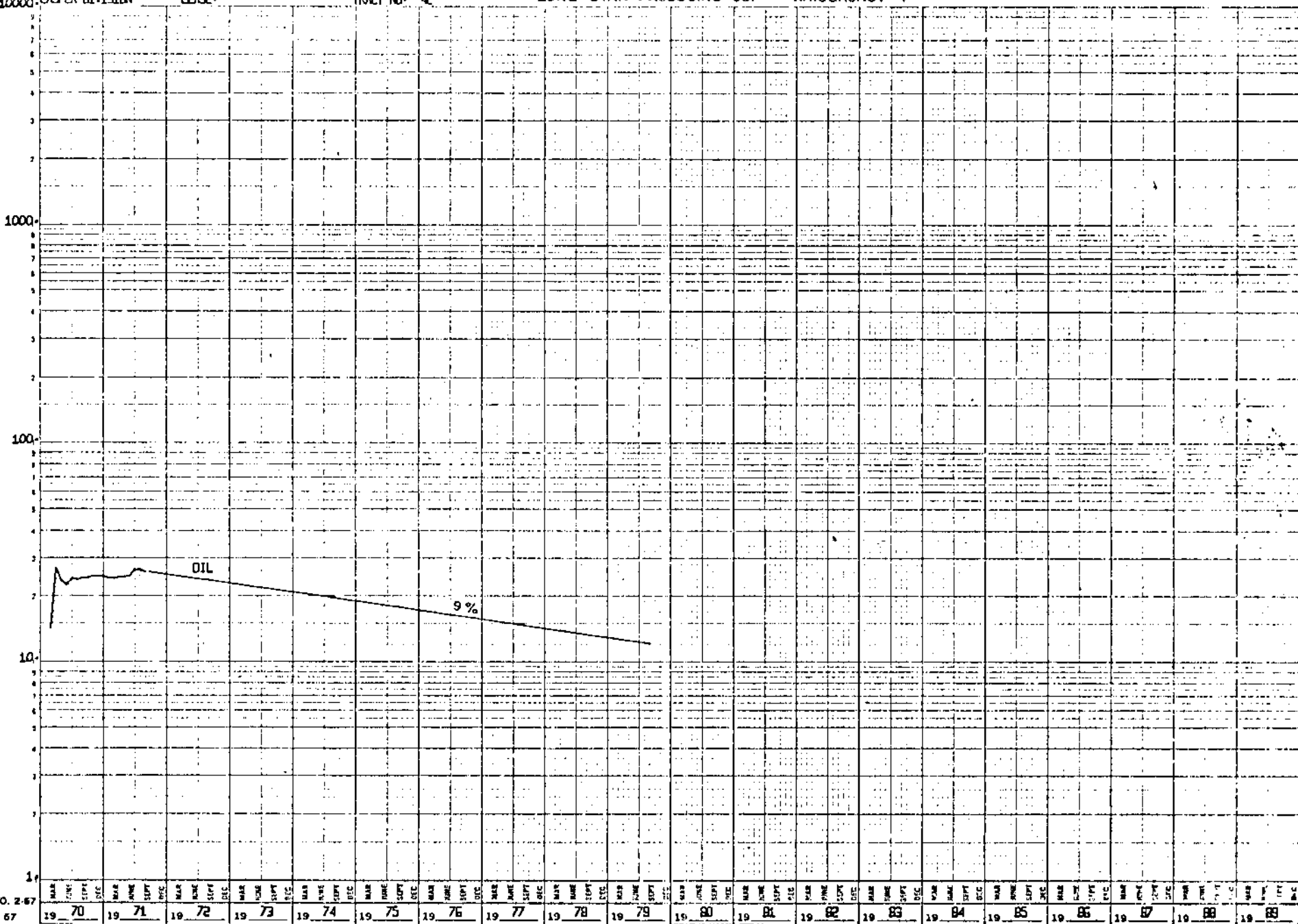
BBL'S OR MCF/DAY



FORM NO. 267
JAN 67

CONTINENTAL OIL CO. STATE: NORTH DAKOTA FIELD: DICKINSON RESERVOIR: HEATH
 10000 CASPER DIVISION LEASE: TRACT NO: 42 LONE STAR PRODUCING CO. KAISERSHOT 1

BELS OR MCF/DAY



FORM NO. 2-67
 JAN. 67

CONTINENTAL OIL CO.
10000 CASPER DIVISION

STATE - NORTH DAKOTA
LEASE -

FIELD - BICKELSON
TRACT NO. 46

RESERVOIR - HEATH
CARDINAL PETROLEUM CO.

RIDL 15-19

BBL'S OR HCF/DAY

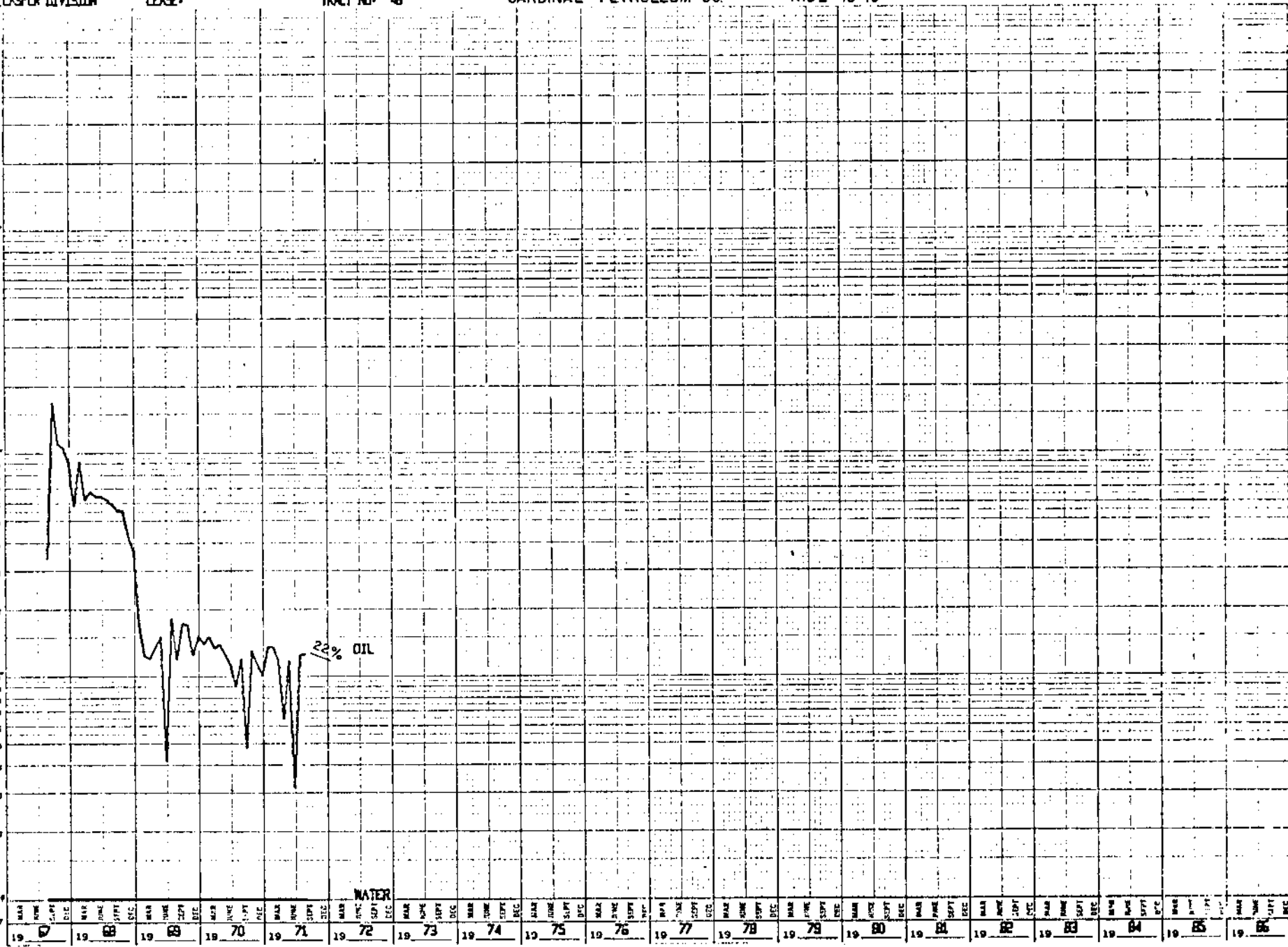
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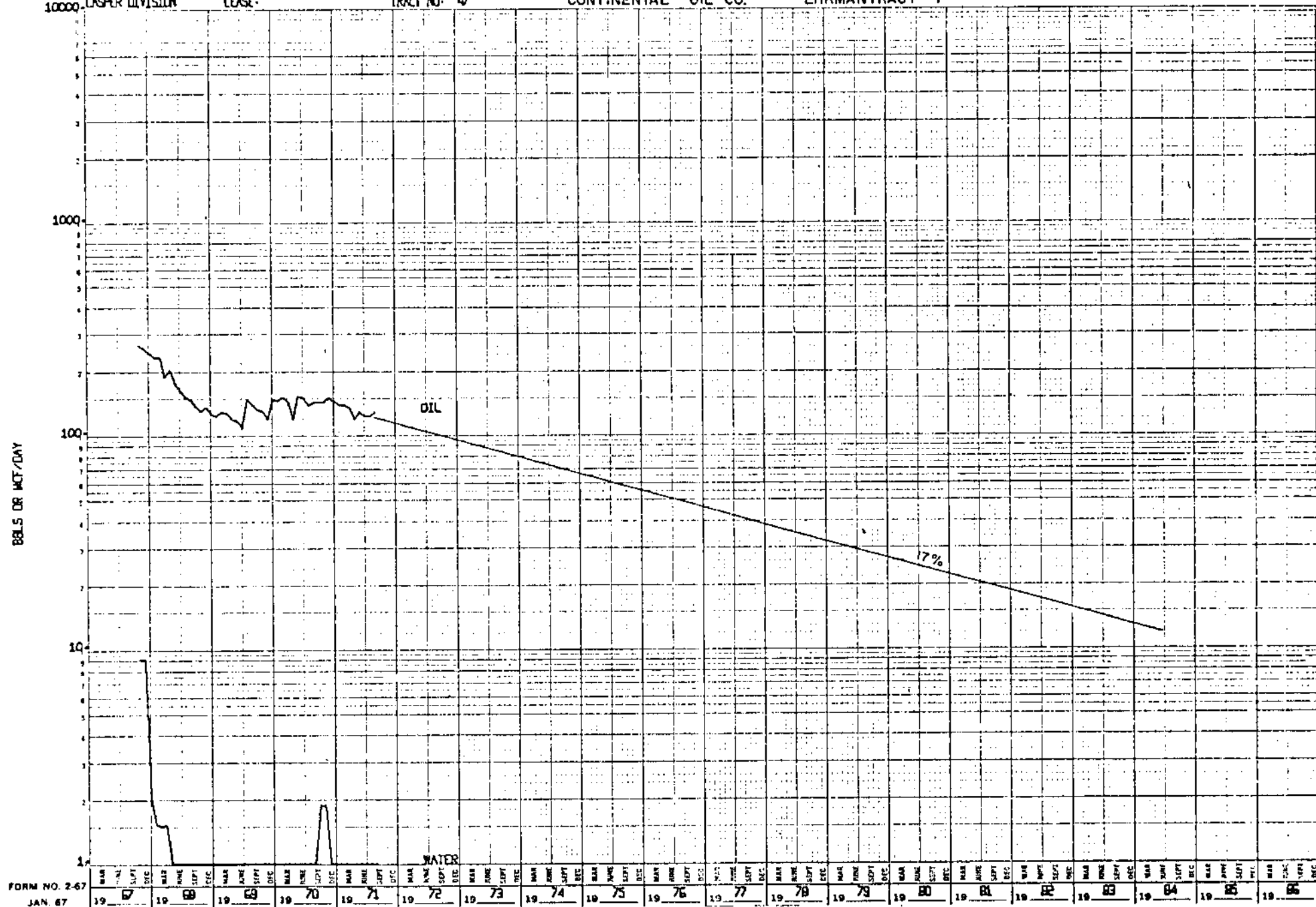
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FORM NO. 2-67
JAN. 67





FORM NO. 2-67
JAN. 67

CONTINENTAL OIL CO.
CASPER DIVISION

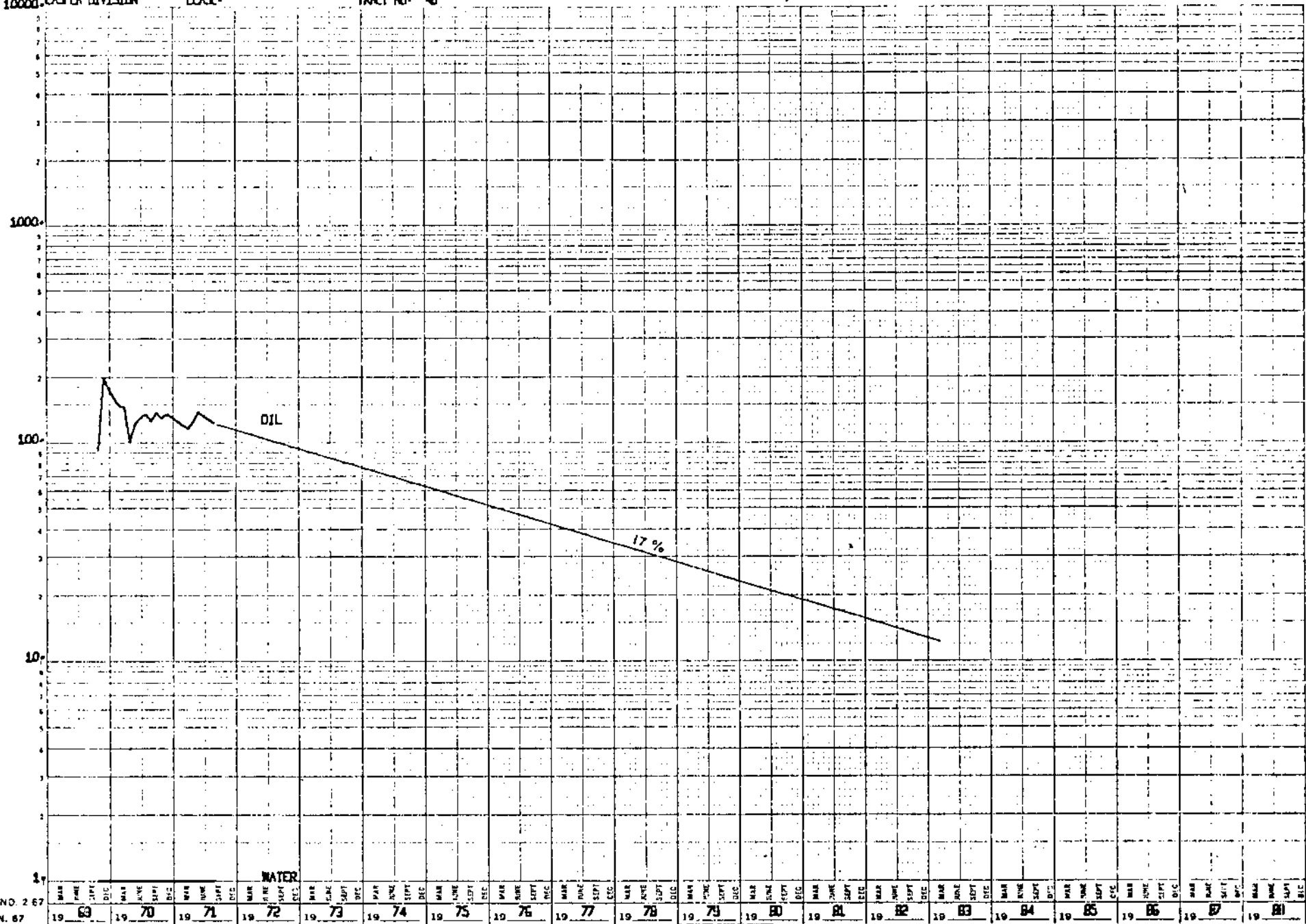
STATE: NORTH DAKOTA
LEASE:

FIELD: GILKINSON
TRACT NO: 48

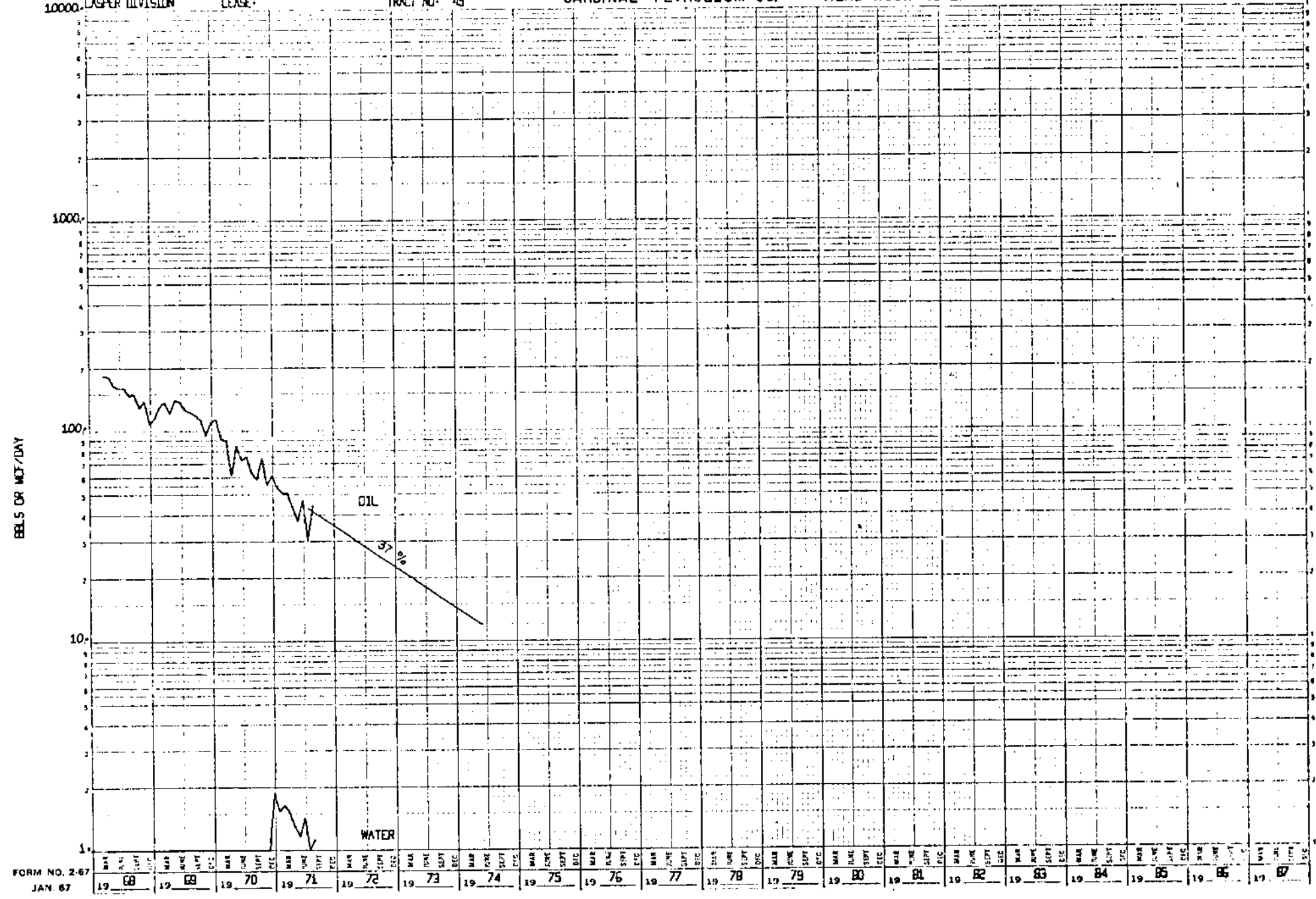
RESERVOIR: HEATH
NORTH AMERICAN ROYALTIES, INC.

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RELS OR MOY/DAY



FORM NO. 2 67
JAN. 67



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10000- CASPER DIVISION

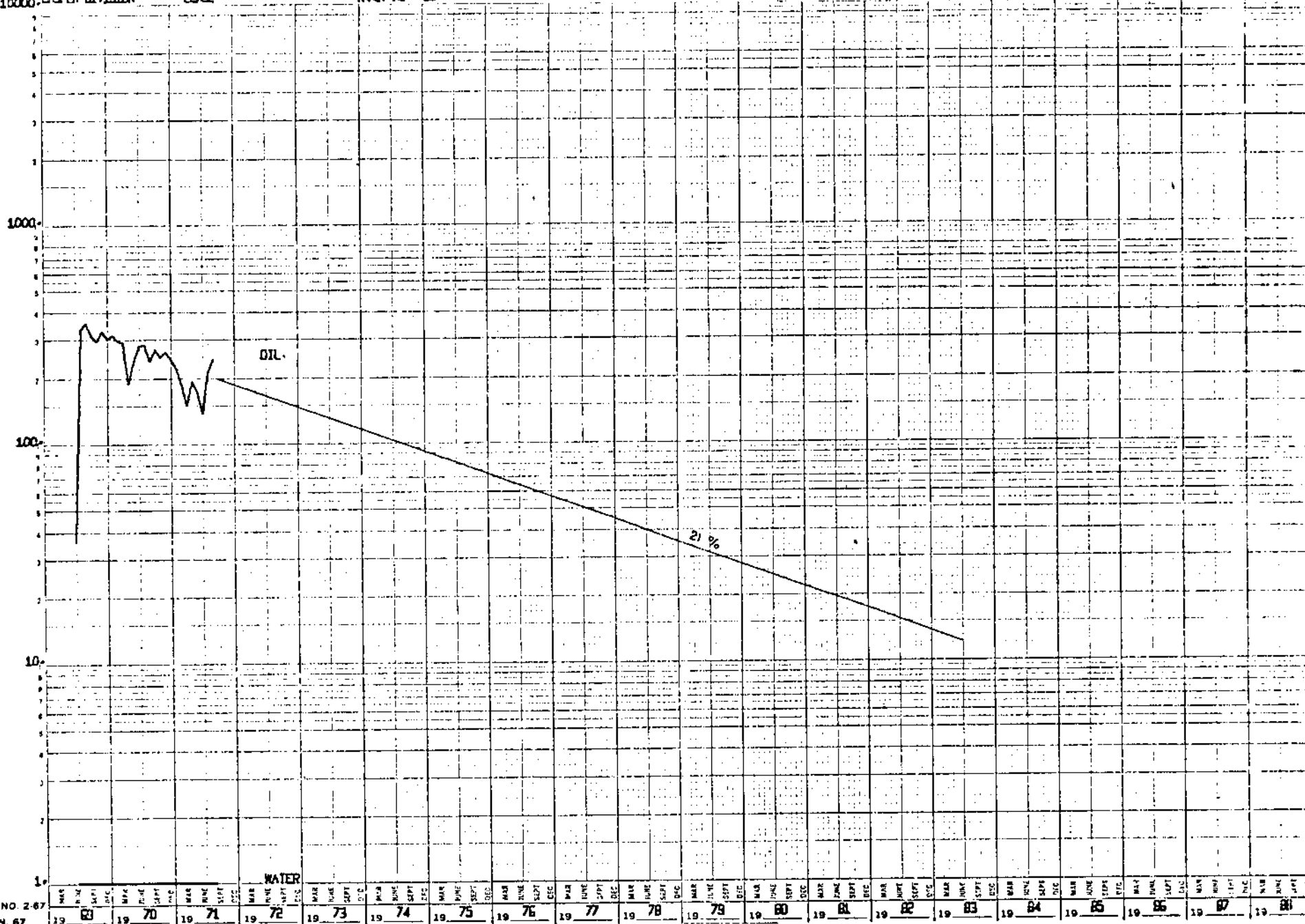
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LEASE-

FIELD- DICKINSON
TRACT NO- 50

RESERVOIR- HEATH
NORTH AMERICAN ROYALTIES, INC.

HEAD-WOCK STATE 1

BELS OR MCT/DAY



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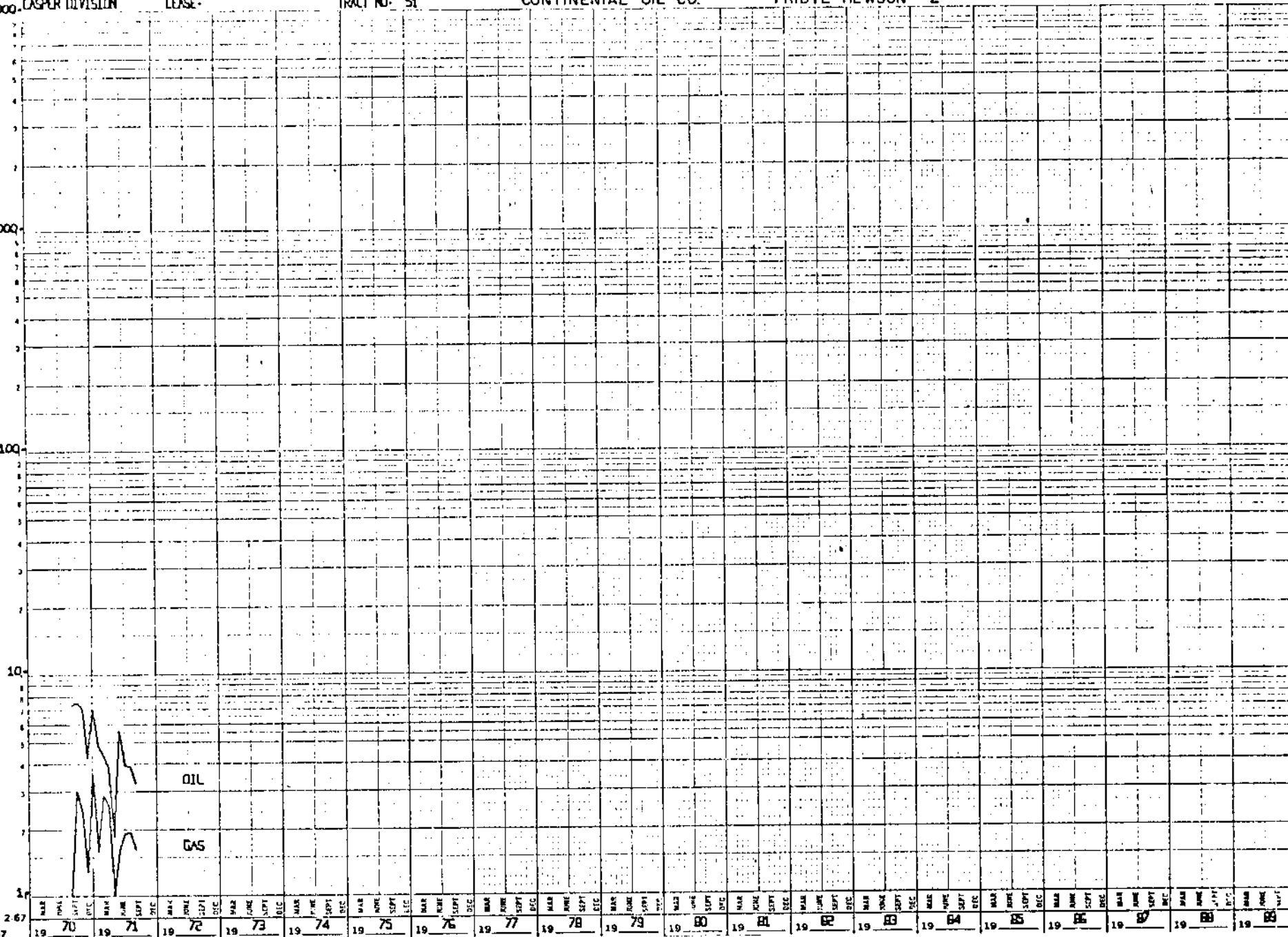
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TRACT NO- 51

RESERVOIR- HEATH
CONTINENTAL OIL CO.

PRIBYL-HEWSON 2

BBL'S OR MCF/DAY

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JAN. 67



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CASPER DIVISION

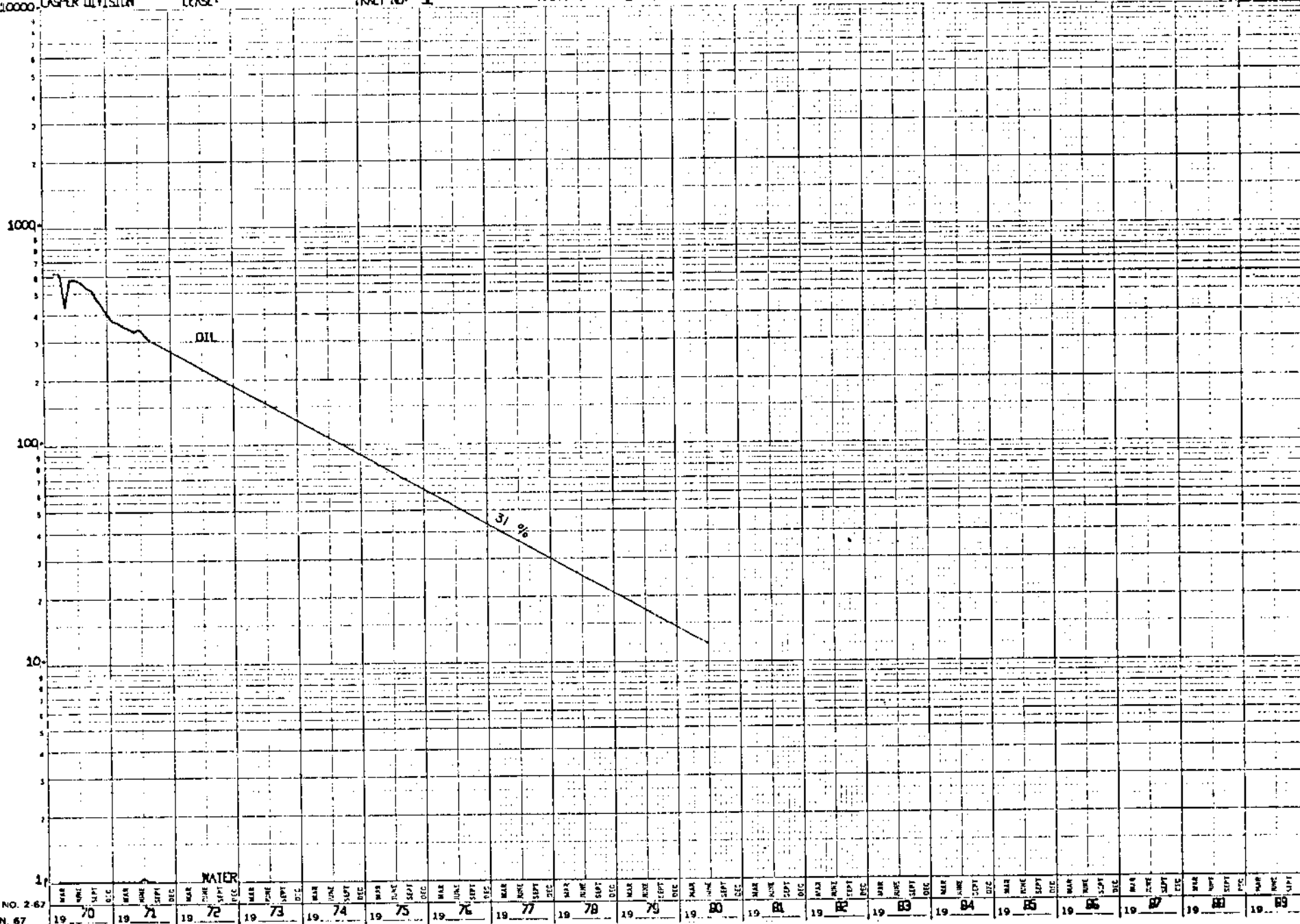
STATE- NORTH DAKOTA
LEASE-

FIELD- DICKINSON
TRACT NO- 52

RESERVOIR- HEATH
NORTH AMERICAN ROYALTIES, INC.

WOLFE 1

BBL'S OR MCF/DAY



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10000 CASPER DIVISION

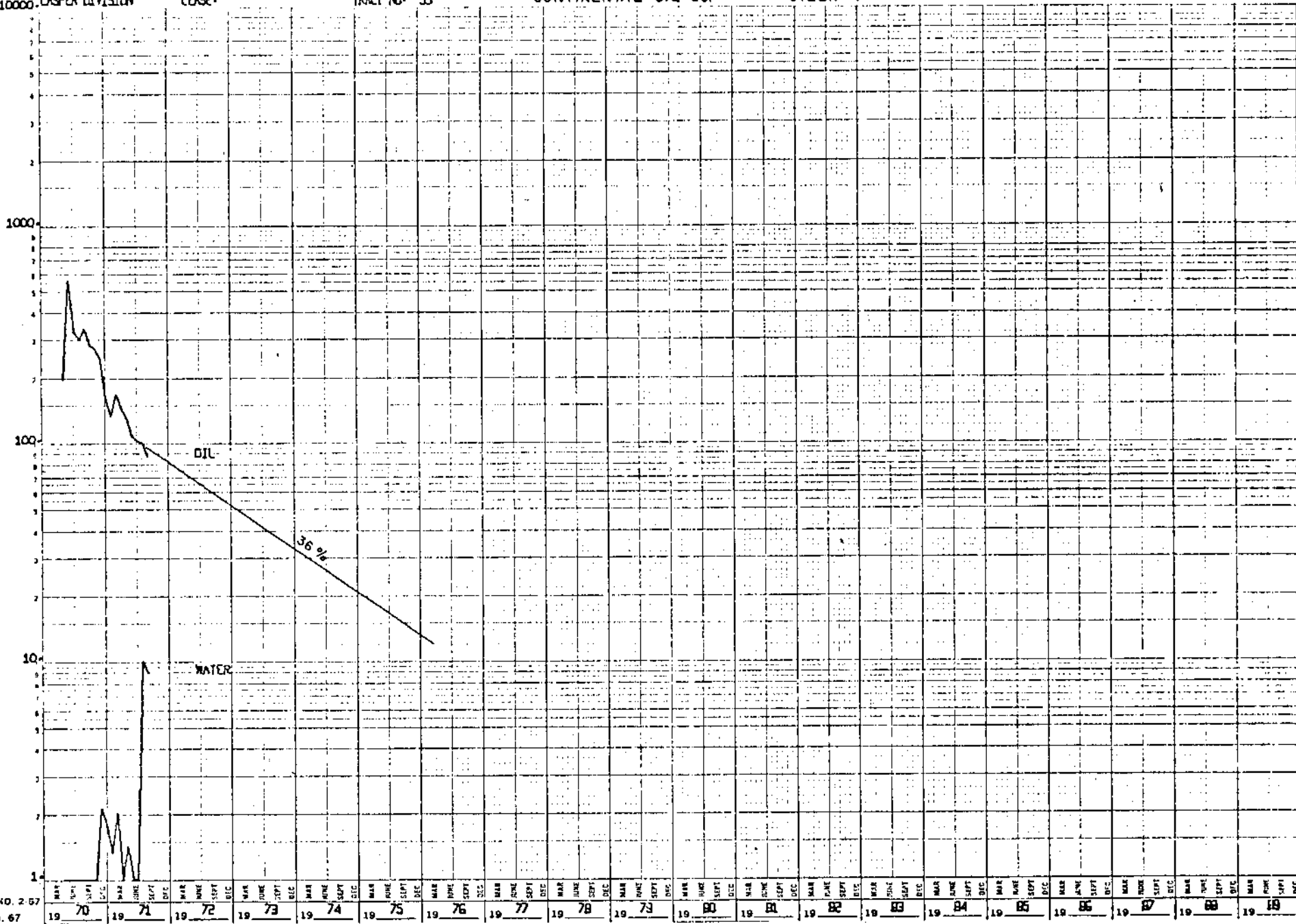
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LEASE-

FIELD- DICKINSON
TRACT NO- 53

RESERVOIR- HEATH
CONTINENTAL OIL CO.

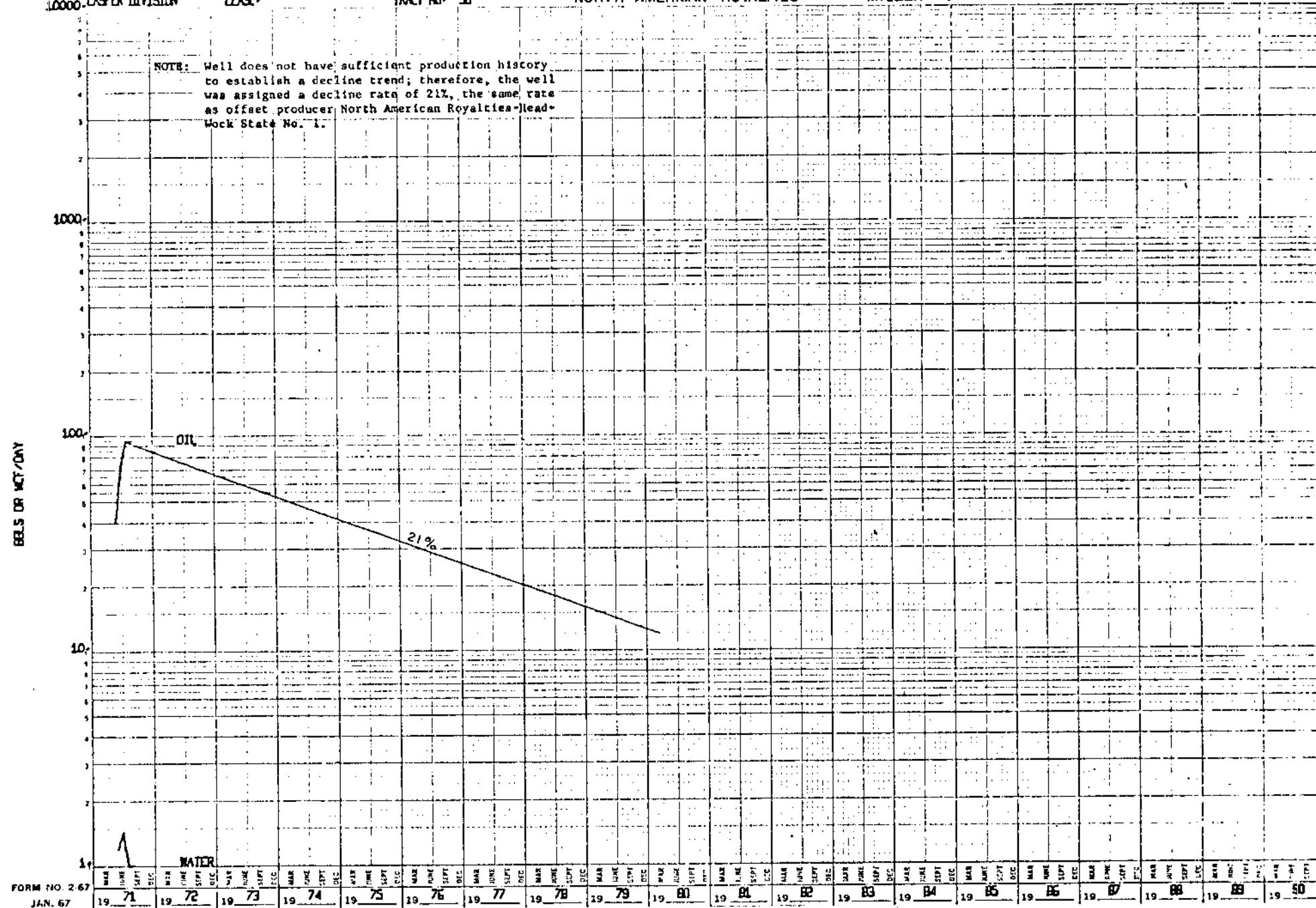
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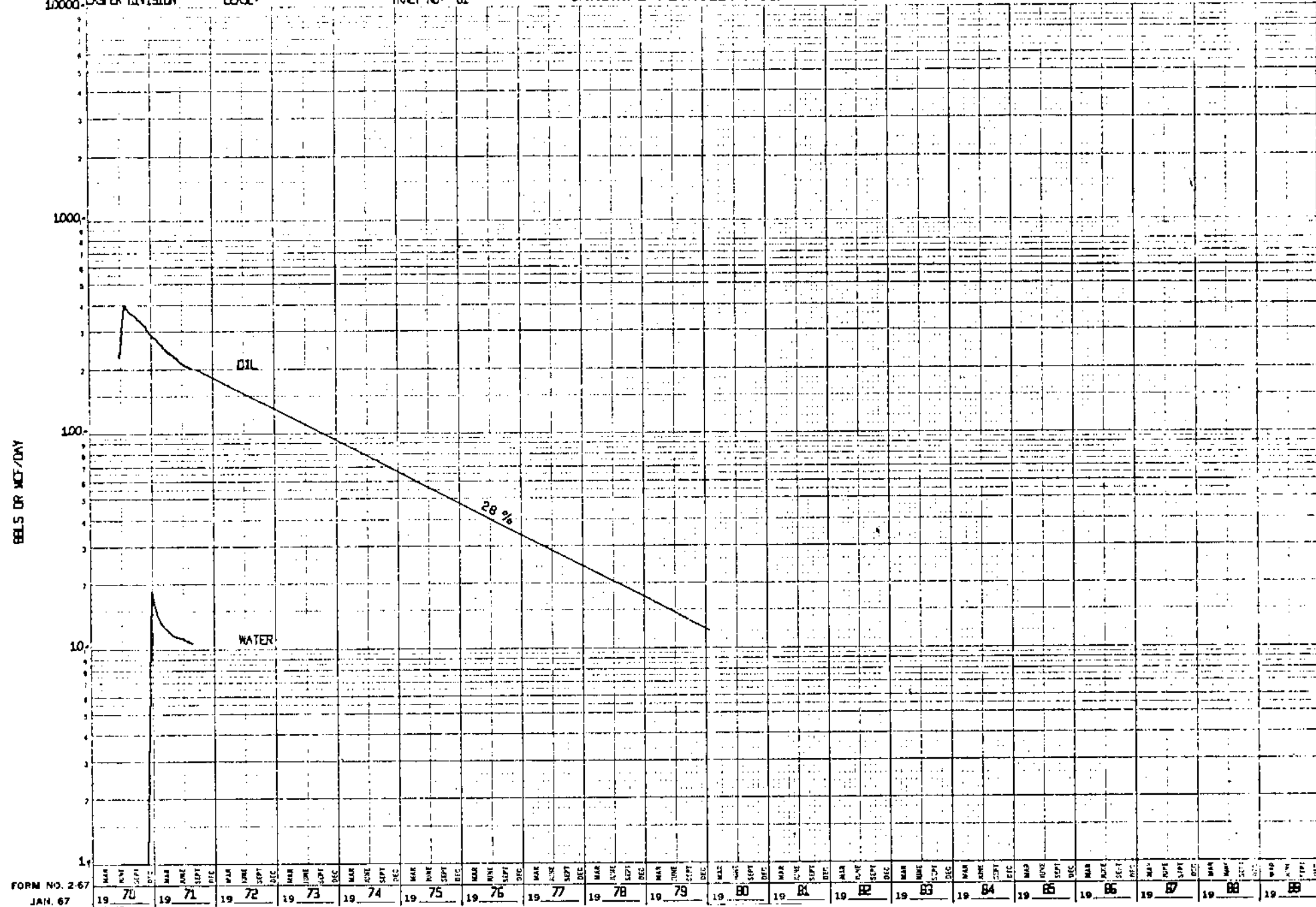
BBLs OR MCT/DAY



FORM NO. 2-57
JAN. 67

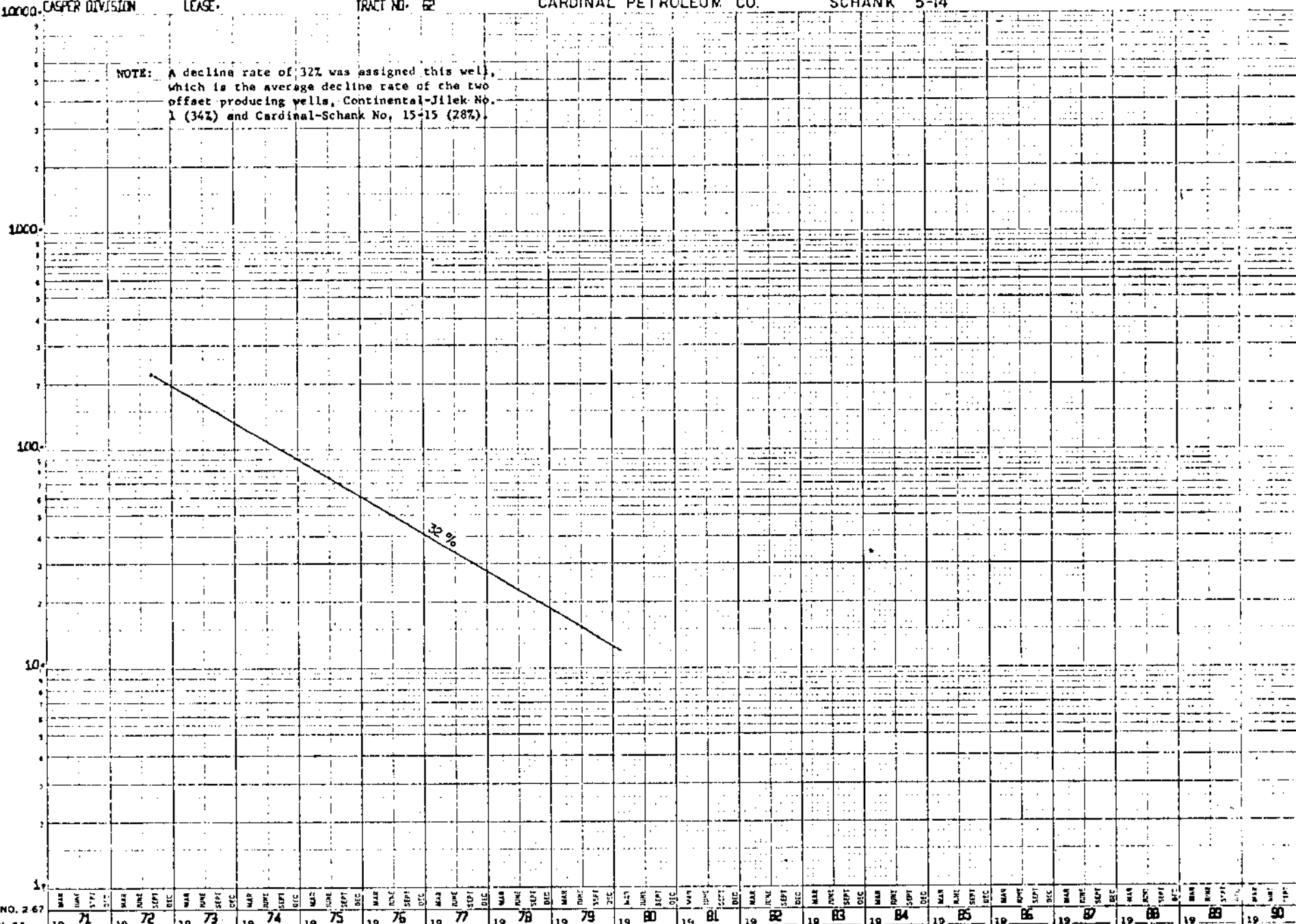
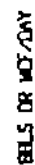
NOTE: Well does not have sufficient production history to establish a decline trend; therefore, the well was assigned a decline rate of 21%, the same rate as offset producer North American Royalties-Head-Work State No. 1.





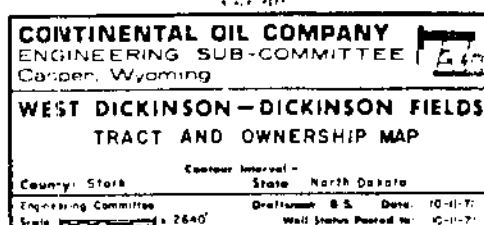
FORM NO. 2-67
JAN. 67

NOTE: A decline rate of 32% was assigned this well, which is the average decline rate of the two offset producing wells, Continental-Jilek No. 1 (34%) and Cardinal-Schank No. 15-15 (28%).



FORM NO. 2-67
JAN. 67

R. 96 W



TRACT AND OWNERSHIP MAP

(SEE MAP IN CASE FILE)

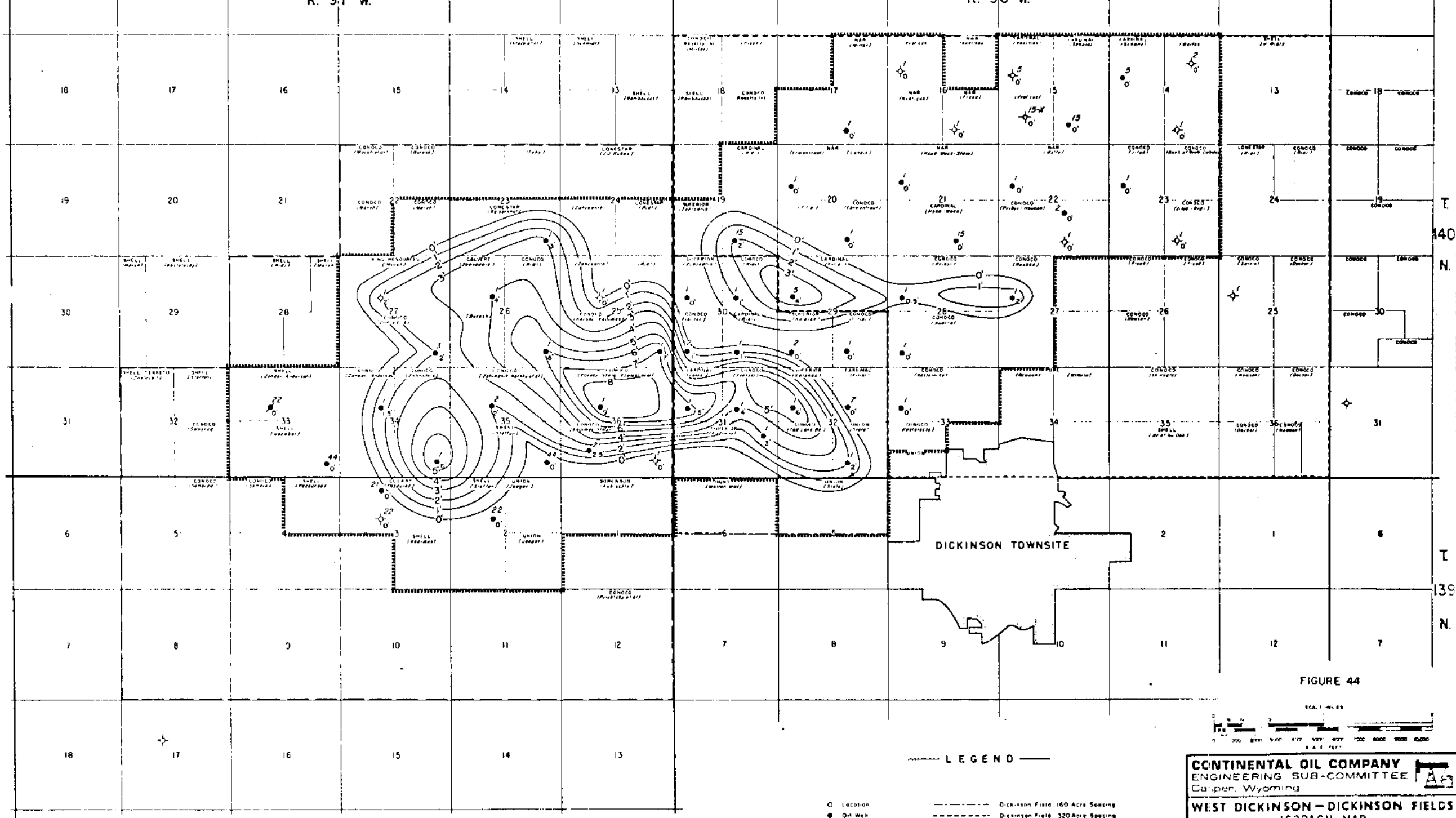
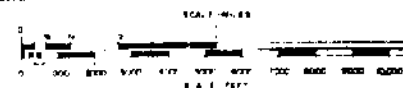


FIGURE 44



LEGEND

- Location
- Oil Well
- Shut in Well
- ✧ Abandoned

- Dickinson Field 160 Acre Spacing
- Dickinson Field 320 Acre Spacing
- West Dickinson Field 320 Acre Spacing
- Unit Outline - Proposed

CONTINENTAL OIL COMPANY
ENGINEERING SUB-COMMITTEE
Casper, Wyoming

WEST DICKINSON - DICKINSON FIELDS
ISOPACH MAP
HEATH "A" NET OIL SAND
Contour Interval -

County: Stark State: North Dakota
Engineering Sub-committee Draftsman: B.S. Date: 8-4-71
Scale: 1" = 2540' Well Status: Partial No. 10-11-71
Rev by: Eng. Comm. 10-11-71

R 97 W

R 50 W

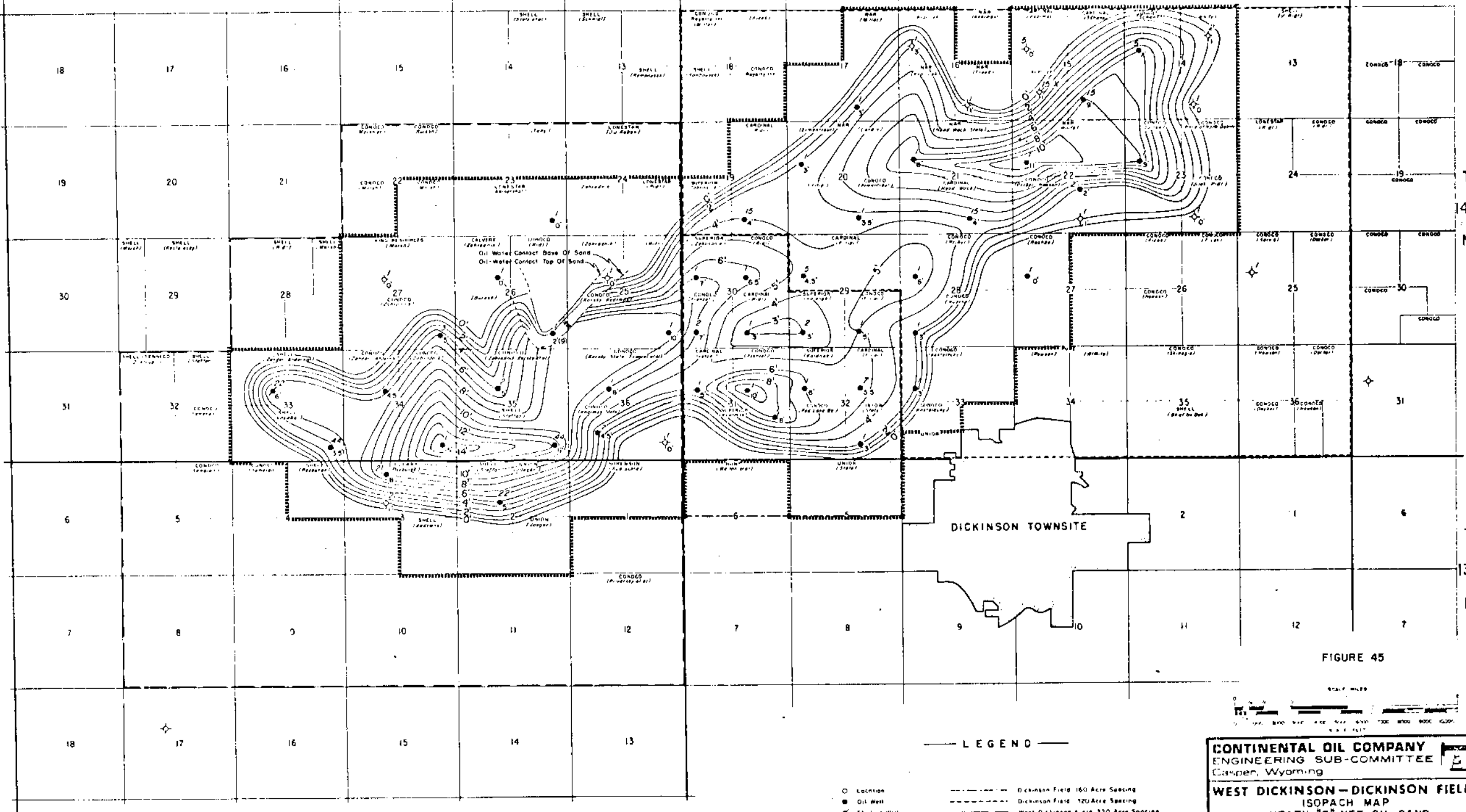
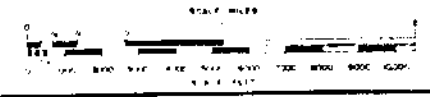


FIGURE 45



— LEGEND —

- Location
- Oil Well
- Shut in Well
- ◇ Abandoned
- Dickinson Field 160 Acre Spacing
- Dickinson Field 120 Acre Spacing
- West Dickinson Field 320 Acre Spacing
- Unit Outing - Proposed

CONTINENTAL OIL COMPANY
ENGINEERING SUB-COMMITTEE
Casper, Wyoming

WEST DICKINSON - DICKINSON FIELD
ISOPACH MAP
HEATH "B" NET OIL SAND
Contour Interval - 1'

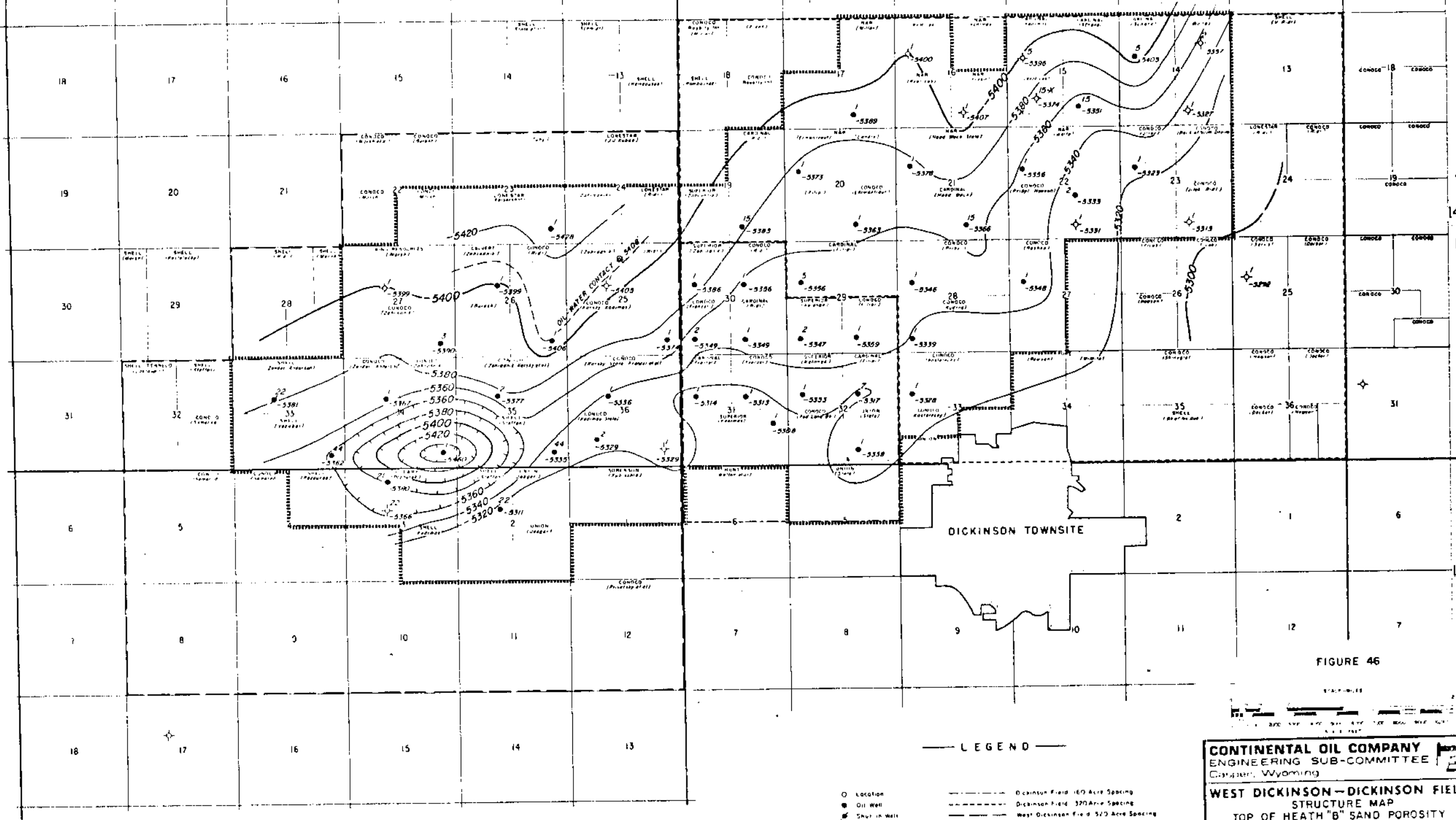
County: Stark State: North Dakota

Engineering Subcommittee Draftsman: B.S. Date: 2-4-77
Well Status Passed to: 10-1-77

Rev. by: Eng. Comm. 10-1-77

R. 97 W.

R. 96 W.



DICKINSON TOWNSITE

FIGURE 46

— LEGEND —

- Location
- Oil Well
- ◐ Shell in Well
- ✧ Abandoned
- Dickinson Field 160 Acre Spacing
- - - Dickinson Field 320 Acre Spacing
- West Dickinson Field 512 Acre Spacing
- Unit Outline — Proposed

CONTINENTAL OIL COMPANY
ENGINEERING SUB-COMMITTEE
 Casper, Wyoming

WEST DICKINSON—DICKINSON FIELD
STRUCTURE MAP
TOP OF HEATH "B" SAND POROSITY
 Contour Interval—25

County State North Dakota
 Engineering Sub-committee Draftsman B. S. Date 2-1-34
 Scale 1" = 2640' Well Status Posted by
 Rev. by Eng. Comm.

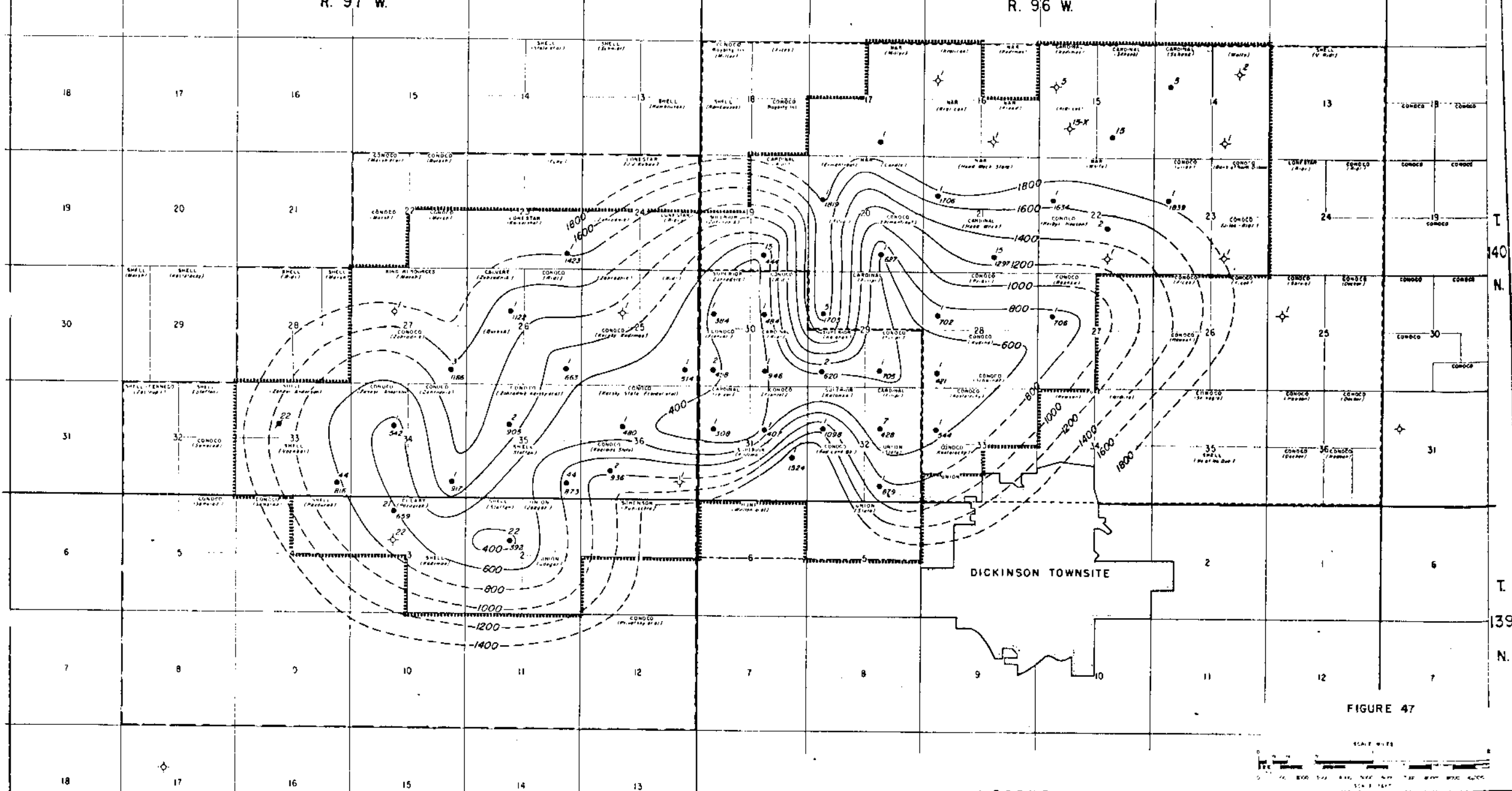
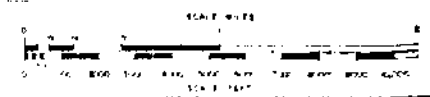


FIGURE 47



— LEGEND —

- Location
- Oil Well
- ✱ Shut in Well
- ✱ Abandoned
- Dickinson Field 160 Acre Spacing
- - - Dickinson Field 370 Acre Spacing
- West Dickinson Field 520 Acre Spacing
- Unit Outline — Proposed

CONTINENTAL OIL COMPANY
 ENGINEERING SUB-COMMITTEE
 Carpenter, Wyoming

WEST DICKINSON—DICKINSON FIELDS
 ISOBARIC MAP
 SHUT-IN HEATH RESERVOIR PRESSURE SURVEY
 Based on May, 1947 Survey
 Contour Interval - 200 ps.

County: Stark State: North Dakota
 Engineer: L.O. Kruse Draftsman: B.S. Date: 6-26-47
 Scale: 1" = 2400' Well Stems Posted to: 10-11-47

CONTINENTAL OIL COMPANY

Call #1095
58

VOLUME II

DICKINSON WATERFLOOD STUDY

HEATH SAND "A" & "B" ZONES

STARK CO., NORTH DAKOTA

Revised

JULY 1971

A D D E N D U M

CONTINENTAL OIL COMPANY VOLUME II DICKINSON WATERFLOOD STUDY HEATH SAND "A" AND "B" ZONES STARK COUNTY, NORTH DAKOTA

This Addendum updates the basic reservoir data required as the result of Engineering Committee net pay revisions as presented in Volume I (Revised), Engineering Report, Dickinson-West Dickinson Field, Stark County, North Dakota, October, 1971 and additional drilling since the publication date of Volume II. Three dry holes and one producer have been drilled in the northeast area of Dickinson Field. The dry holes were Cardinal Petroleum Company-Kadmas 5, SW NW of Section 15, Cardinal Petroleum Company-Kralicek-Kadmas 15-X, center SW of Section 15, and the Continental Oil Company-Wolfe 2, center NE of Section 14, all located in T140N, R96W. The producer was Cardinal Petroleum Company-Schank 5-14, SW NW of Section 14, T140N, R96W. As a result, the productive volume shown in the Volume II Dickinson Waterflood Study has been recalculated and determined to be 69,252 acre-feet ("A" zone = 16,520 AF and "B" zone = 52,732 AF).

The oil in place and the estimated primary and secondary recovery have been revised to account for the larger productive area. These new values are shown below:

Original Oil In Place	55,574,300 STB
Cumulative Oil Production to 9-1-71	6,229,991 STB
Primary Reserves as of 9-1-71	3,967,800 STB
Ultimate Primary Recovery	10,197,791 STB
Primary Recovery, % of OOIP	18.4
Secondary Recovery	10,937,774 STB
Ultimate Primary and Secondary	21,135,565 STB
Ultimate Primary and Secondary, % of OOIP	38

Waterflood investments, operating costs, and producing rate forecasts have been updated to reflect results anticipated with an effective unitization date of 9-1-72 and water injection commencing 1-1-73. All investment data and the crude price used in the projected economics are based on values in effect as of July 1, 1972. Although costs of material, labor, etc., will change in the future it is anticipated the crude price will also adjust to these changes such that future economics are relative. The injection plant capacity remains identical to that proposed in Volume II since injection is not proposed in the northeastern end of the reservoir until the producing rates decline sufficiently. At that time, the plant is projected to have surplus capacity due to reservoir fill-up and steady state injection rates in the remaining portion of the reservoir.

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TABLE 1

Summary Of
Field and Reservoir Data

Date of Discovery	January, 1958
Type of Trap	Stratigraphic
Producing Formation	Heath Sand
Producing Mechanism	Dissolved Gas Drive
Productive Area	11,639 Acres

Reservoir Characteristics

Average Depth to Top of Pay	7,900 Feet
Average Productive Thickness	5.95 Feet
Acre-Feet of Oil Pay	69,252
Average Porosity	14.8 %
Average Air Permeability	194 md
Average Water Saturation	22 %

Fluid Characteristics

Gravity of Oil, Degrees API	35
Original BHP @ - 5,300 Datum, psig	3,475
May 1971 BHP @ - 5,300 Datum, psig	900
Reservoir Temperature, Degrees F	196
Bubble Point Pressure, psig	2,147
Original Solution GOR, CFPB	130
FVF at Bubble Point	1.116
FVF at Original Pressure	1.106
Viscosity of Crude at 196½ F and 2,147 psig	2.82 cp

Reserves, Present Operations

Original Oil In Place	55,574,300 STB
Ultimate Primary Recovery	10,197,791 STB
Primary Recovery, % of OOIP	18.4
Cumulative Production (9-1-71)	6,229,991 STB
Reserves (9-1-71)	3,967,800 STB

Well Status

Development Pattern, Acres	160 and 320
Number of Producing Wells (9-1-71)	42
Maximum Producing Rate, December 1967	4,689 BOPD - 28 Wells
Producing Rate, August 1971	3,388 BOPD

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TABLE 5

Waterflood Installation Costs

Year		Injection Plant	Injection Distribution System	Injection Well Conversions	Emergency Water Disposal Pit	D&E Water Supply Wells	Fuel Gas System	Produced Water Treating Facilities	Produced Water Gathering System	High Volume Lift Installations	D&E Producing Well	Data Telemetry System	Total
1972	Tangible	288,000	403,500*	228,100	37,000	91,900**	188,000						1,236,500
	Intangible	8,500	12,000	2,500	1,000	74,000	5,500						103,500
												Total	\$ 1,340,000
1973	Tangible							31,500	780,000			302,000	1,113,500
	Intangible							1,000	15,000			11,500	27,500
												Total	\$ 1,141,000
1974	Tangible			15,000						126,000			141,000
	Intangible			1,600						3,000			4,600
												Total	\$ 145,600
1975	Tangible									44,000	40,000		84,000
	Intangible									1,000	105,800		106,800
												Total	\$ 190,800
1976	Tangible									46,000			46,000
	Intangible									1,000			1,000
												Total	\$ 47,000
1978	Tangible			15,000									15,000
	Intangible			1,600									1,600
												Total	\$ 16,600
1979	Tangible										40,000		40,000
	Intangible										105,800		105,800
												Total	\$ 145,800
												Grand Total	\$ 3,026,800

* Added cost for corrosion protection by internally plastic coating.

** One water supply well only instead of two.

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TABLE 7

Dickinson Unit Primary Economics

Year	Well Count	Oil Production M-Bbl.	Gross Revenue M\$*1	Operating Costs M\$*2	Investment Schedule		Profit Before FIT, M\$
					Tang., M\$	Total, M\$	
1972	41	895.0	2043.9	534.7	188.0	193.5	1315.7
1973	38	680.0	1612.9	478.6	0.0	0.0	1134.2
1974	35	508.0	1220.1	427.4	0.0	0.0	792.6
1975	33	397.0	946.6	393.8	0.0	0.0	552.7
1976	31	302.0	729.6	361.9	0.0	0.0	367.7
1977	27	230.0	605.2	311.5	0.0	0.0	293.6
1978	25	177.0	444.2	284.9	0.0	0.0	159.2
1979	20	136.0	410.5	227.4	0.0	0.0	183.1
1980	15	101.0	330.6	170.7	0.0	0.0	159.8
1981	13	77.0	215.8	146.8	0.0	0.0	68.9
1982	10	59.0	194.7	112.9	0.0	0.0	81.8
1983	9	46.0	285.0	100.8	0.0	0.0	184.2
TOTAL		3608.0	9039.7	3552.0	188.0	193.5	5294.2

*1 Based upon gross crude price of \$3.06/B0 less trucking (\$0.45/B0) and 12.5% royalty.

*2 Based upon operating cost of \$9,900 per well-year, production tax of \$0.13/B0, and treater fuel cost which ranges from \$721 to \$658 per well-year.

7-6-72

TABLE 7
Dickinson Unit Primary Economics

Year	Well Count	Oil Production M-Bbl.	Gross Revenue M\$*1	Operating Costs M\$*2	Investment Schedule		Profit Before FIT, M\$
					Tang., M\$	Total, M\$	
1972	34	835.8	1908.7	454.0	215.0	218.0	1236.6
1973	31	620.5	1417.0	397.9	0.0	0.0	1019.0
1974	28	459.9	1050.2	348.0	0.0	0.0	702.2
1975	28	343.1	783.4	334.7	0.0	0.0	448.8
1976	25	255.5	583.4	293.1	0.0	0.0	290.3
1977	22	189.8	433.4	254.0	0.0	0.0	179.3
1978	21	142.3	325.0	238.1	0.0	0.0	86.8
1979	12	104.0	237.5	139.0	0.0	0.0	98.4
1980	12	76.6	175.0	135.9	0.0	0.0	39.1
1981	9	58.4	133.3	102.2	0.0	0.0	31.1
1982	9	43.1	98.4	100.5	0.0	0.0	- 2.0
TOTAL		3129.0	7146.0	2797.9	215.0	218.00	4130.1

*1 Based upon gross crude price of \$3.06/B0 less trucking (\$0.45/B0) and 12.5% royalty.

*2 Based upon operating cost of \$9,900 per well-year, production tax of \$0.13/B0, and treater fuel cost which range from \$721 to \$658 per well-year.

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TABLE 8

Dickinson Unit Economics With Waterflood

Year	Oil Production M-Bbl.	Gross Revenue M\$*	Operating Costs M\$	Investment Schedule		Profit Before FIT, M\$
				Tang., M\$	Total, M\$	
1972	895.0	2043.9	534.7	1236.4	1339.9	169.2
1973	612.7	1620.4	546.1	1113.4	1140.9	- 66.6
1974	895.0	2043.9	535.1	140.9	145.5	1363.2
1975	1576.0	3599.1	596.3	83.9	190.7	2812.0
1976	1698.0	3902.8	584.3	45.9	46.9	3271.4
1977	1480.0	3439.9	523.0	0.0	0.0	2916.8
1978	1105.0	2583.5	439.0	14.9	16.5	2127.8
1979	806.0	1885.7	353.6	39.9	145.7	1386.2
1980	648.0	1499.8	323.0	0.0	0.0	1176.8
1981	566.0	1312.6	294.2	0.0	0.0	1018.3
1982	506.0	1155.5	283.4	0.0	0.0	872.1
1983	455.0	1039.1	274.6	0.0	0.0	764.4
1984	426.0	992.8	258.5	0.0	0.0	734.3
1985	392.0	915.2	242.4	0.0	0.0	672.7
1986	350.0	819.3	224.3	0.0	0.0	594.9
1987	319.0	748.5	207.9	0.0	0.0	540.5
1988	271.0	618.8	199.9	0.0	0.0	418.9
1989	222.0	526.9	180.3	0.0	0.0	346.6
1990	194.0	483.0	152.4	0.0	0.0	330.5
1991	171.0	410.5	131.0	0.0	0.0	279.4
1992	154.0	371.6	116.9	0.0	0.0	254.7
1993	139.0	317.4	115.2	0.0	0.0	202.2
1994	123.0	280.9	112.2	0.0	0.0	168.6
1995	121.0	296.3	88.4	0.0	0.0	207.8
1996	114.0	260.3	87.6	0.0	0.0	172.6
1997	110.0	251.2	87.2	0.0	0.0	163.9
1998	106.0	242.0	86.7	0.0	0.0	155.3
1999	91.0	515.8	85.0	0.0	0.0	430.7
TOTAL	14545.7	34177.8	7664.5	2675.9	3026.7	23486.4

* Based on gross crude price of \$3.06/B0 less trucking (\$0.45/B0), 12.5% royalty and salvage.

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TABLE 9

Dickinson Unit Economics
Incremental Profit Due to Waterflooding

Year	Oil Production M-Bbl.	Gross Revenue M\$	Operating Costs M\$	Investment Schedule		Profit Before FIT, M\$
				Tang., M\$	Total, M\$	
1972	0.0	-0.0	0.0	1048.4	1146.4	-1146.4
1973	-67.2	7.4	67.4	1113.4	1140.9	-1200.9
1974	387.0	823.8	107.6	140.9	145.5	570.5
1975	1179.0	2652.5	202.5	83.9	190.7	2259.2
1976	1396.0	3173.1	222.3	45.9	46.9	2903.7
1977	1250.0	2834.6	211.4	0.0	0.0	2623.1
1978	928.0	2139.3	154.1	14.9	16.5	1968.5
1979	670.0	1475.1	126.2	39.9	145.7	1203.0
1980	547.0	1169.2	152.2	0.0	0.0	1016.9
1981	489.0	1096.7	147.4	0.0	0.0	949.3
1982	447.0	960.8	170.5	0.0	0.0	790.2
1983	409.0	754.0	173.8	0.0	0.0	580.2
1984	426.0	992.8	258.5	0.0	0.0	734.3
1985	392.0	915.2	242.4	0.0	0.0	672.7
1986	350.0	819.3	224.3	0.0	0.0	594.9
1987	319.0	748.5	207.9	0.0	0.0	540.5
1988	271.0	618.8	199.9	0.0	0.0	418.9
1989	222.0	526.9	180.3	0.0	0.0	346.6
1990	194.0	483.0	152.4	0.0	0.0	330.5
1991	171.0	410.5	131.0	0.0	0.0	279.4
1992	154.0	371.6	116.9	0.0	0.0	254.7
1993	139.0	317.4	115.2	0.0	0.0	202.2
1994	123.0	280.9	112.2	0.0	0.0	168.6
1995	121.0	296.3	88.4	0.0	0.0	207.8
1996	114.0	260.3	87.6	0.0	0.0	172.6
1997	110.0	251.2	87.2	0.0	0.0	163.9
1998	106.0	242.0	86.7	0.0	0.0	155.3
1999	91.0	515.8	85.0	0.0	0.0	430.7
TOTAL	10937.7	25138.0	4112.5	2487.9	2833.2	18192.2



CONTINENTAL OIL COMPANY

152 North Durbin
Casper, Wyoming 82601

SUBJECT: DICKINSON WATERFLOOD STUDY, HEATH SAND "A" AND "B" ZONES

AUTHOR: K. W. Johnson and L. D. Krause

DATE: August 12, 1971

EXECUTIVE SUMMARY

Efforts are currently underway to unitize the Dickinson Field, Heath Sand, for the purpose of waterflooding. The Heath Sand is presently developed by 41 producing wells, and ultimate primary recovery is estimated at 9,750,000 barrels of oil. Our studies indicate that waterflooding the Heath Sand should increase ultimate recovery by 10,320,000 barrels of oil and return a before tax profit of \$16,311,900 on an incremental investment of \$2,692,900. The rate of return on this investment is indicated to be 40 percent.

A valuable tool used in this study to analyze waterflood recovery was a two dimensional waterflood model with which we were able to simulate waterflood operations in the Heath Sand. After a reservoir has been simulated, the model can be used to greatly improve waterflood surveillance work by predicting flood front locations one year into the future. If premature breakthrough or trapping of oil is indicated, injection rates and/or patterns can be modified to prevent this loss from occurring. Waterflood surveillance of this type can make a significant contribution to profits.

The waterflood life is estimated to be 27 years. After injection rates have been established, the acceleration potential of selective infill development in the 320 acre spaced area should be investigated.

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OBJECTIVES

The objectives of this study were to:

1. Determine the optimum injection pattern.
2. Determine the injectivity for each well in the pattern based on a well head pressure of 2,500 psi.
3. Determine additional recovery due to waterflooding.
4. Determine the waterflood profitability.

CONCLUSIONS

1. Producing mechanism of the Heath Sand Reservoir is indicated to be solution gas drive. Present reservoir pressure (May 1971) is approximately 900 psi compared to an original pressure of 3,475 psi. No water encroachment has been observed to date.
2. Current production rates are declining rapidly (approximately 26 percent/yr.). Production rate in May 1971 was 3,197 BOPD.
3. Peripheral injection pattern of 13 wells with one future conversion (see Figure 1) resulted in the maximum recovery per investment dollar for a reasonable flood life.
4. Using a total field steady-state injection rate of 10,900 BWPD, waterflood life is estimated at 27 years.
5. Based on a primary recovery of 9,750,000 barrels, additional recovery due to waterflooding is estimated at 10,320,000 barrels of oil.
6. Waterflood operations should return a before tax profit of \$16,311,900 on an incremental investment of \$2,692,900. The rate of return on this investment is indicated to be 40 percent.

RECOMMENDATIONS

1. Accomplish unitization and installation of a Heath Sand waterflood as soon as possible.
2. After stabilized field injection rates have been established, utilize the waterflood model for predicting flood front locations one year into the future. It is possible that well injection rates, or the injection pattern, will need to be modified to prevent premature water breakthrough and trapping of oil. Surveillance of this type can make a significant contribution to profits.
3. Investigate the acceleration potential of selective infill development in the 320 acre spaced area as soon as stabilized injection rates have been established.

DISCUSSION

Waterflood Recovery Calculations

A Dickinson Field, Volume I, report was issued earlier this year which defined the production limits, and determined the oil-in-place in the Heath Sand. Primary performance was also analyzed, and unitization parameters were developed. Table 1 summarizes and updates pertinent data for the Heath Sand, Dickinson Field.

A computerized two-dimensional waterflood model was used to predict flood front locations for each input well, and also to determine the ultimate areal sweep at the end of waterflood operations for the "A" and "B" zones of the Heath Sand. A description of the computer model and its application to the Dickinson Field is included in the appendix of this report. Computer constructed iso-volume maps (porosity x feet) and kh maps (md.-ft.) for the "A" and "B" zones are shown in Figures 1 through 4. These data were used to build the "A" zone and "B" zone models. Net pay data were obtained from the Volume I report. Permeability and porosity data were determined from cores. An iso-volume map was used rather than an isopach map because of the significant variation in porosity throughout the field. Since flood front advance is directly related to the pore volume in an area, a much better prediction of flood out time and well response could be made by utilizing a reservoir volume map. In certain areas, adjustments were made in the above data based on primary performance matching. The zero contour line on the enclosed maps was interpreted by a computer program, and does not exactly agree with the zero line shown on the isopach maps in Volume I. Overall, however, they are very similar to the Volume I isopach maps.

Three injection patterns were analyzed for the "A" and "B" zones to optimize recovery per dollar invested for a reasonable flood life. The optimum pattern selected for flooding both zones is shown on Figure 1. Commingled injection is planned into the "A" and "B" zones where both are present at an input location. The 13 well peripheral pattern results in 13 "B" zone injection points and six "A" zone injection points (see Figure 3). Because the model used is a steady state model, the sum of reservoir injection volumes must equal the sum of withdrawals. Therefore, it was necessary to increase actual production rates to equal predicted steady state injection rates during fill-up of the gas space. After fill-up was reached, however, injection rates were scaled to realistic production rates. The production and injection schedules used for various model runs are shown on Tables 3 and 4.

Figures 15 and 16 show the flood front positions at various times for the "A" zone. First water breakthrough is expected in Conoco Frenzel No. 1 (NE/4 Sec 31-96W) approximately five months after the start of water

injection. This time period takes into account the greater injection capacity during the fill-up period and is based on an initial field injection rate of 18,000 BWPD. Figures 17 and 18 show the flood front positions at various times for the "B" zone. First breakthrough from water injection into the "B" zone is indicated at Conoco Zahradnik No. 1 (SE/4 Sec 34-97W) in approximately two years. Figure 16 shows flood out of the "A" zone to take place in 23 years, at which time the areal sweep is indicated to be 75.6 percent. Figure 18 shows the ultimate areal sweep for the "B" zone to occur at 27 years, at which time flood operations are estimated to be uneconomic (250 BOPD). The areal sweep efficiency in the "B" zone at this time is indicated to be 79 percent. To achieve these sweep efficiencies and a flood life of 27 years, two additional producing wells were necessary to recover oil that otherwise would have been trapped. These wells are located in the SW/4 of Sec 35-140N-97W and in the NE/4 of Sec 29-140N-96W. Graphs of cumulative thickness versus cumulative kh were plotted from the core data of several wells. Visual inspection of these curves indicated a vertical sweep efficiency of approximately 80 percent.

Fractional flow curves were determined for four Heath core samples from Conoco's Zahradnik No. 1 well. The residual oil saturation at a WOR of 30 ($f_w = .968$) was determined from the fractional flow curve by constructing a tangent line to the curve at a point equal to an f_w of 0.968. Where the tangent line intersects the f_w line equal to 100 percent is the residual oil saturation for that sample. The average ROS determined from the four samples was 31 percent as summarized below.

<u>Sample No.</u>	<u>Air Perm. md.</u>	<u>S_w, %</u>	<u>ROS, % @ WOR of 30</u>
7924-A	148	23	25
7928-A	382	20	30
7928-B	501	20	36
7935-C	618	18	33
Average			31

The four fractional flow curves mentioned above are shown in Figures 11 through 14. The fractional flow data are based on an oil and water viscosity of 2.82 cp and 0.43 cp, respectively, at reservoir conditions of 2,147 psig and 196°F.

The volume of oil to be obtained by waterflooding was calculated as shown below. The calculations assume the reservoir pressure at waterflood abandonment will approach original reservoir pressure, and that the unswept reservoir volume will be resaturated with oil.

Ultimate recovery under waterflood =

$$\text{Total reservoir pore volume} \times \left(\frac{S_{oi}}{B_{oi}} - \frac{S_{or}}{B_{or}} \right) \times \text{conformance factor}$$

Additional waterflood recovery = Ultimate w/waterflood - estimated ultimate primary recovery

Total reservoir pore volume = 7,758 x porosity x net oil sand volume, acre feet

S_{oi} = Initial oil saturation

S_{or} = Residual oil saturation in the area swept by water

B_{oi} = FVF at original reservoir pressure

B_{or} = FVF at abandonment after waterflooding

Conformance factor = Areal Sweep x Vertical Sweep

ϕ = 0.148 --- See Volume I Report

S_{oi} = 0.78 --- See Volume I Report

S_{or} = 0.31

$B_{oi} \cong B_{or} = 1.106$ --- Reservoir pressure at waterflood abandonment will approach original reservoir pressure.

"A" Zone net oil sand = 15,951 acre feet --- See Volume I Report

"B" Zone net oil sand = 49,821 acre feet --- See Volume I Report

Conformance ("A" + "B" Zones) = $\frac{.756 \times 15,951 \text{ AF} + .79 \times 49,821 \text{ AF}}{65,772 \text{ AF}} \times .8 = .6254$

Primary Recovery = 9,750,000 STB --- Field production rates during the past six months have exhibited a steeper decline rate than indicated at the end of last year. Ultimate primary recovery, therefore, is now estimated at 9,750,000 barrels of oil rather than the 10,350,000 barrels estimated in the Volume I Report.

Ultimate recovery under waterflood

$$= 7,758 \times 0.148 \times 65,772 \text{ AF} \times \frac{0.78 - 0.31}{1.106} \times 0.6254$$

$$= 20,070,000 \text{ STB or } 38 \text{ percent of the original oil in place}$$

Additional recovery due to waterflooding

$$= 20,070,000 - 9,750,000 = 10,320,000 \text{ STB}$$

$$\text{Ratio of secondary to primary} = 10,320,000 / 9,750,000 = 1.06$$

The estimated production forecast with and without waterflood is shown on Figure 5. Also shown on this Figure is the estimated field injectivity, and the number of producing and injection wells throughout the life of the

waterflood. Based on an ultimate primary recovery of 9,750,000 barrels, cumulative production to 1-1-73 (start of injection) is estimated at 7,200,000 barrels of oil. The gas saturation at this time should be approximately 12 percent resulting in a gas voidage of 9,062,000 barrels as shown below.

$$1 \text{ Pore Volume} = 7,758 \times .148 \times 65,772 \text{ AF} = 75,518,000 \text{ bbls.}$$

$$\text{Gas Void} = 75,518,000 \times .12 = 9,062,000 \text{ bbls.}$$

The total field injection rate for the first year is expected to average 16,400 BWPD. However, in order to get a more realistic indication of flood response and water requirements, it was assumed that 10 percent of the total water injected would be lost to other formations as well as to areas of the Heath Sand reservoir not presently defined. It is also estimated that during the first year of injection, there will be an average reservoir voidage due to production of 1,700 BPD. The above results in a net average injection for the first year of 13,150 BWPD. When approximately one-half of the gas voidage is filled, we should start to see some tangible evidence of response in total field production from the first line producing wells. Based on an injection rate of 13,150 BWPD, this should occur in 345 days or approximately one year after the start of injection (see Figure 5). It is estimated that the peak production rate should occur in March 1976 at 4,600 BOPD from 25 wells (see Figure 5). As shown on Table I the peak primary production rate occurred in December 1967 at 4,689 BOPD with 28 wells on production.

The model runs indicated total injection requirements would be approximately 39.7 million barrels or 0.53 pore volumes. In terms of displaceable pore volumes this injection requirement amounts to 1.12 DPV's, and in the swept area 1.79 displaceable pore volumes.

As shown on Figure 5, field injection rates decline throughout the life of the waterflood. After fill-up, we essentially have a steady state system, and injection is limited to producing capacity which gradually declines as a result of shutting in producing wells. Total field water production also varies considerably as a result of shutting-in high water cut wells.

Injectivity Calculations

Stabilized (after fill-up) injection rates were calculated by first computing a specific injectivity index, and then applying that index to the permeability-thickness product (kh) for the selected injection wells.

The specific injectivity was calculated from the regular five-spot steady-state equation. However, since it was not known whether the five-spot equation would give reliable results for the proposed peripheral pattern, the injectivities were checked using an unsteady state image well model with a typical segment of the peripheral flood pattern. The injectivity indicated by the image well model was in very close agreement with that computed by the five-spot equation.

The relative permeability data utilized in the injectivity calculations were from the Zahradnik No. 1 core data shown in Figures 7 through 14, and summarized below. Also shown below is the mobility ratio (M) based on an oil viscosity of 2.82 cp and a water viscosity of 0.4 cp.

Sample No.	Air Perm. k_a , md.	S_{wavg}	k_{rw}	k_{ro}	M
7924-A	148	.565	.050	.34	1.04
7928-A	382	.612	.158	.72	1.55
7928-B	501	.474	.125	.66	1.34
7935-C	618	.540	.019	.48	0.28
Average*			.111	.573	

* Note: 7935-C omitted from averages

The relative water permeabilities were picked from the k_{rw} curves at the average water saturation behind the flood front at breakthrough; i.e., the intersection of the tangent to the fractional flow curves at $f_w = 100\%$. The relative oil permeabilities were taken from the k_{ro} curves at the minimum water saturation points. As noted, data from core 7935-C were discarded as being non-representative because the relative permeability seemed abnormally low for the air perm and water saturation of the sample. The mobility ratio for the sample also appears to be anomalous.

From the five-spot steady-state equation,

$$\text{Injectivity, } i_w, = \frac{.00354 (k_{rw}/\mu_w) k_a h \Delta P}{\ln d/r_w - 0.619} \text{ BPD}$$

or

$$\text{Specific Injectivity, } I_s, = \frac{.00354 k_{rw}/\mu_w}{(\ln d/r_w - 0.619) k_a h \Delta P} = \frac{\text{BPD}}{\text{md-ft-psi}}$$

and

$$I_s = 0.6599 \frac{\text{BPD}}{\text{md-ft}}$$

where:

$$k_{rw} = 0.111$$

$$\mu_w = 0.4 \text{ cp}$$

$$\text{Injection Well Surface Pressure} = 2,500 \text{ psi}$$

$$\text{Water Specific Gravity} = 1.016$$

$$\text{Producing Well Pressure} = 400 \text{ psi}$$

Well Depth = 7,900 ft.

ΔP = 2,500 + 7,900 (.433)(1.016) - 400 = 5,575 psi

d = 3,733 ft. (distance from injector to producer on 320 ac. spacing)

r_w = 0.5 ft. = injection well radius

Table 2 shows the k_{ah} values, the calculated injection rate, the final predicted injection rate, and the effective injection rate for each input well. The calculated injection rate values have been rounded and modified slightly based on a well's initial potential to arrive at the final predicted injectivity for each well. As mentioned previously, a 10 percent loss in injection water has been assumed, and therefore the total injection rate used in the waterflood model is 90 percent of the total water injected (see "Effective Injectivity" column on Table 2). Most of the 10 percent reduction was taken in the higher capacity wells.

As previously noted, an r_w of 0.5 feet was used in calculating well injectivity. Since most of the wells in the field have been fracture treated, the calculated well injection rates should be on the conservative side.

We have examined fracture treatment records for the field and have determined a formation fracture pressure of approximately 5,000 psi. We plan to keep well head injection pressures below fracture pressure if sufficient injectivity can be obtained.

The average mobility ratio for the Heath Sand prior to breakthrough was calculated to be 1.365, or slightly unfavorable, as shown below.

$$M = \frac{k_{rw}}{k_{ro}} \times \frac{\mu_o}{\mu_w} = \frac{0.111}{0.573} \times \frac{2.82}{0.4} = 1.365$$

Water Supply

Injection water will be obtained from the 100' thick Dakota sandstone which is found at an average depth of 5,500'. A DST of the Dakota in Ridl No. 1, SW/4-NE/4 Section 30, T140N, R96W, recovered 68 barrels of water in 17 minutes against an average head or back pressure of 2,035 psi. Drawdown calculations indicate that 18,000 BWPd can be produced at a pump depth of 1,933'. It is therefore planned to complete one supply well with a submersible pump capable of lifting 18,000 BWPd. If tests indicate that the well is not capable of producing this volume, another supply well will be drilled.

A water analysis of the Dakota DST sample, Figure 6, indicates a NaCl content of 25,000 ppm and no objectional qualities.

An alternate water supply source was investigated. Water from the Minnelusa formation, found at a depth of 7,200', exceeds 330,000 ppm NaCl which would lead to salt precipitation problems.

Waterflood Capital Requirements

Table 5 outlines the estimated investment costs for the proposed waterflood. The water injection plant will be designed to inject 18,000 BWPd at 2,040 psig during the fillup phase of the flood when well capacities should be three to four times their stabilized injection rates. After fillup, the plant will be capable of injecting 11,000 BWPd at 2,500 psig.

Initially, 13 producing wells will be converted to water injection wells. There will be six commingled "A" and "B" zone injection wells and seven "B" zone only injection wells. All of the proposed injection wells, with the exception of Karsky-Buresh No. 1, SE-SE Section 26, T140N, R97W, have been fractured. For this reason it is very probable that communication between the "A" and "B" zones exists behind the pipe. Initially, only one string of tubing will be run in the Heath "A" and "B" zone injection wells. If subsequent profile surveys indicate that the desired water volumes are not going into the appropriate sand, steps will be taken to correct the problem. It is proposed that well Head Wock No. 1, NW/4 Section 21, T140N, R96W, be converted to water injection as soon as it has watered out in order to provide additional injection capacity and to improve the sweep in this area.

The investment for two water supply wells have been included in the waterflood installation costs.

Computer model studies indicated that several wells will have a maximum producing capacity of approximately 900 BFPD during waterflood operations. However, we expect no more than 5 wells to be experiencing this rate at any one time. At 100% efficiency, the maximum pump displacement that can be obtained from the beam equipment presently being used in the Dickinson Field is 512 BFPD. Therefore, five high volume pump installations have been included in the cost estimate. There are three scheduled during 1974, one during 1975, and one during 1976. These pumps will be transferred from well to well as required.

In order to optimize flood recovery, two additional producing wells will be required to recover trapped oil. Capital costs for these two wells have been included.

A produced water gathering and treating system has been scheduled for installation during 1973. This water will be used for injection after being treated. This will reduce the demand upon the water supply well. Due to the volume of produced water anticipated and strict pollution control measures that will be in effect, pit disposal will be impossible. The cost for an emergency water disposal pit has also been included.

Treaters in the Dickinson Field are presently being operated with produced gas, produced oil, and propane. Declining gas production will require additional purchases of other types of treater fuel in the future. Therefore, an economic analysis was made comparing the use of natural gas with the use of propane to operate the treaters. The results indicate that an

incremental savings, before tax, of \$241,900 can be realized over the life of the flood by installing a natural gas fuel system. The natural gas will be purchased from Montana Dakota Utility Company on an interruptible service schedule at a sliding scale price varying from \$.47/MCF for a volume greater than 500 MCF per month to \$1.00/MCF for the first 10 MCF per month. They have a 12" high pressure line approximately 3 miles south of the field and a 4" low pressure line running through the east side of the field.

Investment costs have been included for the installation of a radio telemetry system in the proposed Dickinson Unit for the purpose of monitoring alarm status and accumulating production information on the various tracts. The system, which will be installed after unitization, will result in a substantial reduction in operating costs and downtime.

Operating Costs

During 1970, operating costs for the Dickinson-West Dickinson Fields average \$9,900 per well-year. This figure, which does not include treater fuel costs, production taxes, or remedial work, is for wells with conventional or beam type pumping equipment. It is estimated that high volume lift pumping equipment capable of pumping 900 BFPD will increase this cost by \$4,400 per well-year for a total of \$16,500 per well-year for the high volume wells.

The estimated cost to operate the water injection facilities is \$0.03 per barrel of water injected. This includes operation of the injection plant, supply well, and produced water gathering and treating system.

Cost of natural gas purchases will vary with volume, and range from \$721 to \$658 per well-year.

All of the above operating costs are outlined in detail on Table 6.

Economic Evaluation

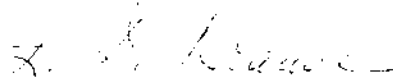
Waterflooding the Dickinson Heath "A" and "B" Sands is indicated to be highly profitable. Tables 7 and 8 show the estimated yearly oil production and cash flow before tax for primary depletion and waterflooding, respectively. Table 9 shows the incremental profit and cash flow due to waterflooding. As shown, waterflooding should increase profits, before Federal income tax, by \$16,311,900. The rate of return, before tax, on the \$2,692,900 incremental investment is indicated to be 40 percent. Payout of this investment should occur in 3.9 years.

The waterflood investment costs used for the economic calculations are shown on Table 5. Producing well operating costs, crude prices, and production taxes were held constant throughout the flood life. It was

assumed that increases in crude prices would compensate for increases in operating costs and taxes.



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APPENDIX

A. Model Description

The basic approach used in the mathematical model may be summarized as follows:

1. Overlay the field with a suitably sized mesh in order to divide the reservoir into small cells.
2. Determine the permeability capacity (Kh) and thickness (h) for each of the cells from a knowledge of these quantities at the well locations.
3. Calculate a steady-state pressure for each cell based on known or assumed production or injection rates at the wells.
4. Determine the fluid velocity at each of the mesh points (corner of a grid) in both the "x" and "y" directions from the calculated pressure gradients and the volume of each cell.
5. Track the expansion of the fronts about the injection wells by moving a series of points according to the calculated velocity vector at each of the points.

The pressures which the model calculates are for steady-state conditions. Therefore, each time the operating conditions are changed, the pressure matrix, velocity matrix, and front locations must be recalculated. Consequently, the unsteady-state conditions which prevail in the field are approximated by a succession of steady-state calculations. The time period for each steady-state calculation is such that the conditions are more or less constant throughout the period.

The pressures of slightly compressible, two-dimensional flow are calculated from:

$$\frac{\partial}{\partial x} K_x h \frac{\partial P}{\partial x} + \frac{\partial}{\partial y} K_y h \frac{\partial P}{\partial y} = \phi \mu c h \frac{\partial P}{\partial t} + Q$$

where:

- K_x = permeability in x direction
- K_y = permeability in y direction
- P = pressure
- h = thickness
- ϕ = porosity
- c = fluid compressibility
- μ = viscosity
- t = time
- Q = source term for injection or production at well locations

The boundary conditions for the pressure calculations are specified by setting the permeability at all points outside the reservoir limits to zero and applying the source term Q to all grids in which a well is located. This permits calculation of a pressure value for each cell in the grid.

The velocity components, V_x and V_y , for each mesh point for a cell are calculated by substituting the appropriate pressure gradient and the permeability for each mesh point into Darcy's equation.

In order to get the front tracking phase started, it is necessary to assume an initial location from which the points may be moved. The model does this by placing a circular array of forty points about each injection well. The radius of this circle is one-half the grid spacing. The points are moved only a short distance at a time. At the end of each move, the swept area inside the flood front is calculated. The volume is then calculated inside area of each flood front and is compared with the actual volume injected during a predesignated time period. When agreement is reached, the "x" and "y" locations of each point are punched out on cards and the fronts are plotted on a map. The location of these points at the end of each time period are used as the starting locations for the fronts during the succeeding period, thereby affording continuity from one period to the next.

B. Model Assumptions

The model results are predicated upon certain assumptions, a knowledge of which is requisite to a proper application and utilization of the program. These assumptions are discussed in the following paragraphs.

One of the major assumptions is that a distinct water-oil interface is formed and that a single fluid is flowing in each region with oil ahead of the front and water behind the front. Then, for single phase flow in regions on either side of the interface, the basic differential equation which describes the pressure distribution is:

$$\frac{\partial^2 P}{\partial X^2} + \frac{\partial^2 P}{\partial Y^2} = \frac{C \phi \mu}{K} \frac{\partial P}{\partial t} + Q$$

Upon extending this equation to incorporate varying thickness and permeabilities in the x and y directions, we get the equation given under the section on model description that forms the basis for the model.

The assumption of steady-state conditions means that the sum of all injection rates must equal the sum of all producing rates for the area being considered. This means that the calculations before fillup must be handled in a different manner than after the system is liquid filled. During fillup, the gas space to be filled with water can be approximated and added to the producing rates of each producing well in the area. This means that injection rates control the location of the flood fronts for this

time interval. After fillup, the assumption of steady-state more closely applies.

Another important assumption in the model is that the mobility ratio is unity.

C. Application of the Model to the Heath Sand of the Dickinson Field

None of the above assumptions appeared to limit the application of this model to the Heath Sand. The Heath "A" zone overlies the "B" zone and is separated from it by a thin shale streak. A 10 acre grid was used as the computing mesh to represent the "A" and "B" zones. As mentioned previously, production and injection rates for a well containing both zones were proportioned between the zones based on the capacity (md-ft) of each zone.

In order to get a reasonable prediction of waterflood life, it is necessary to make a separate run when water breakthrough occurs in a well, when the percent water-cut is increased in an individual well, and when a well is shut-in because of high water-cut. First and second line producers were allowed to cycle water from the period of first breakthrough until 70 percent of the well's circumference was behind the flood front, at which time the well was shut-in. Last line producers were produced to a WOR of 30 to 1. During the period when injected water is being cycled the advance of the flood front is, of course, greatly retarded.

This particular model should be a very valuable tool for flood surveillance work, which is an area where a large contribution to profits can be made. After stabilized injection rates are established in the field, it is suggested that these rates be input into the model and a prediction run be made of flood front locations one year into the future. It may be that injection rates should be changed considerably to prevent the trapping of oil, or perhaps a slight change in the injection pattern could result in a significant increase in oil recovery. It is important that this analysis be made early in the life of the waterflood before flood fronts have advanced too far. It requires only a day or two to make flood front predictions for one year into the future after the volumetric data has been input into the model. The results of this study will be affected significantly if predicted injection rates are considerably different from actual field injection rates.

TABLE I

SUMMARY OF
FIELD AND RESERVOIR DATA

Date of Discovery	January, 1958
Type of Trap	Stratigraphic
Producing Formation	Heath Sand
Producing Mechanism	Dissolved Gas Drive
Productive Area	11,272 acres
<u>Reservoir Characteristics</u>	
Avg. Depth to Top of Pay	7,900 feet
Avg. Productive Thickness	5.8 feet
Acre-feet of Oil Pay	65,772
Avg. Porosity	14.8 %
Avg. Air Permeability	194 md.
Avg. Water Saturation	22 %
<u>Fluid Characteristics</u>	
Gravity of Oil, Degrees API	35
Original BHP @ - 5,300 Datum, psig	3,475
May-1971 BHP @ - 5,300 Datum, psig	900
Reservoir Temperature, Degrees F	196
Bubble Point Pressure, psig	2,147
Original Solution GOR, CFPB	130
FVF at Bubble Point	1.116
FVF at Original Pressure	1.106
Viscosity of Crude at 196°F and 2,147 psig	2.82 cp.
<u>Reserves, Present Operations</u>	
Original Oil in Place	52,781,600 STB
Ult. Primary Recovery	9,750,000 STB
Primary Recovery, % of OOIP	18.5
Cumulative Production (6-1-71)	5,943,562 STB
Reserves (6-1-71)	3,806,438 STB
<u>Well Status</u>	
Development Pattern, Acres	160 and 320
No. of Producing Wells (6-1-71)	41
Maximum Producing Rate, 12-'67	4,689 BOPD - 28 wells
Present Producing Rate, 5-'71	3,197 BOPD

TABLE 2

STABILIZED INJECTION RATE CALCULATIONS (BWPD)

WELL LOCATION	<u>kah, MD.-FT.</u>		<u>CALCULATED INJECTIVITY</u>			<u>FINAL-PREDICTED INJECTIVITY</u>			<u>EFFECTIVE INJECTIVITY</u>		
	<u>A ZN.</u>	<u>B ZN.</u>	<u>A ZN.</u>	<u>B ZN.</u>	<u>TOTAL</u>	<u>A ZN.</u>	<u>B ZN.</u>	<u>TOTAL</u>	<u>A ZN.</u>	<u>B ZN.</u>	<u>TOTAL</u>
1. SE 33-97W		300		198	198		200	200		180	180
2. NW 34-97W	19	700	13	462	475	20	500	520	20	450	470
3. SE 27-97W	535	964	353	636	989	300	600	900	300	540	840
4. NW 02-97W		110		73	73		100	100		90	90
5. SE 26-97W	3,746	1,479	2,472	976	3,448	2,460	970	3,430	2,200	840	3,040
6. NW 30-96W		850		561	561		600	600		540	540
7. NW 31-96W	3,074	400	2,029	264	2,293	1,800	300	2,100	1,550	300	1,850
8. SE 19-96W	516	383	341	253	594	350	250	600	350	250	600
9. NW 20-96W		900		594	594		600	600		540	540
10. SE 32-96W	200	171	132	113	245	150	100	250	150	100	250
11. SE 17-96W		550		363	363		400	400		360	360
12. NW 33-96W		200		132	132		100	100		100	100
13. SE 21-96W		1,745	_____	<u>1,152</u>	<u>1,152</u>	_____	<u>1,100</u>	<u>1,100</u>	_____	<u>950</u>	<u>950</u>
TOTALS			5,340	5,777	11,117	5,080	5,820	10,900	4,570	5,240	9,810

TABLE 3

HEATH SAND "A" ZONE
INJECTION AND PRODUCTION RATES (B.P.D.)
AT THE END OF CERTAIN TIME PERIODS

<u>Well</u> <u>Location</u>	<u>0.5</u> <u>Years</u>	<u>2.0</u> <u>Years</u>	<u>5.0</u> <u>Years</u>	<u>10.0</u> <u>Years</u>	<u>23.0</u> <u>Years</u>
NW 34-97W	-20	-20	-20	-20	-
SE 27-97W	-300	-160	-160	-160	-
SE 26-97W	-2200	-900	-700	-505	-150
NW 31-96W	-1550	-620	-280	-	-300
SE 19-96W	-350	-175	-220	-20	-
SE 32-96W	-150	-20	-20	-	-
SE 34-97W	50	40	110	110	-
NW 35-97W	360	110	110	-	-
SW 35-97W	-	-	70	70	70
NW 26-97W	490	160	160	160	-
SE 23-97W	80	30	70	70	80
NW 36-97W	1200	600	-	-	-
SW 36-97W	245	100	280	280	300
SE 25-97W	660	270	270	-	-
SW 30-96W	390	150	-	-	-
NE 31-96W	550	-	-	-	-
SE 30-96W	35	50	-	-	-
NE 30-96W	80	60	60	-	-
SE 31-96W	70	90	-	-	-
NW 32-96W	130	90	90	-	-
NW 29-96W	220	140	165	-	-
NW 28-96W	5	5	15	15	-
NW 27-96W	5	-	-	-	-

NOTE: Negative rates denote injection and positive rates
production.

TABLE 4

HEATH SAND "B" ZONE
INJECTION AND PRODUCTION RATES (B.P.D.)
AT THE END OF CERTAIN TIME PERIODS

Well Location	2.0 Years	3.5 Years	5.0 Years	10.5 Years	27.0 Years
NW 33-97W	-180	-180	-80	-150	-
NW 03-97W	60	100	-	-	-
NW 34-97W	-450	-450	-150	-50	-
SE 27-97W	-540	-540	-150	-	-
SE 34-97W	800	800	-	-	-
NW 02-97W	-90	-90	-75	-75	-100
SW 35-97W	-	-	400	400	-
NW 35-97W	375	375	-	-	-
SE 26-97W	-840	-840	-800	-800	-200
SE 35-97W	170	120	275	275	275
SW 36-97W	110	70	220	220	-
NW 36-97W	200	200	200	-	-
SE 25-97W	530	530	530	530	-
NW 30-96W	-540	-540	-540	-200	-
SW 30-96W	435	460	-	-	-
NW 31-96W	-300	-300	-300	-200	-150
NE 31-96W	55	65	65	65	-
SE 31-96W	5	5	45	70	70
SE 30-96W	5	15	125	-	-
NE 30-96W	365	550	-	-	-
SE 19-96W	-250	-250	-250	-100	-
NW 20-96W	-540	-540	-540	-50	-
NW 29-96W	70	70	400	-	-
SW 29-96W	10	10	50	150	170
NW 32-96W	20	20	60	85	-
SE 32-96W	-100	-100	-100	-100	-100
NE 32-96W	90	90	90	-	-
SE 29-96W	20	20	150	165	-
NE 29-96W	-	-	-	400	400
SE 20-96W	340	200	440	-	-
SE 17-96W	-360	-360	-360	-50	-
NW 21-96W	400	350	510	-625	-265
NW 28-96W	200	150	300	-	-
SW 28-96W	70	70	70	-	-
NW 33-96W	-100	-100	-100	-100	-100
SE 21-96W	-950	-950	-950	-750	-
NW 22-96W	600	730	-	-	-
SE 22-96W	10	10	15	40	-
SE 15-96W	200	150	300	600	-
NW 23-96W	100	80	150	250	-

NOTE: Negative rates denote injection, and positive rates production.

TABLE 6

Waterflood Operating Costs

<u>Year</u>	<u>Well Count</u>	<u>Producing Wells</u>		<u>Injection Plant*3</u>	<u>Treater Fuel Gas*4</u>	<u>Total</u>
		<u>Beam Units*1</u>	<u>HVL*2</u>			
1972	34	336,600		0	22,400	359,000
1973	28	277,200		180,700	18,500	476,400
1974	24+3HVL	237,600	49,500	122,800	17,900	427,800
1975	23+4HVL	227,700	66,000	100,000	17,900	411,600
1976	20+5HVL	198,000	82,500	88,600	16,600	385,700
1977	17+5HVL	168,300	82,500	83,700	14,700	349,200
1978	14+5HVL	138,600	82,500	74,000	12,800	307,900
1979	11+5HVL	108,900	82,500	54,200	10,900	256,500
1980	10+5HVL	99,000	82,500	52,100	10,200	243,800
1981	9+5HVL	89,100	82,500	43,600	9,700	224,900
1982	9+5HVL	89,100	82,500	39,600	9,700	220,900
1983	9+5HVL	89,100	82,500	36,600	9,700	217,900
1984	8+5HVL	79,200	82,500	34,400	9,000	205,100
1985	7+5HVL	69,300	82,500	32,700	8,400	192,900
1986	6+5HVL	59,400	82,500	30,900	7,700	180,500
1987	5+5HVL	49,500	82,500	28,600	7,100	167,700
1988	5+5HVL	49,500	82,500	26,000	7,100	165,100
1989	4+5HVL	39,600	82,500	22,600	6,400	151,100
1990	2+5HVL	19,800	82,500	19,900	5,200	127,400
1991	2+4HVL	19,800	66,000	18,200	4,600	108,600
1992	1+4HVL	9,900	66,000	15,900	4,600	96,400
1993	1+4HVL	9,900	66,000	15,900	4,600	96,400
1994	1+4HVL	9,900	66,000	14,800	4,600	95,300
1995	1+3HVL	9,900	49,500	14,800	3,300	72,700
1996	1+3HVL	9,900	49,500	10,000	3,300	72,700
1997	1+3HVL	9,900	49,500	10,000	3,300	72,700
1998	1+3HVL	9,900	49,500	10,000	3,300	72,700
1999	1+3HVL	9,900	49,500	10,000	3,300	72,700

*1 Based on \$9,000 per well-year (does not include production taxes, treater fuel gas, or remedial work).

*2 Based on \$16,500 per well-year (does not include production taxes, treater fuel gas, or remedial work).

*3 Based on \$0.03 per barrel of water injected.

*4 Cost per MCF based on volume used.

TABLE 8

Dickinson Unit Economics With Waterflood

Year	Oil Production M-Bbl.	Gross Revenue M\$*1	Operating Costs M\$	Investment Schedule		Profit Before FIT, M\$
				Tang., M\$	Total, M\$	
1972	835.8	1908.7	454.0	1011.8	1150.7	303.9
1973	536.3	1224.7	537.4	1131.4	1149.1	-461.7
1974	812.0	1854.4	520.1	119.9	123.0	1211.2
1975	1493.0	3409.6	581.4	119.9	223.0	2605.2
1976	1625.0	3711.0	570.5	43.9	45.0	3095.5
1977	1397.0	3190.3	508.1	0.0	0.0	2682.2
1978	1022.0	2333.9	424.1	12.9	13.1	1896.7
1979	721.0	1646.5	338.5	89.9	207.0	1101.0
1980	575.0	1313.1	309.2	0.0	0.0	1003.9
1981	493.0	1125.8	280.9	0.0	0.0	844.9
1982	433.0	988.8	270.1	0.0	0.0	718.7
1983	401.0	915.7	263.5	0.0	0.0	652.2
1984	372.0	849.5	247.4	0.0	0.0	602.1
1985	338.0	771.9	231.3	0.0	0.0	540.5
1986	314.0	717.0	216.2	0.0	0.0	500.8
1987	283.0	646.3	199.8	0.0	0.0	446.4
1988	253.0	577.7	193.8	0.0	0.0	383.9
1989	222.0	506.9	176.3	0.0	0.0	330.6
1990	194.0	443.0	149.4	0.0	0.0	293.5
1991	171.0	390.5	128.0	0.0	0.0	262.4
1992	154.0	351.6	113.9	0.0	0.0	237.7
1993	139.0	317.4	112.2	0.0	0.0	205.2
1994	123.0	280.9	109.2	0.0	0.0	171.6
1995	121.0	276.3	86.4	0.0	0.0	189.8
1996	114.0	260.3	85.6	0.0	0.0	174.6
1997	110.0	251.2	85.2	0.0	0.0	165.9
1998	106.0	242.0	84.7	0.0	0.0	157.3
1999	91.0	207.8	83.0	0.0	0.0	124.7
TOTAL	13449.1	30714.3	7361.4	2530.3	2910.9	20442.0

*1 Based on gross crude price of \$3.06/BO less trucking (\$0.45/BO), 12.5% royalty, and salvage.

TABLE 9

Dickinson Unit Economics

Incremental Profit Due to Waterflooding

Year	Oil Production M-Bbl.	Gross Revenue M\$	Operating Costs M\$	Investment Schedule		Profit Before FIT, M\$
				Tang., M\$	Total, M\$	
1972	0.0	0.0	0.0	796.8	932.7	-932.7
1973	-84.2	-192.2	139.4	1131.4	1149.1	-1480.7
1974	352.1	804.1	172.1	119.9	123.0	509.0
1975	1149.9	2626.0	246.7	119.9	223.0	2156.3
1976	1369.5	3127.5	277.3	43.9	45.0	2805.2
1977	1207.2	2756.9	254.0	0.0	0.0	2502.9
1978	879.6	2008.8	185.9	12.0	13.1	1809.8
1979	617.0	1409.0	199.4	89.9	207.0	1002.6
1980	498.3	1138.1	173.2	0.0	0.0	964.8
1981	434.6	992.5	178.7	0.0	0.0	813.7
1982	389.9	890.4	169.6	0.0	0.0	720.7
1983	401.0	915.7	263.5	0.0	0.0	652.2
1984	372.0	849.5	247.4	0.0	0.0	602.1
1985	338.0	771.9	231.3	0.0	0.0	540.5
1986	314.0	717.0	216.2	0.0	0.0	500.8
1987	283.0	646.3	199.8	0.0	0.0	446.4
1988	253.0	577.7	193.8	0.0	0.0	383.9
1989	222.0	506.9	176.3	0.0	0.0	330.6
1990	194.0	443.0	149.4	0.0	0.0	293.5
1991	171.0	390.5	128.0	0.0	0.0	262.4
1992	154.0	351.6	113.9	0.0	0.0	237.7
1993	139.0	317.4	112.2	0.0	0.0	205.2
1994	123.0	280.9	109.2	0.0	0.0	171.6
1995	121.0	276.3	86.4	0.0	0.0	189.8
1996	114.0	260.3	85.6	0.0	0.0	174.6
1997	110.0	251.2	85.2	0.0	0.0	165.9
1998	106.0	242.0	84.7	0.0	0.0	157.3
1999	91.0	207.8	83.0	0.0	0.0	124.7
TOTAL	10320.0	23568.3	4563.5	2315.3	2692.9	16311.9

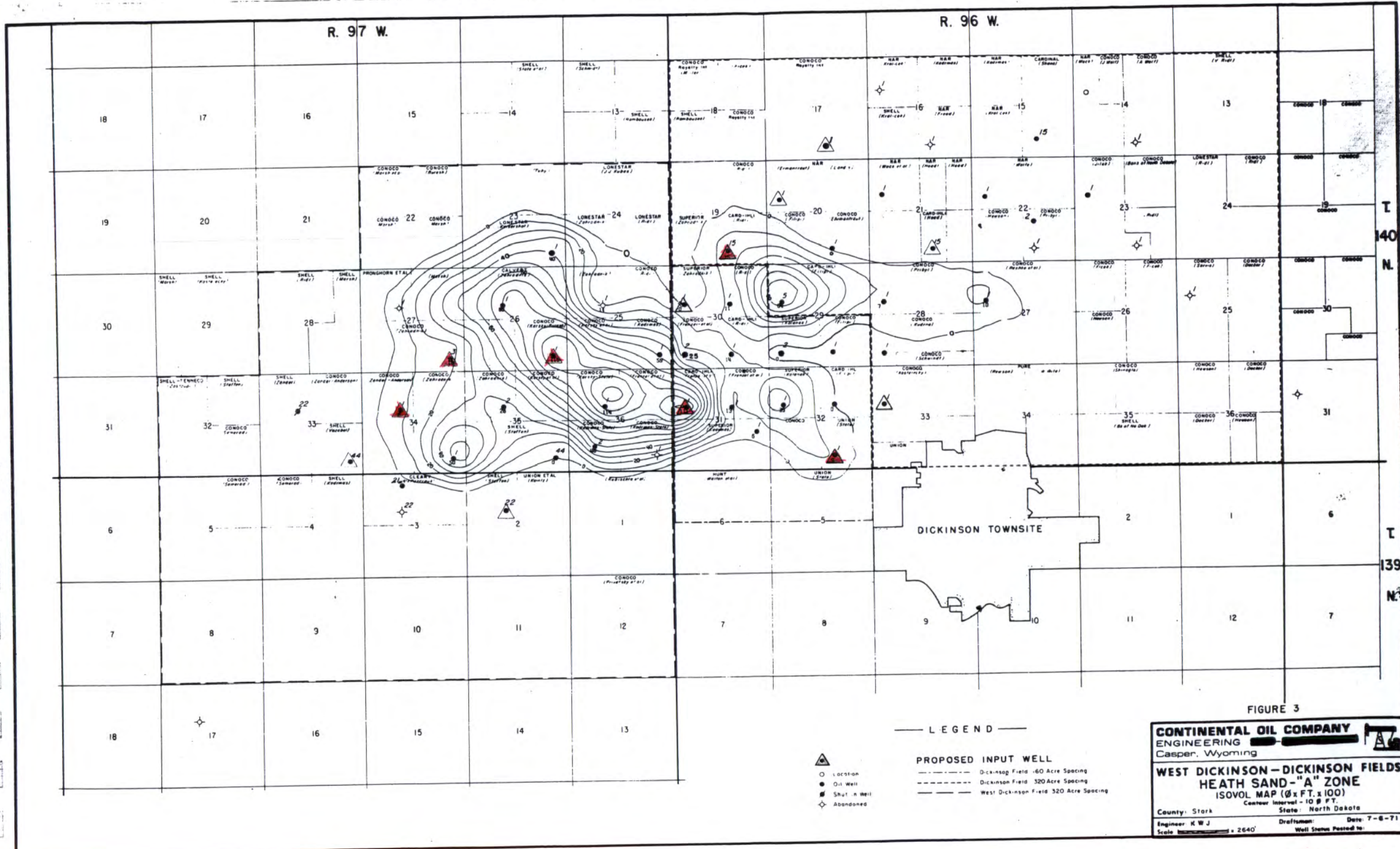
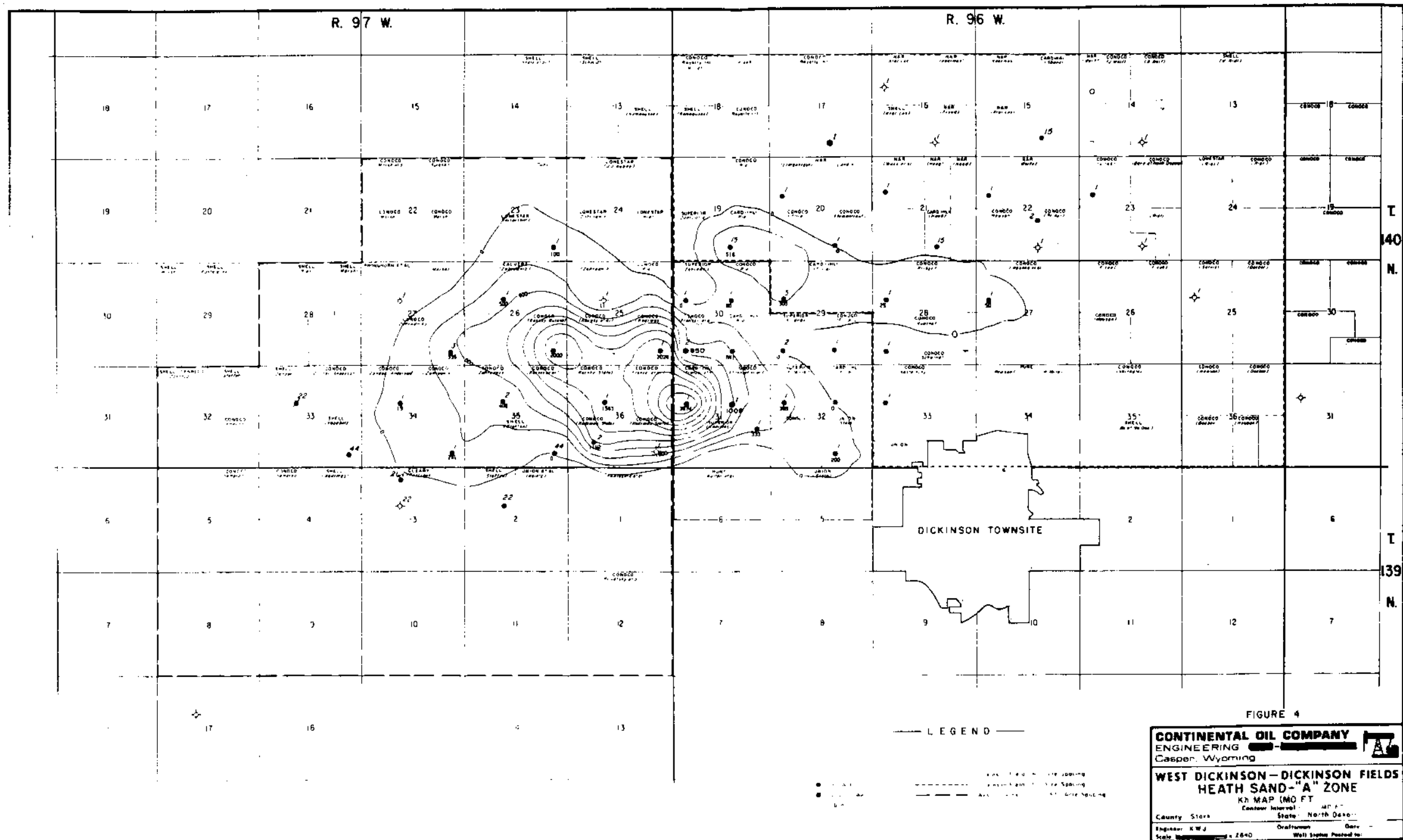


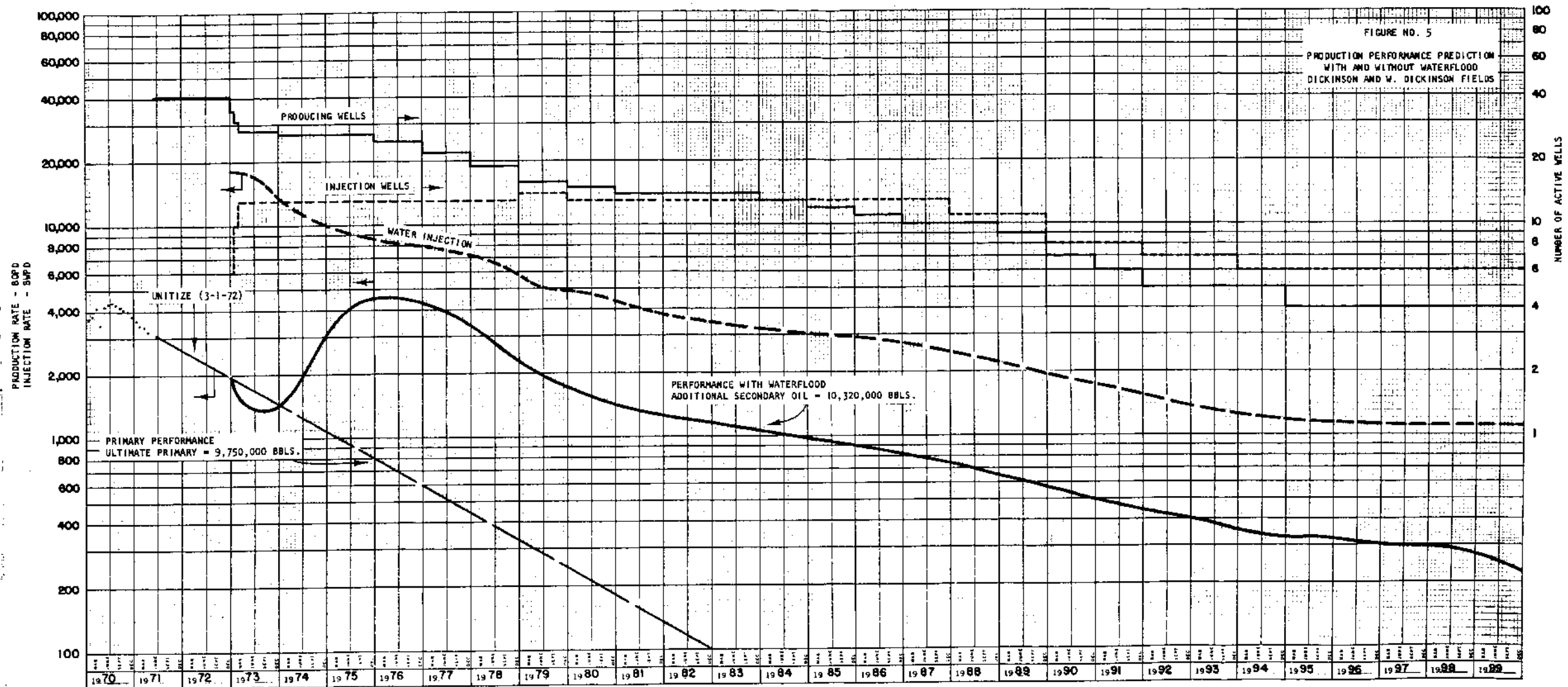
FIGURE 3

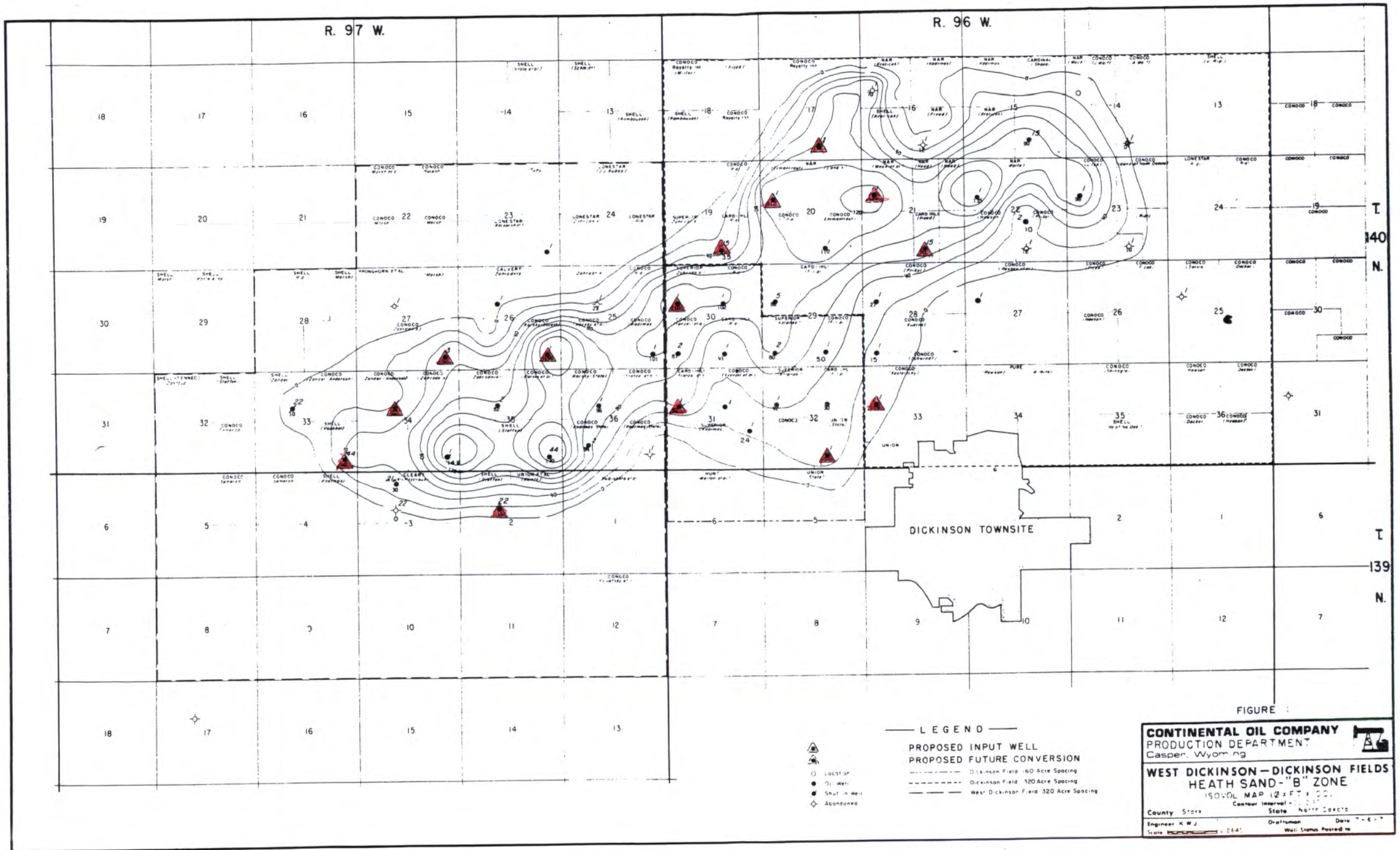
CONTINENTAL OIL COMPANY
ENGINEERING
Casper, Wyoming

WEST DICKINSON - DICKINSON FIELDS
HEATH SAND - "A" ZONE
ISOVOL MAP (8 x FT. x 100)
Contour Interval - 10 # FT.

County: Stark State: North Dakota
Engineer: K W J Draftsman: Date: 7-6-71
Scale: 1" = 2640' Well Status Posted to:







YAPUNCICH, SANDERSON & BROWN LABORATORIES

P. O. BOX 593
59103

BILLINGS, MONTANA

12 N. 22ND ST.

Lab. No. 8094

WATER ANALYSIS REPORT

Field DICKINSON County STARK State NORTH DAKOTA
 Well No. 1 RIDL Location NE SW 30-140N-96W
 Formation DAKOTA Depths 5640-5750'
 Operator CONTINENTAL OIL COMPANY Date Sampled 7-31-67
 DST No. 1 Sample Date Analyzed 7-31-67
 Other Data RECOVERED 5000 FEET WATER. REVERSE CIRCULATING TOOL @ 800'
FROM BOTTOM. BOTTOM HALF OF WATER REVERSE CIRCULATED OUT OF PIPE.
SAMPLE TAKEN NEAR BOTTOM OF WATER COLUMN. SAMPLE CLEAR WITH SOME
SHALE SEDIMENT PRESENT. ORGANIC MATTER PRESENT.

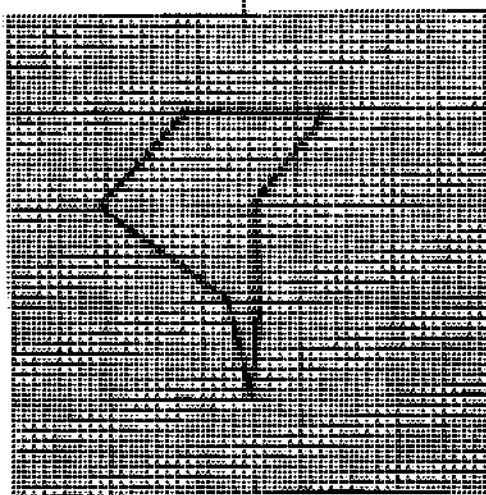
Constituents	PPM	MEQ.	MEQ. %	Total Solids in Parts per Million
Sodium	7,993	347.69	39.74	By evaporation _____
Calcium	1,570	78.34	8.95	After ignition _____
Magnesium	230	11.48	1.31	Calculated <u>25.347</u>
Sulfate	233	4.85	0.55	pH <u>7.4</u>
Chloride	15,200	428.64	48.99	Specific Gravity @ 60°F <u>1.016</u>
Carbonate	0	0	0	Resistivity @ 68°F
Bicarbonate	245	4.02	0.46	ohms/meter ³ <u>0.28</u>
Chloride as NaCl <u>25,065</u> PPM.		Total Solids From Resistivity as NaCl <u>25.196</u> PPM.		

NOTE: Sodium and potassium reported as sodium. MEQ.=milliequivalents per liter. PPM=parts per million (milligrams per liter). 1 PPM equivalent to 0.0001%

FIELD RESULTS

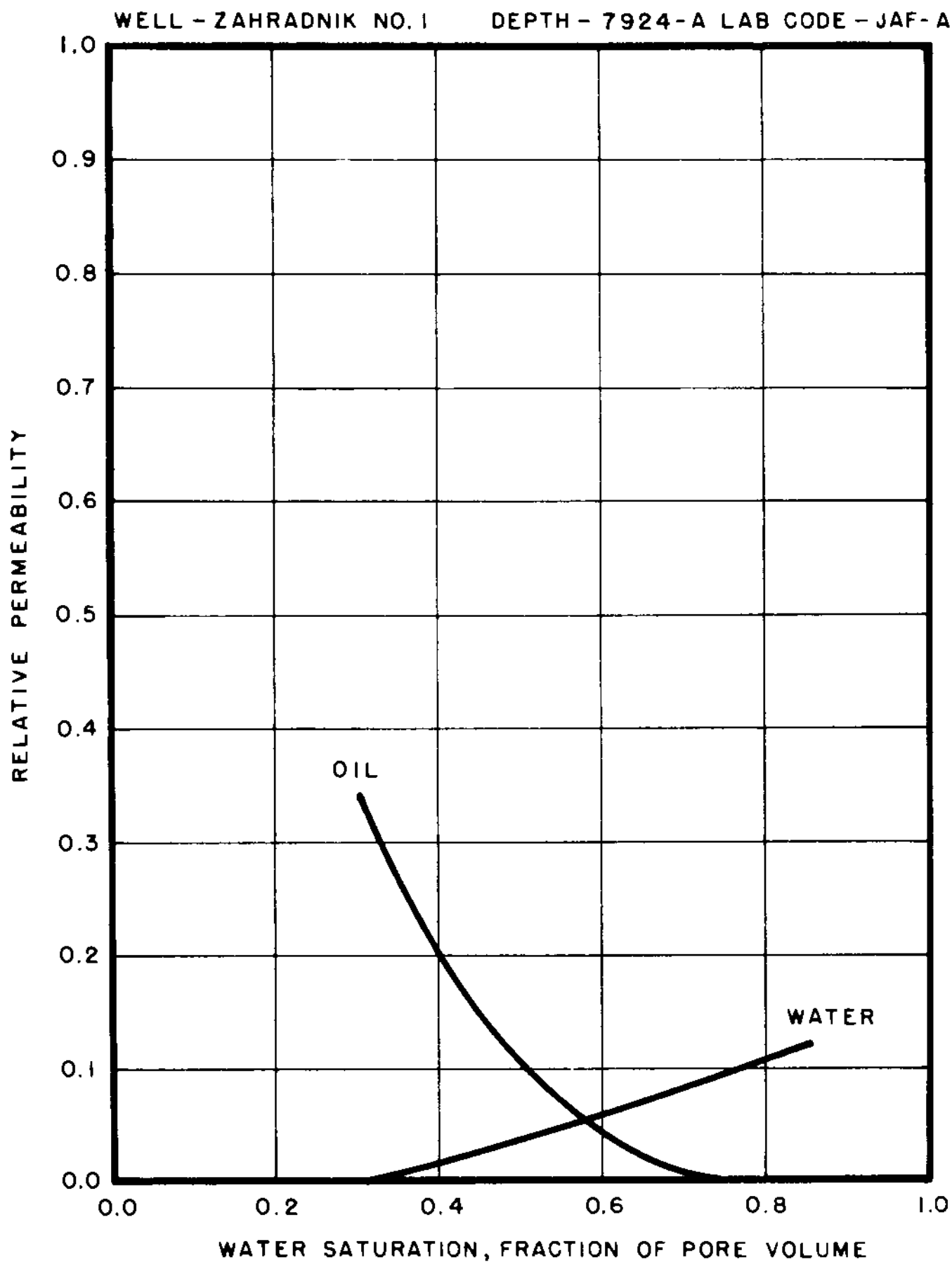
pH - - - - - 7.4
 H₂S - - - - - NONE
 FREE CO₂ - - 181 PPM
 FREE O₂ - - NONE
 IRON - - - - 87 PPM

Na
Ca
Mg
Fe

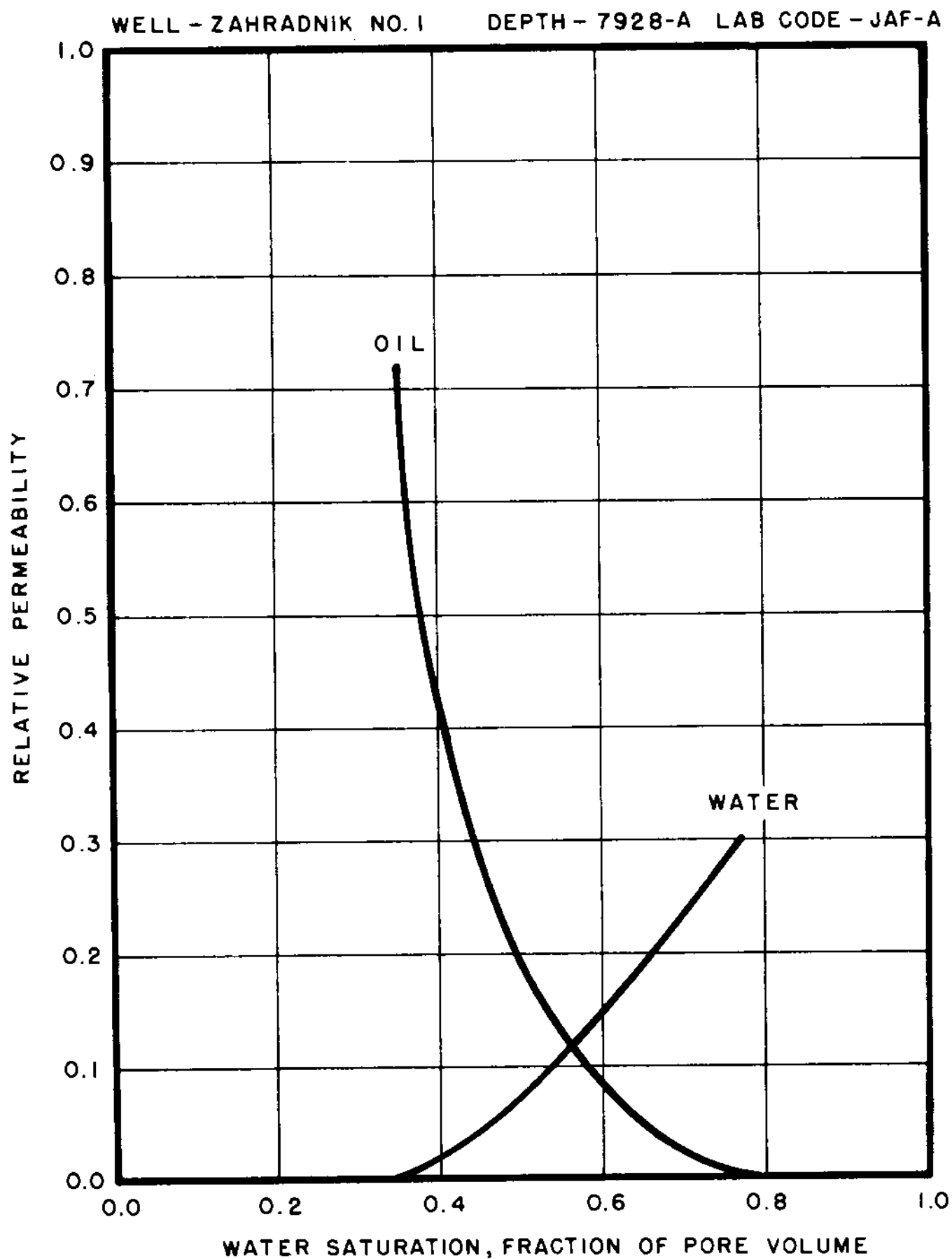
WATER ANALYSIS PATTERN
Scale MEQ. Per Unit

Cl
50
HCO₃
5
SO₄
5
CO₃
5

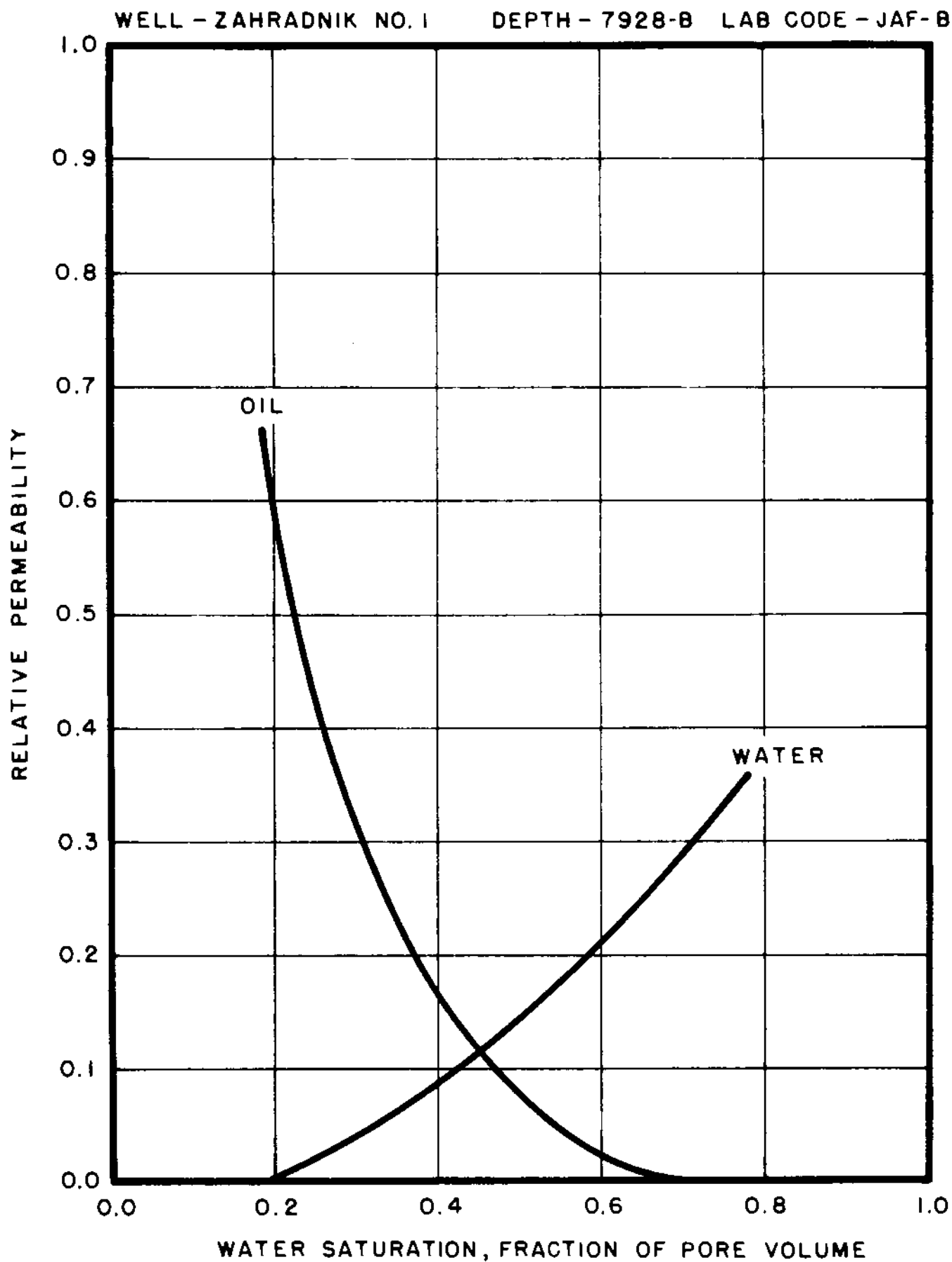
KRW AND KRO AS A FUNCTION OF WATER SATURATION



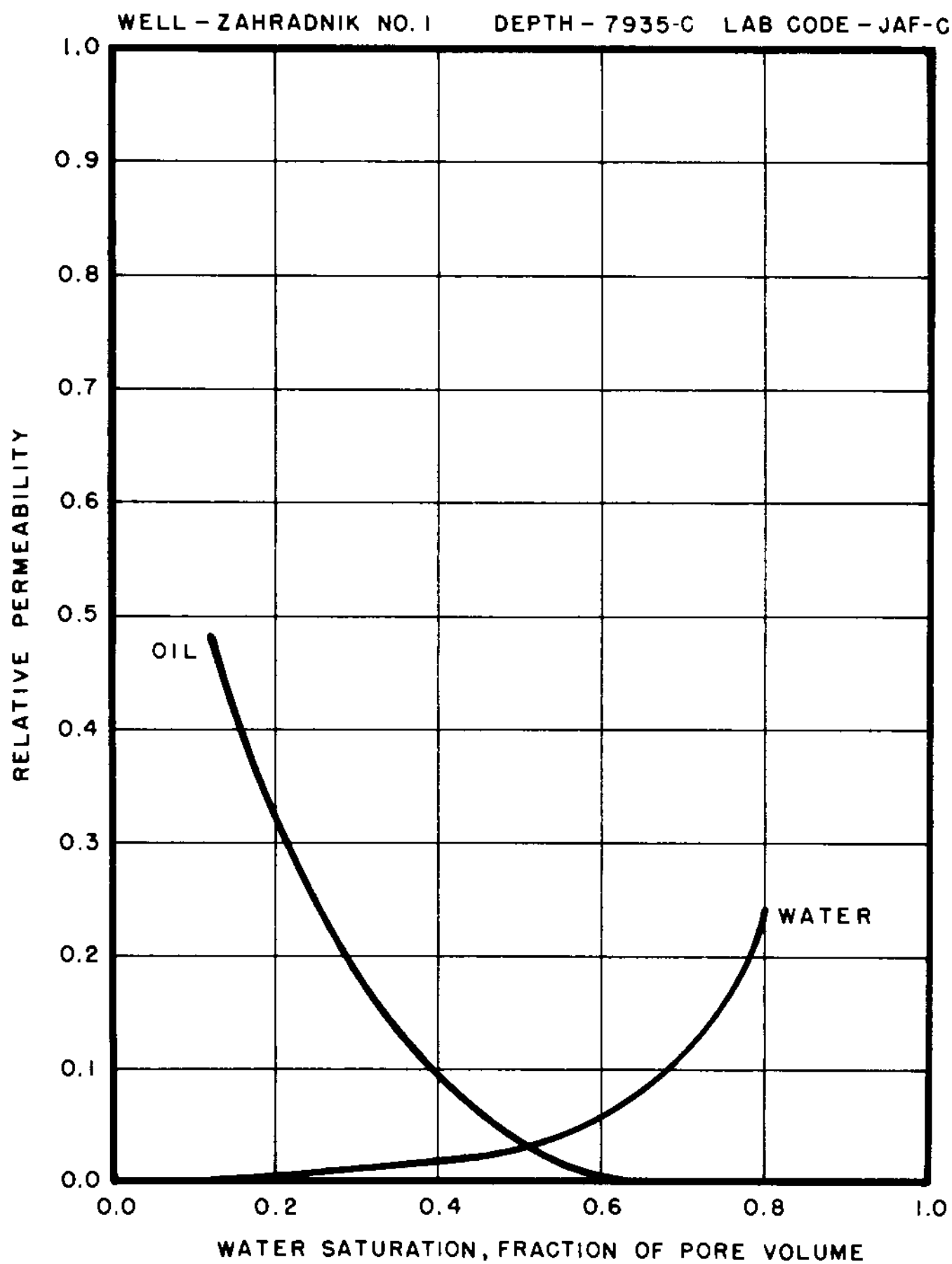
KRW AND KRO AS A FUNCTION OF WATER SATURATION



KRW AND KRO AS A FUNCTION OF WATER SATURATION



KRW AND KRO AS A FUNCTION OF WATER SATURATION



FRACTIONAL FLOW ANALYSISCORE NO. 7924-APROBLEM JAF

$$\mu_w / \mu_o = 0.15$$

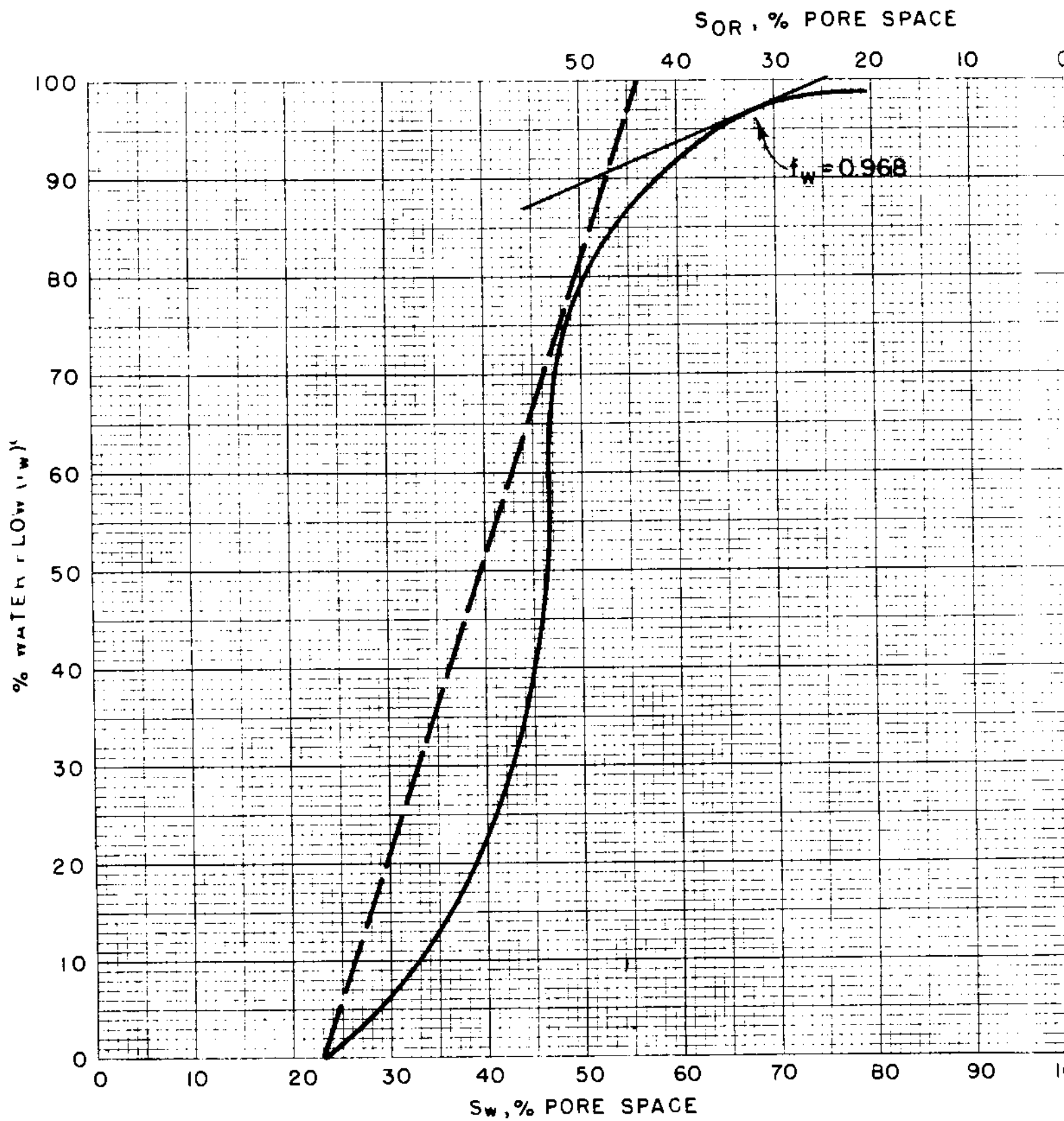


FIGURE 12

FRACTIONAL FLOW ANALYSIS

CORE NO. 7928-A

PROBLEM JAF

$$\mu_w / \mu_o = 0.15$$

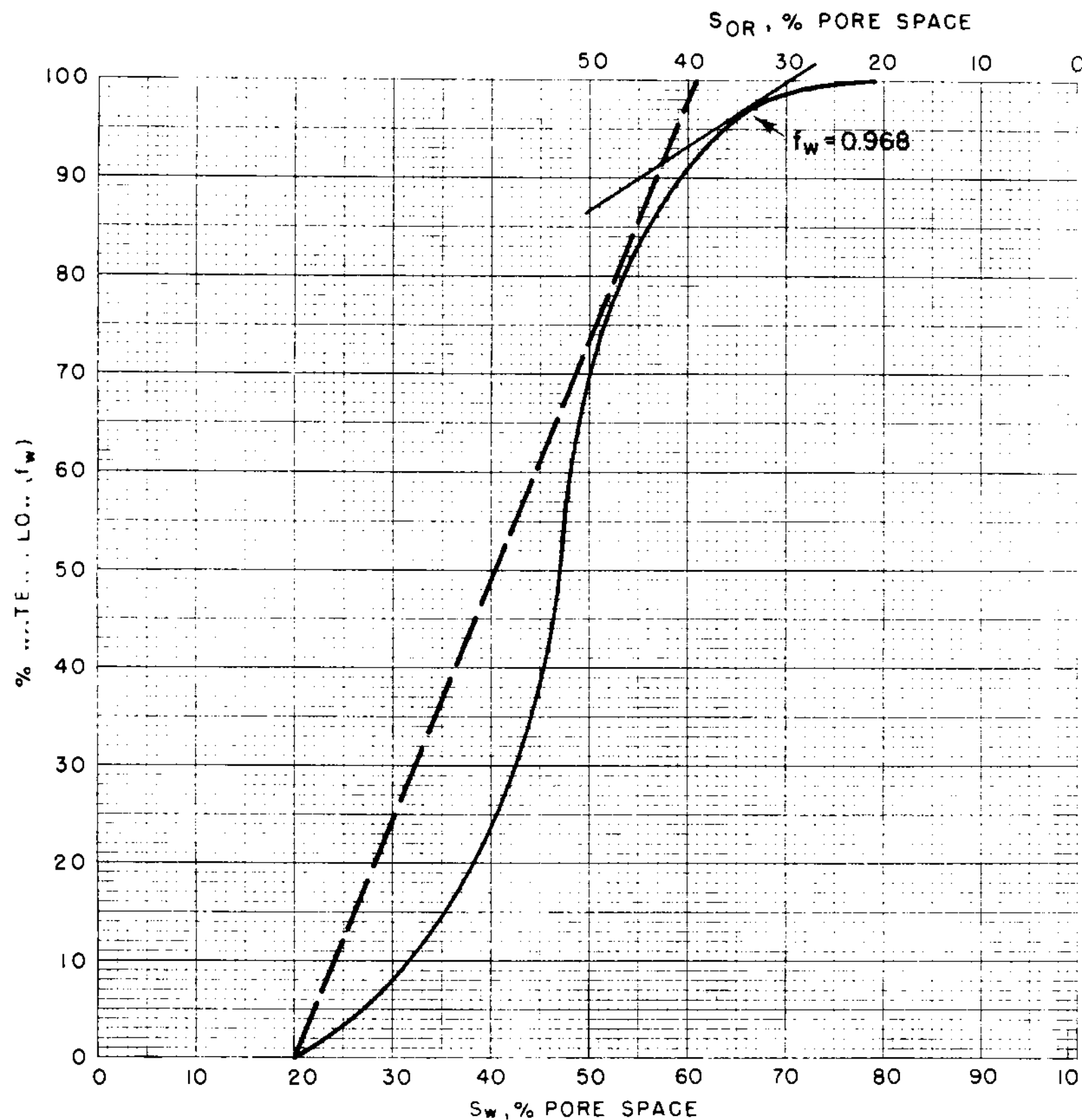


FIGURE 13

FRACTIONAL FLOW ANALYSIS

CORE NO. 7928-B

PROBLEM JAF

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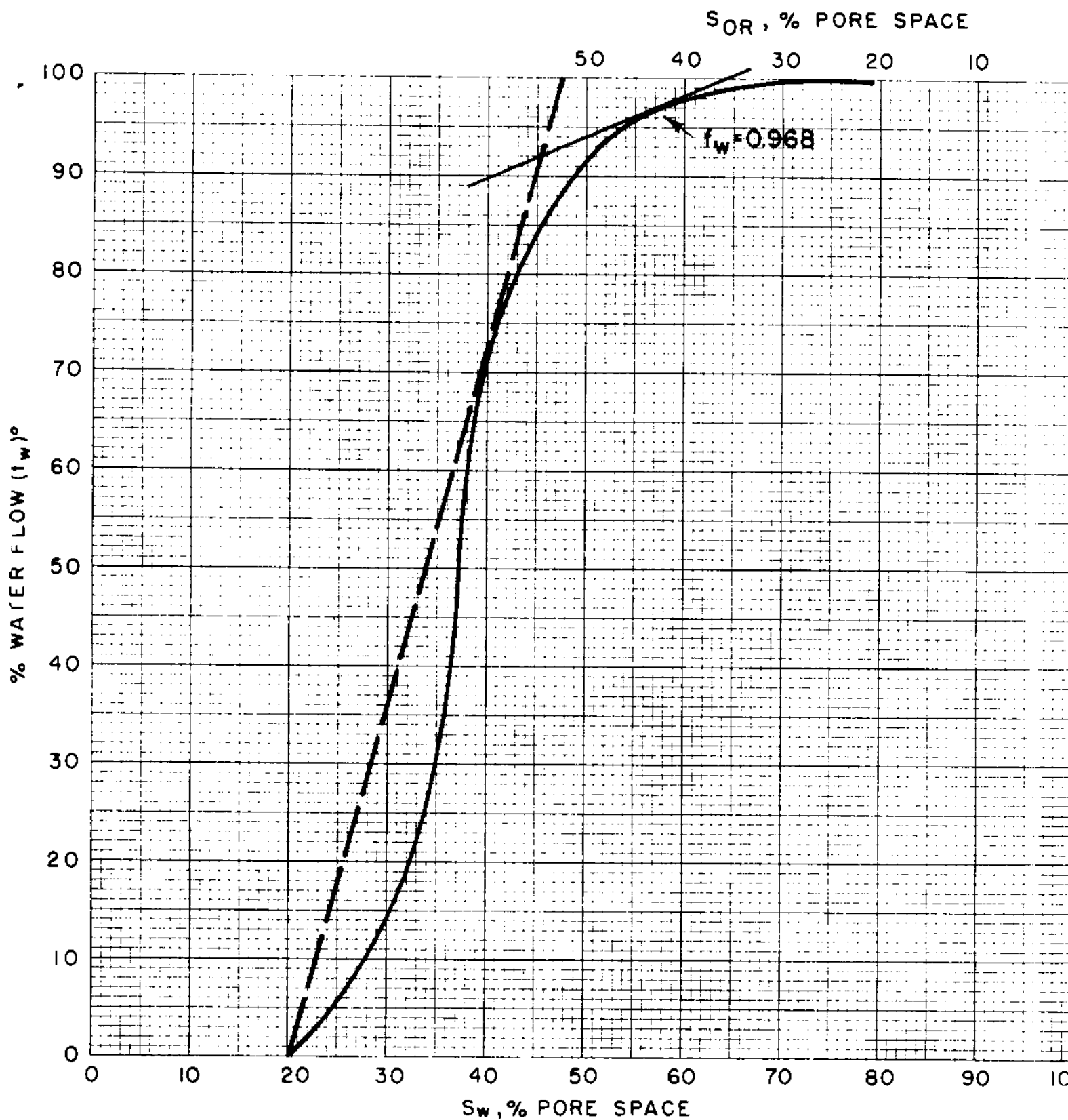
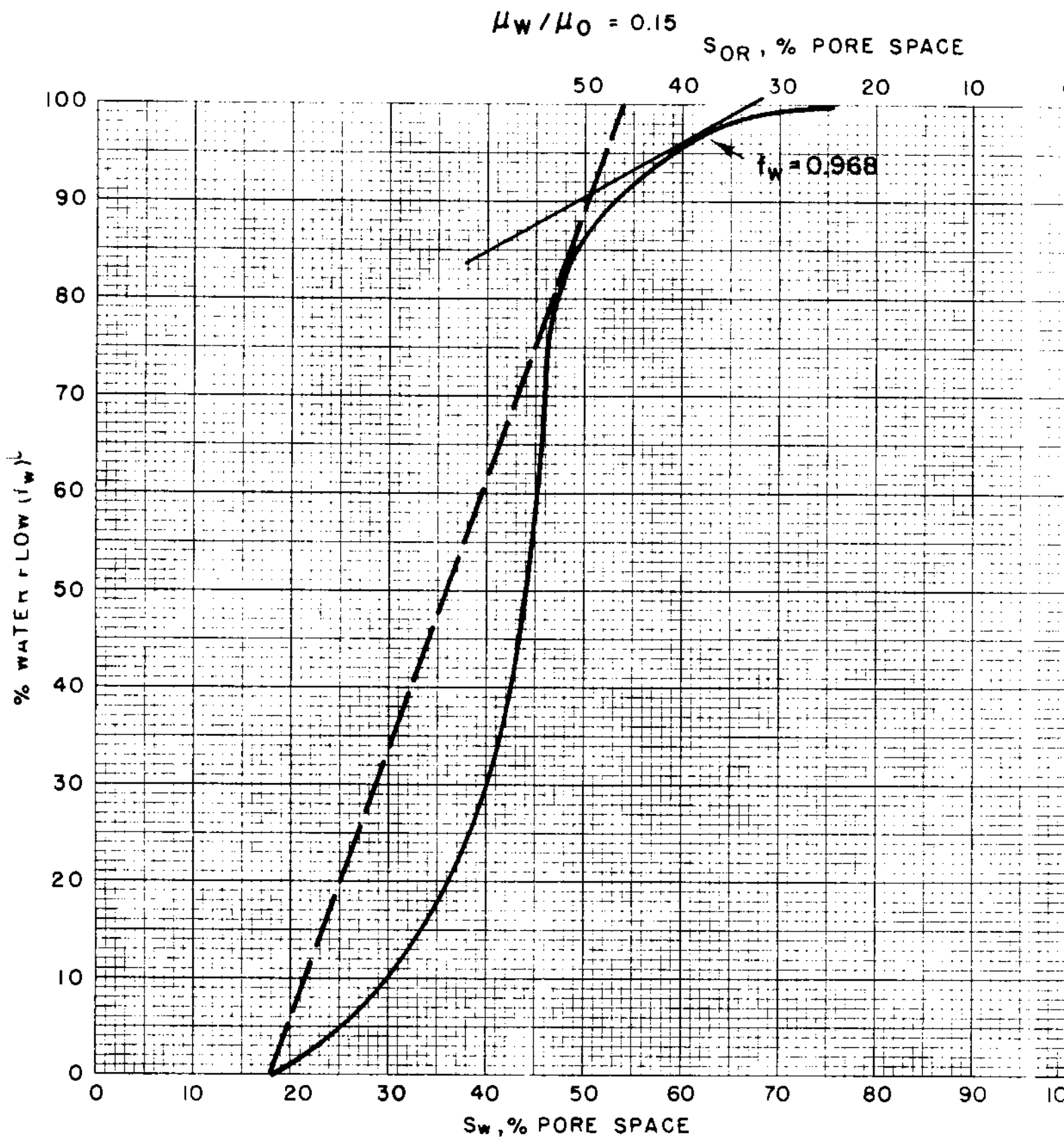


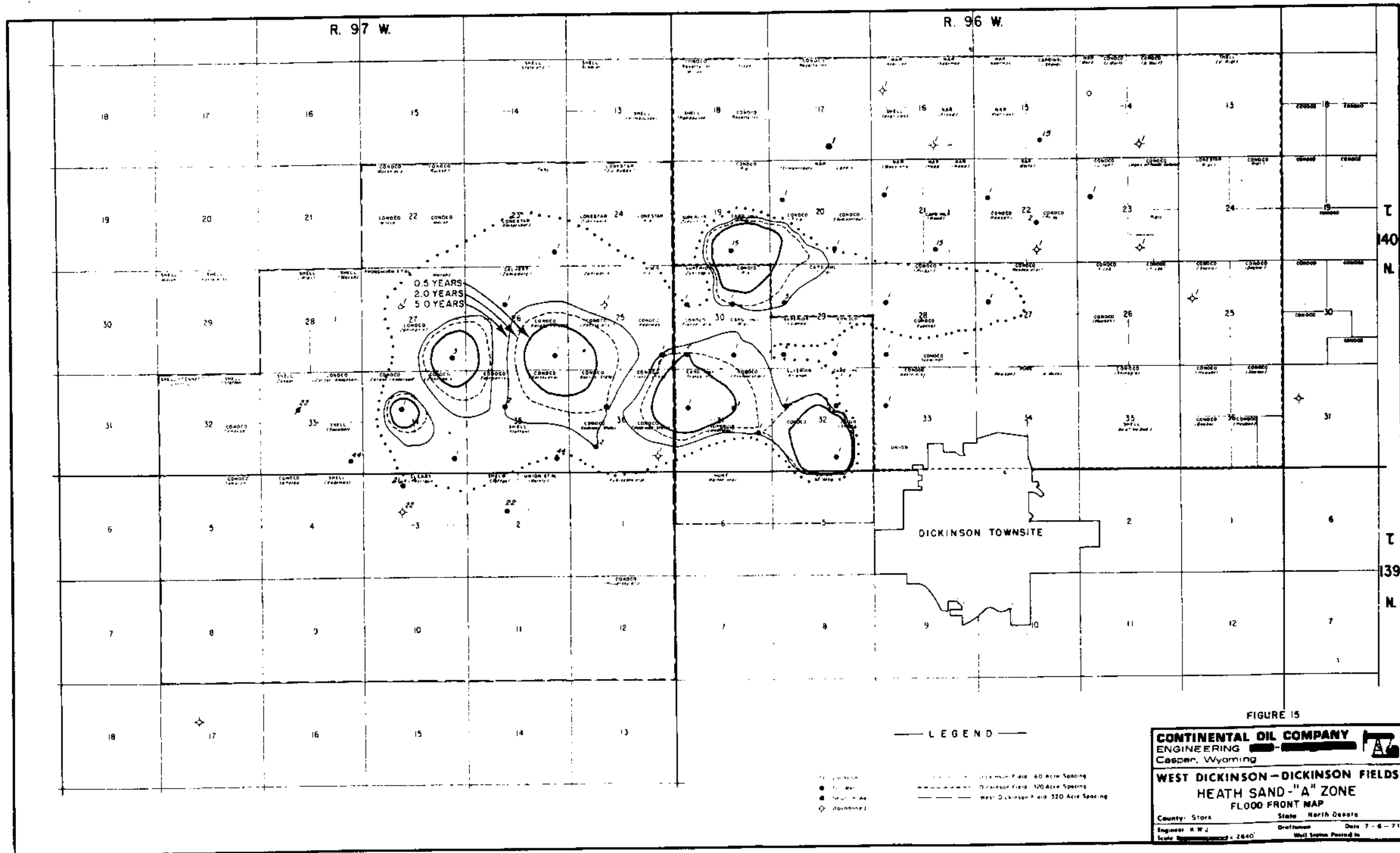
FIGURE 14

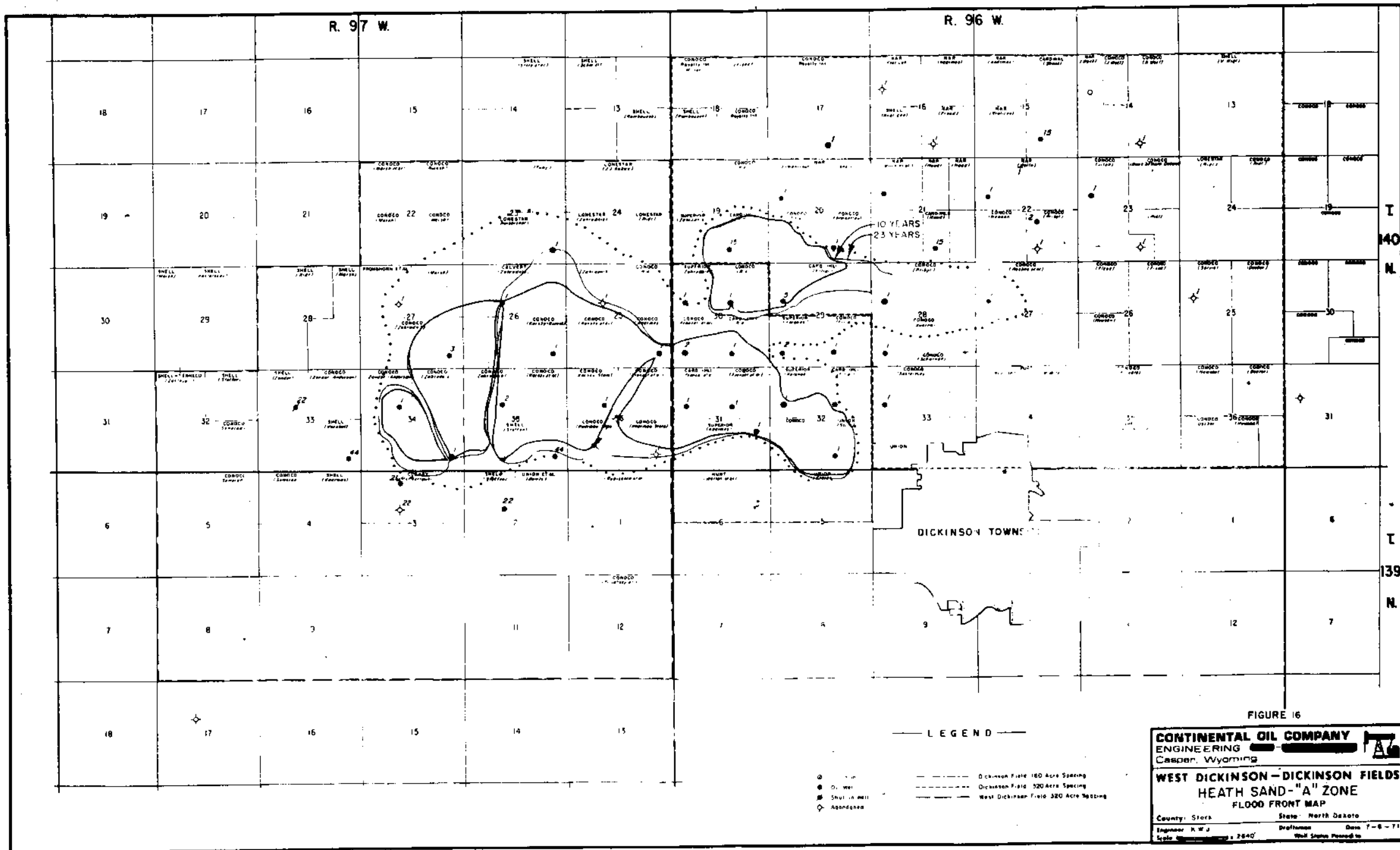
FRACTIONAL FLOW ANALYSIS

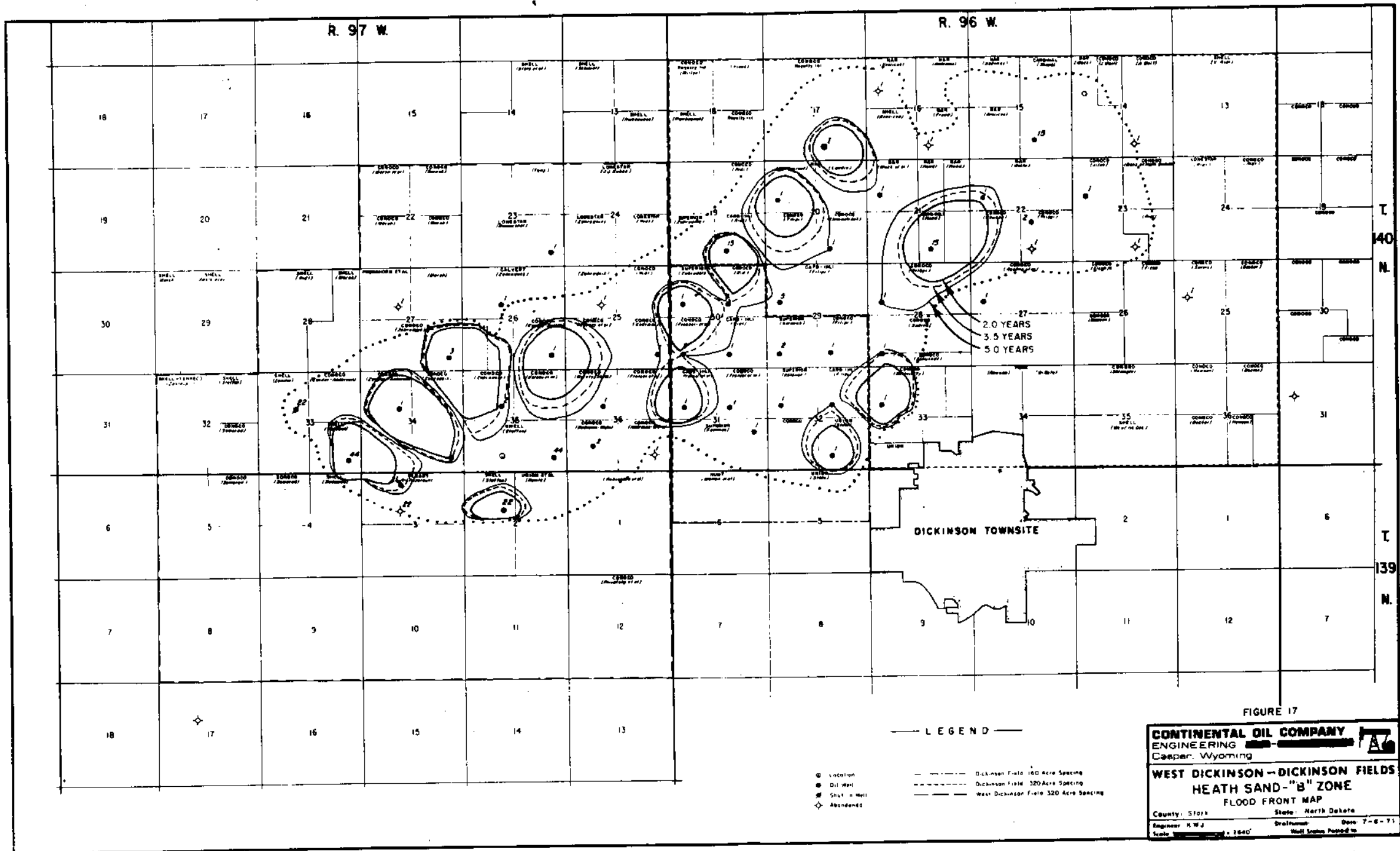
CORE NO. 7935-C

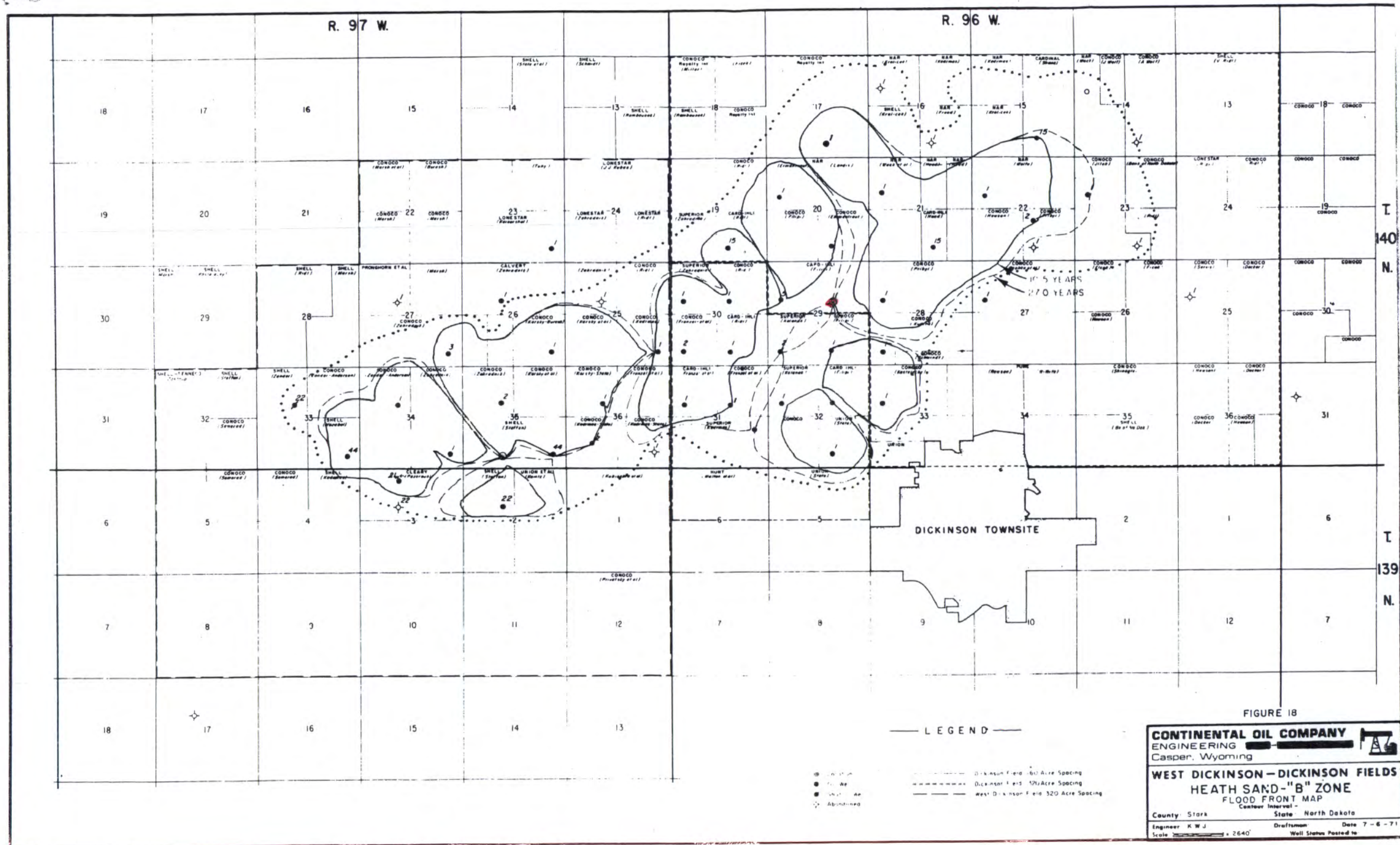
PROBLEM JAF











Case #1095

BEFORE THE INDUSTRIAL COMMISSION
OF THE STATE OF NORTH DAKOTA

IN THE MATTER OF THE APPLICATION)
OF CONTINENTAL OIL COMPANY FOR)
THE CREATION OF THE DICKINSON)
HEATH SAND UNIT; PROVIDING FOR)
THE UNITIZED MANAGEMENT, OPERA-)
TION AND FURTHER DEVELOPMENT OF)
THE DICKINSON HEATH SAND SOURCE)
OF SUPPLY OF OIL AND GAS LOCATED)
IN STARK COUNTY, NORTH DAKOTA,)
DEFINING THE UNIT AREA AND APPRO-)
VAL OF THE PLAN OF UNITIZATION)
TO SUCH UNIT AND UNIT AREA.)

A P P L I C A T I O N

COMES NOW the Applicant, Continental Oil Company, a corporation,
duly authorized to do business in the State of North Dakota, and res-
pectfully applies for an Order creating the Dickinson Heath Sand Unit;
authorizing and providing for the unitized management, operation and
further development of the Dickinson Heath Sand common source of supply
of oil and gas located in Stark County, North Dakota; defining the unit
area of said unit and prescribing the plan of unitization applicable
thereto.

I.

Applicant owns and operates wells in the common source of
supply of oil and gas (hereinafter called the "Unitized Formation:")
known as the Heath Sand which is found between the intervals of 7,822'
and 7,900' on the Schlumberger Laterolog in Continental Oil Company's
Frenzel Well No. 2 located in the SW $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 30, Township 140
North, Range 96 West, Stark County, North Dakota.

II.

Applicant is presently engaged in forming a unit to permit
pressure maintenance operations in the Dickinson and West Dickinson
Heath Pools, Stark County, North Dakota. The proposed unit area is
known as the Dickinson Heath Sand Unit area and is described by tracts
on Exhibit A of Exhibit I attached and is delineated on Exhibit B of

Exhibit I attached, which exhibits are made a part of this Application, lands within the proposed unit area are described as follows:

Township 139 North, Range 96 West
Section 5: N $\frac{1}{2}$

Township 139 North, Range 97 West
Section 1: N $\frac{1}{2}$
Section 2: All
Section 3: N $\frac{1}{2}$, SE $\frac{1}{4}$
Section 4: NE $\frac{1}{4}$

Township 140 North, Range 96 West
Section 14: All
Section 15: All
Section 16: S $\frac{1}{2}$, NW $\frac{1}{4}$
Section 17: S $\frac{1}{2}$, NE $\frac{1}{4}$
Section 19: S $\frac{1}{2}$, NE $\frac{1}{4}$
Section 20: All
Section 21: All
Section 22: All
Section 23: All
Section 27: W $\frac{1}{2}$
Section 28: All
Section 29: All
Section 30: All
Section 31: All
Section 32: All
Section 33: N $\frac{1}{2}$, N $\frac{1}{2}$ SW $\frac{1}{4}$

Township 140 North, Range 97 West
Section 22: SE $\frac{1}{4}$
Section 23: S $\frac{1}{2}$
Section 24: S $\frac{1}{2}$
Section 25: All
Section 26: All
Section 27: All
Section 33: All
Section 34: All
Section 35: All
Section 36: All,

and containing 16,400 acres, more or less.

III.

Applicant proposes the unit operation of the unitized formation pursuant to the Plan of Unitization which is attached hereto and marked "Exhibit I" and made a part hereof by reference.

IV.

The unitized formation underlies a certain unit area in Stark County, North Dakota, more particularly described in Exhibits A and B of Exhibit I attached hereto.

V.

The unitized management operation and further development of a common source of supply of oil and gas or a portion thereof is reasonably necessary in order to effectively carry on pressure maintenance or repressuring operations, cycling operations, water flooding operations, or any combination thereof, or any other form of joint effort calculated to substantially increase the ultimate recovery of oil and gas from the common source of supply.

VI.

One or more of such unitized methods of operation as applied to such common source of supply or portion thereof, are feasible, will prevent waste and will with reasonable probability result in the increased recovery of substantially more oil and gas from the common source of supply than would otherwise be recovered.

VII.

The estimated additional cost, if any, of conducting such operations will not exceed the value of the additional oil and gas so recovered.

VIII.

Such unitization and adoption of one or more of such unitized methods of operation is for the common good and will result in the general advantage of the owners of the oil and gas rights within the common source of supply, or portion thereof, directly affected.

IX.

The proposed plan of unitization designates this applicant as unit operator and is fair, reasonable and equitable in all respects.

X.

All engineering, geological and other technical exhibits to be used by applicant at the hearing on this application are being filed herewith.

XI.

The applicant will forthwith comply with all notice and service requirements of Section 38-08-09.5, North Dakota Century Code.

XII.

The plan of unitization contains fair, reasonable and equitable provisions relating to the efficient unitized management or control of the further development and operation of the unit area for the recovery of oil and gas. Unit operations are set up to be decided upon by an affirmative vote of the working interest owners owning 75% or more of the unit participation (Article 1.6.2 of Part III of Exhibit I). The unit operator may make such certain single expenditures up to \$15,000, sell surplus equipment if the current list price of new equipment similar thereto is less than \$3,000 (Article 1.4.4 and 1.4.5 of Part III of Exhibit I). The plan of unitization contains a provision (Article 3.2 of Part III of Exhibit I) that the unit operator is subject to removal by an affirmative vote of the working interest owners owning an excess of 50% of the Phase II voting interests, provided however if unit operator has 50% or more Phase II voting interests, unit operator may be removed by the affirmative vote of at least 75% of the Phase II voting interest remaining after excluding Phase II voting interest of unit operator.

XIII.

The formula for the apportionment and allocation of the unit production is fair, reasonable and equitable. The allocation formula is set forth in Article 3 of Part II of Exhibit I, and is based on oil and gas production and acre feet of reservoir volume as follows:

<u>Phase I</u> -	0.70	X	Each Tract's current rate of oil production from March 1, 1971 thru August 31, 1971
			<u>Total current rate of oil production from the Unitized Formation from March 1, 1971 thru August 31, 1971</u>

plus

	0.25	X	Each Tract's primary reserves on <u>September 1, 1971</u>
			Total primary reserves in the Unitized Formation on September 1, 1971
	plus		
	0.05	X	<u>Acre feet of each Tract</u>
			Total acre feet in the Unitized Formation
Phase II -	0.70	X	<u>Acre feet of each Tract</u>
			Total acre feet in the Unitized Formation
	plus		
	0.17	X	<u>Each Tract's ultimate primary oil production</u>
			Total ultimate primary oil production from the Unitized Formation
	plus		
	0.13	X	<u>Each Tract's cumulative oil production to</u> <u>August 31, 1971</u>
			Total cumulative oil production to August 31, 1971 from the Unitized Formation

XIV.

Fair, reasonable and equitable provisions are contained in the plan of unitization (Exhibit I) in regard to financing further development and operation of the unit area and in regard to the basis, terms, and conditions on which the cost and expense thereof shall be apportioned among and assessed against the tracts and interest made chargeable therewith. The plan of unitization includes detailed accounting procedure in a standard form designated 601 Ross-Martin Company (Exhibit E to Exhibit I), (COPAS-1968)

XV.

The plan of unitization provides a fair and equitable method for carrying or otherwise financing lessees who are unable to promptly meet their financial obligations, allowing a reasonable interest charge of 10% per annum.

XVI.

Article 7 of Part III of the plan of unitization (Exhibit I) contains fair, reasonable and equitable provisions for the procedure and basis upon which wells, equipment and other properties of the lessees within the unit area are to be taken over and used for unit

1
2 operations, including the method of arriving at compensation therefor,
3 or of otherwise proportionately equalizing or adjusting the investment
4 of the several lessees in the project as of the effective date of unit
5 operation.
6

7
8 XVII.

9 The plan of unitization contains fair, reasonable and equit-
10 able provisions for the time when, and conditions under which, and the
11 method by which, the unit shall or may be dissolved and its affairs
12 wound up. Such provisions are contained in Article 16 of Part II and
13 in Articles 15 and 16 of Part III of the plan of unitization (Exhibit
14 I).

15 WHEREFORE the applicant respectfully requests that this matter
16 be set for hearing, that notice thereof be given as required by law,
17 and that upon evidence produced at such hearing, this Commission enter
18 its order approving the plan of unitization for the Dickinson Heath
19 Sand Unit, creating the Dickinson Heath Sand Unit and prescribing a
20 plan of unitization applicable thereto.

21 Dated this 13th day of July, 1972.

22
23 Respectfully submitted,

24 CONTINENTAL OIL COMPANY

25 By FLECK, MATHER, STRUTZ & MAYER
26 Suite 200, Professional Bldg.
27 Bismarck, North Dakota 58501
28 Attorneys for Continental Oil
29 Company

30
31 By: 

32 Ernest R. Fleck
33
34
35
36

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTOffice
MONTANASerial No.
072791Fill in on typewriter
or print plainly in ink
and sign in ink.OFFER TO LEASE AND LEASE FOR OIL AND GAS
NONCOMPETITIVE ACQUIRED LANDS LEASE

The undersigned hereby offers to lease all or any of the lands described in item 2 that are available for lease, pursuant and subject to the terms and provisions of the act of August 7, 1947 (61 Stat. 913; 30 U.S.C. secs. 351-359), hereinafter referred to as the act, and to all reasonable regulations of the Secretary of the Interior now or hereafter in force, when not inconsistent with any express and specific provisions herein, which are made a part hereof.

1. **CONFIDENTIAL OIL COMPANY**
(First Name, Middle Initial, Last Name)**P. O. BOX 2543**

(Number and Street)

BILLINGS, MONTANA 59103

(City and State)

Please notify the
Bureau office of any
change of address.2. Land requested: State **North Dakota** County **Stark** T. **14N** : R. **96W** : Meridian

(SEE ATTACHED RIDER)

U.S. interest if
less than 100 percentTotal area **91.43** acres

3. Land included in lease: State _____ County _____ T. _____ : R. _____ : Meridian

This lease embraces the land
described in item 2.U.S. interest if
less than 100 percentTotal area **91.34** acres

Net area for rental _____ acres

Rental retained \$ **46.00**

(Offeror does not fill in this block)

4. Amount remitted: Filing fee \$10, Rental \$ **46.00**, Total \$ **56.00**

5. Undersigned certifies as follows:

(a) Offeror is a citizen of the United States. Native born _____ Naturalized _____

Corporation or other legal entity (specify what kind): **A Delaware corporation**
Qualifications filed in **GLO File B.L.M. 066100, Washington, D. C.**

(b) Agency having administrative control over surface use of land, and unit or project of which land is a part are _____

(c) Offeror's interests, direct and indirect, in acquired lands do not exceed 200,000 acres in oil and gas options or 246,080 chargeable acres in options, offers to lease and leases in the same State, or 300,000 chargeable acres in leases, offers to lease and options in each leasing district in Alaska.

(d) Offeror accepts as a part of this lease, to the extent applicable, the stipulations provided for in 43 CFR 191.6.

(e) Offeror is 21 years of age or over (or if a corporation or other legal entity, is duly qualified to receive a lease as shown by statements made or referred to herein).

(f) Offeror has described all lands as provided for in 43 CFR 200.5(a).

6. Offeror ☒ is ☐ is not the sole party in interest in this offer and lease, if issued. (If not the sole party in interest, statements should be filed as prescribed in Item 6 of the Special Instructions.)

7. Offeror's signature to this offer shall also constitute offeror's signature to, and acceptance of, this lease and any amendment thereto that may cover any land described in this offer open to lease application at the time the offer was filed but omitted from this lease for any reason, or signature to, or acceptance of, any separate lease for such land. The offeror further agrees that (a) this offer cannot be withdrawn, either in whole or in part, unless the withdrawal is received by the land office before this lease, an amendment to this lease, or a separate lease, whichever covers the land described in the withdrawal, has been signed in behalf of the United States, and (b) this offer and lease shall apply only to lands not within a known geologic structure of a producing oil or gas field at the time the offer is filed.

8. If this lease form does not contain all of the terms and conditions of the lease form in effect at the date of filing, the offeror further agrees to be bound by the terms and conditions contained in that form.

9. It is hereby certified that the statements made herein are complete and correct to the best of offeror's knowledge and belief and are made in good faith.

Offeror duly executed this instrument this **1st** day of **February**, 19**66**

(Lessee signature)

CONFIDENTIAL OIL COMPANY

(Lessee signature)

By *[Signature]*

(Attorney-in-fact)

This lease for the lands described in item 3 above is hereby issued, subject to the provisions of the offer and on the reverse side hereof.

THE UNITED STATES OF AMERICA

By *[Signature]*

(Signing officer)

Effective date of lease **AUG 1 1966**

(Title)

(Date)

THIS OFFER MAY BE REJECTED AND RETURNED TO THE OFFEROR AND WILL AFFORD THE OFFEROR NO PRIORITY IF IT IS NOT PROPERLY FILLED IN AND EXECUTED OR IF IT IS NOT ACCOMPANIED BY THE REQUIRED DOCUMENTS OR PAYMENTS. SEE ITEM 9 OF GENERAL INSTRUCTIONS.

18 U.S.C. sec. 1001 makes it a crime for any person knowingly and willfully to make to any Department or Agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

This form may be reproduced provided that the copies are exact reproductions on one sheet of both sides of this official form, in accordance with the provisions of 43 CFR 200.8(a).

Stark County, North Dakota
Township 140 North, Range 96 West

The North 33 feet of the West 330 feet of the E $\frac{1}{2}$ of Section 25, and the North 75 feet of the East 1441.27 feet of the West 1771.27 feet of E $\frac{1}{2}$ of Section 25, containing 2.73 acres, more or less.

✓ The West 563 feet of the North 553 feet of the W $\frac{1}{2}$ of Section 25, containing 7.15 acres more or less.

✓ The South 350 feet of the North 1903 feet of the West 453 feet of the W $\frac{1}{2}$ of Section 25, containing 3.64 acres, more or less.

The tract of land situated in the S $\frac{1}{2}$ of Section 24, more particularly described as follows: Beginning at a point on the South line of said Section 24, said point being 942.40 feet East of the Southwest corner thereof; thence North for a distance of 50.00 feet; thence along a curve to the left having a radius of 470.87 feet, the initial tangent of which bears East, for an arc length of 484.88 feet; thence North 59°00'00" West for a distance of 50.00 feet; thence North 31°00'00" East for a distance of 32.70 feet; thence North for a distance of 987.86 feet; thence East for a distance of 330.00 feet; thence South for a distance of 768.91 feet; thence along a curve to the right having a radius of 524.41 feet, the initial tangent of which bears North 78°30'12" East, for an arc length of 196.75 feet; thence South 80°00'00" East for a distance of 282.95 feet; thence along a curve to the right having a radius of 1532.39 feet, for an arc length of 561.65 feet; thence South 59°00'00" East for a distance of 127.70 feet; thence along a curve to the left having a radius of 854.93 feet for an arc length of 224.03 feet; thence North for a distance of 1495.69 feet; thence East for a distance of 1650.00 feet; thence South for a distance of 1650.00 feet to the South line of said Section 24; thence West along the South line of said Section 24 for a distance of 1814.49 feet; thence along a curve to the right having a radius of 1054.93 feet, the initial tangent of which bears North 67°43'16" West for an arc length of 160.57 feet; thence North 59°00'00" West for a distance of 127.70 feet; thence along a curve to the left having a radius of 1332.39 feet, for an arc length of 488.35 feet; thence North 80°00'00" West for a distance of 282.95 feet; thence along a curve to the left having a radius of 324.41 feet for an arc length of 390.68 feet; thence South 31°00'00" West for a distance of 3.60 feet; thence North 59°00'00" West for a distance of 50.00 feet; thence along a curve to the right having a radius of 570.87 feet, the initial tangent of which bears South 31°00'00" West for an arc length of 347.90 feet to the South line of said Section 24; thence West along the South line of said Section 24 for a distance of 232.94 feet to the point of beginning, containing 77.96 acres, more or less. 77.6¹² (1170297) *F. W. W.*

152

170-297

EQUAL OPPORTUNITY

(a) Clause --, regarding "Equal Opportunity" in the Form to which this is attached, is amended by deleting references to the President's Committee on Equal Employment Opportunity, Executive Order No. 10925 of March 6, 1961, as amended, and section 303 of Executive Order No. 10925 of March 6, 1961, as amended; and substituting therefor the Secretary of Labor, Executive Order No. 11246 of September 24, 1965, and section 204 of Executive Order No. 11246 of September 24, 1965, respectively.

(b) In accordance with regulations of the Secretary of Labor, the rules, regulations, orders, instructions, designations, and other directives referred to in section 403 (b) of Executive Order No. 11246, remain in effect and, where applicable, shall be observed in the performance of this contract until revoked or superseded by appropriate authority.

(c) The Equal Employment Opportunity representation in the Form to which this is attached is amended to insert, after the reference to "Executive Order 10925" the following: "or the clause contained in section 201 of Executive Order No. 11114".

1

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

MONTANA 072791(ND) Acq.

STIPULATION FOR LANDS UNDER JURISDICTION OF DEPARTMENT OF AGRICULTURE *

The lands embraced in this lease or permit being under the jurisdiction of the Secretary of Agriculture, the lessee or permittee hereby agrees:

(1) To conduct all operations authorized by this lease or permit with due regard for good land management, not to cut or destroy timber without first obtaining permission from the authorized representative of the Secretary of Agriculture, and to pay for all such timber cut or destroyed at the rates prescribed by such representative; to avoid unnecessary damage to improvements, timber, crops, or other cover, unless otherwise authorized by the Secretary of Agriculture, not to drill any well, carry on operations, make excavations, construct tunnels, drill, or otherwise disturb the surface of the lands within 200 feet of any building standing on the lands and whenever required, in writing, by the authorized representative of the Secretary of Agriculture to fence or fill all sump holes, ditches, and other excavations, remove or cover all debris, and so far as reasonably possible, restore the surface of the lands to their former condition, including the removal of structures as and if required, and when required by such representative to bury all pipelines below plow depth.

(2) To do all in his power to prevent and suppress forest, brush, or grass fires on the lands and in their vicinity, and to require his employees, contractors, subcontractors, and employees of contractors or subcontractors to do likewise. Unless prevented by circumstances over which he has no control, the lessee or permittee shall place his employees, contractors, subcontractors, and employees of contractors and subcontractors employed on the lands at the disposal of any authorized officer of the Department of Agriculture for the purpose of fighting forest, brush, or grass fires, on or originating on the lands or on adjacent areas or caused by the negligence of the lessee or permittee or his employees, contractors, subcontractors and employees of contractors and subcontractors, with the understanding that payment for such services shall be made at rates to be determined by the authorized representative of the Secretary of

Agriculture, which rates shall not be less than the current rates of pay prevailing in the vicinity for services of a similar character: *Provided*, that if the lessee or permittee, his employees, contractors, subcontractors, or employees of contractors or subcontractors, caused or could have prevented the origin or spread of said fire or fires, no payment shall be made for services so rendered.

During periods of serious fire danger to forest, brush, or grass, as may be specified by the authorized representative of the Secretary of Agriculture, the lessee or permittee shall prohibit smoking and the building of camp and lunch fires by his employees, contractors, subcontractors, and employees of contractors or subcontractors within the area involved except at established camps, and shall enforce this prohibition by all means within his power: *Provided*, that the authorized representative of the Secretary of Agriculture may designate safe places where, after all inflammable material has been cleared away, campfires may be built for the purpose of heating lunches and where, at the option of the lessee or permittee, smoking may be permitted.

The lessee or permittee shall not burn rubbish, trash, or other inflammable materials *except* with the consent of the authorized representative of the Secretary of Agriculture and shall not use explosives in such a manner as to scatter inflammable materials on the surface of the lands during the forest, brush, or grass fire season, *except* as authorized to do so or on areas approved by such representative.

The lessee or permittee shall build or construct such fire lines or do such clearing on the lands as the authorized representative of the Secretary of Agriculture decides is essential for forest, brush, and grass fire prevention which is or may be necessitated by the

* This form of stipulation may be used in connection with leases and permits issued under the Acts of February 25, 1920, as amended (30 U.S.C. 181 *et seq.*); August 7, 1947 (30 U.S.C. 351 *et seq.*); February 7, 1927, as amended (30 U.S.C. 281 *et seq.*); April 17, 1926, as amended (30 U.S.C. 271 *et seq.*); October 20, 1914, as

amended (48 U.S.C. 432 *et seq.*); June 28, 1944 (58 Stat 463 *et seq.*); September 1, 1949 (30 U.S.C. 192c); June 30, 1950 (16 U.S.C. 508b); or under the authority of any of the Acts cited in Section 402 of the President's Reorganization Plan No. 3 of 1946 (5 U.S.C. 133y-16, Note).

170-97

15x
Form MSO 3120-14
(formerly MSO-F-218)
(January 1966)

MONTANA 072791(ND) Acq.

STIPULATION FOR LANDS UNDER THE JURISDICTION
OF DEPARTMENT OF AGRICULTURE

The lands embraced in this lease being under the jurisdiction of the Secretary of Agriculture, the lessee hereby agrees:

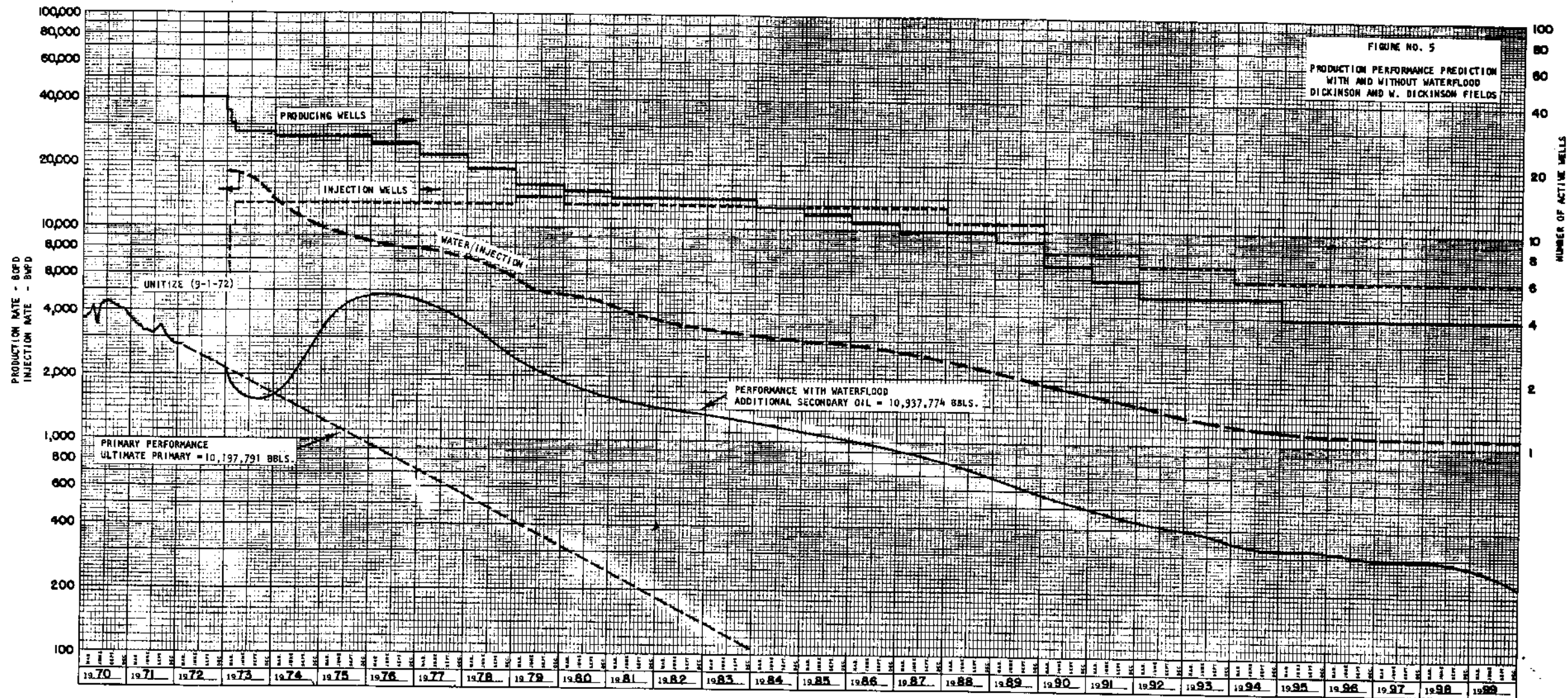
1. The local district ranger shall be informed and his approval of plans obtained in advance of any field operations, including seismic work, drilling, road construction, or other field operations, that involve these lands.
2. Drilling for seismic shotholes will not be done within 300 feet of any spring or water well existing prior to the drilling operation.
3. No operations of any kind - seismic, road construction, drilling, etc., will be allowed on the lease area. This is an occupied Job Corps Center, and any surface operations will seriously interfere with its functioning.

Power of Attorney for the undersigned is filed in Montana 065500 and is still in full force and effect.

July 21, 1966
Date

CONTINENTAL OIL COMPANY
Lessee

By Walter M. Dawson
Attorney in Fact *WMD*



CONOCO - ZAHRADNIK NO. 3 DST 10/4/1967

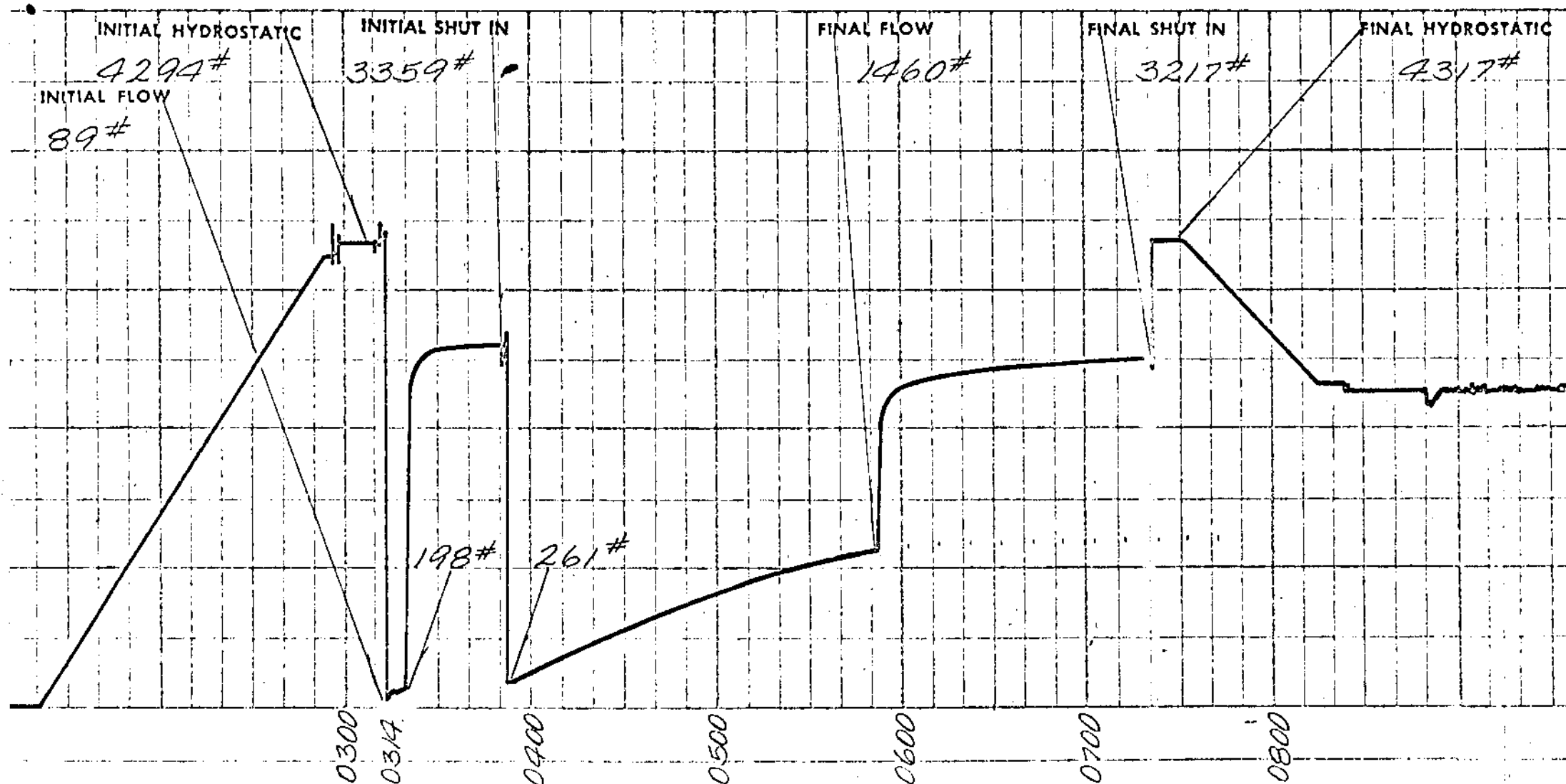
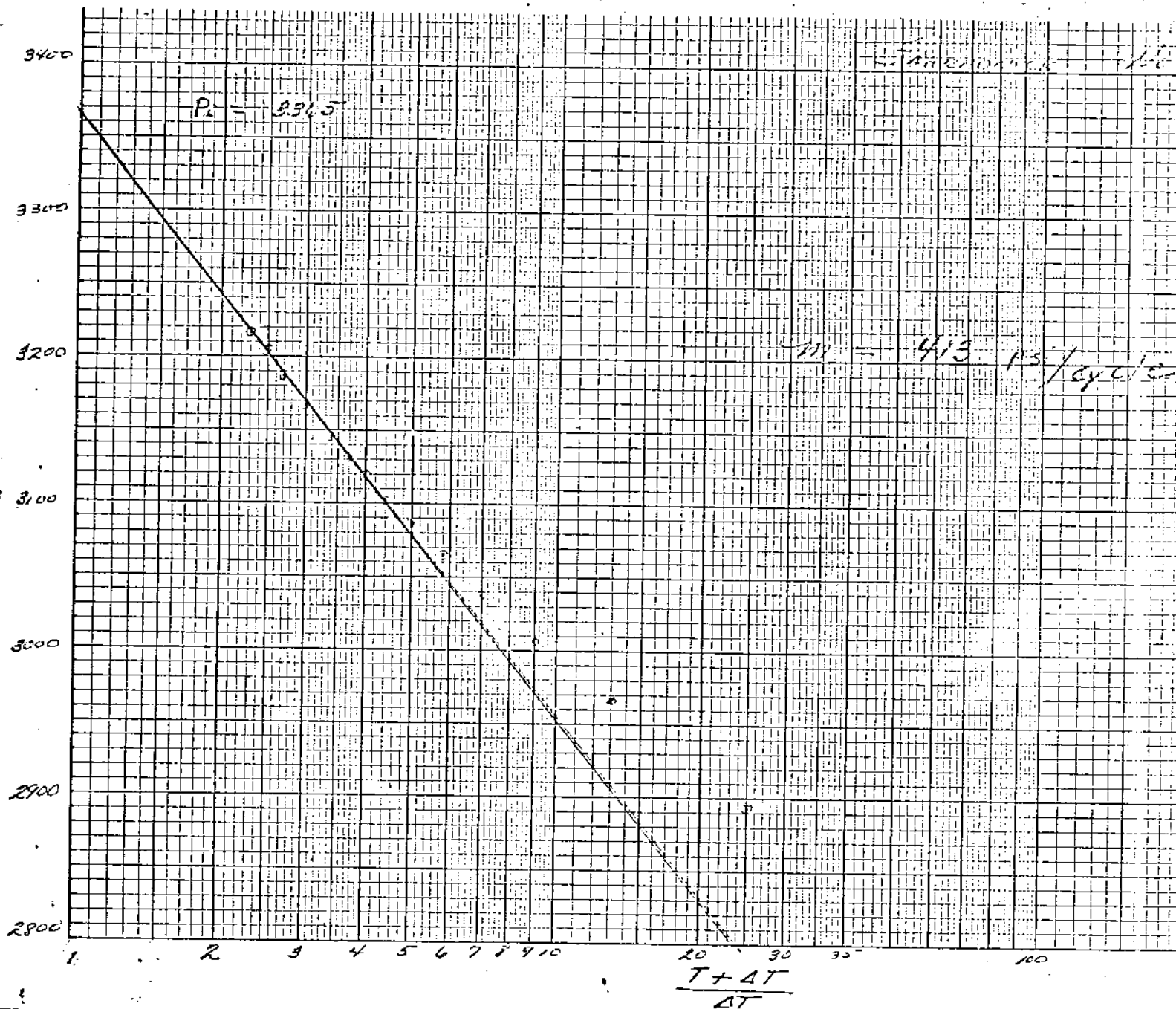


EXHIBIT NO. 8

EXTRAPOLATION OF FINAL SHOT IN ZAHRADNIK NO.3 DST



GLENDIVE,
MONTANA

Sun Oilfield Service

PHONE
365-5312

SUB-SURFACE SURVEY

Company Continental Oil Company Field W. Dickinson Lease and Well Zehradnik # 3
County Stark State North Dakota Date 10-21-67

T. D. _____ Formation _____

Elevation 12' KB Casing _____

Perforation 7937 Tubing _____

Datum Point 7937

<u>16 1/2 HOUR BUILDUP</u>	
<u>TIME (HOURS)</u>	<u>DEPTH (FEET)</u>
0	3124
1	3154
2	3170
3	3186
4	3200
5	3209
6	3213
7	3216
8	3219
9	3223
10	3223
11	3226
16 1/2	3226

10/4/67 DST pressure 3365
10/21/67 Buildup pressure 3242
123 ps
pressure
loss

<u>16 1/2 HOUR STATIC GRADIENT</u>		
<u>DEPTH (FEET)</u>	<u>PRESSURE (PSI)</u>	<u>GRADIENT (#/100')</u>
Top	0	
3000	967	32.2
5000	1879	45.6
7000	2813	46.6
7500	3055	48.4
7900	3226	42.7

Remarks:

1. Bomb on bottom at 1:15 PM, 10-20-67.
2. Bomb off bottom at 5:45 AM, 10-21-67.
3. Temperature at 7900' - 200°F.
4. Amerada type instrument # 5432N - 6500 psi.
Re-calibrated 8-4-67.

$$(37)(.427) = 16 \text{ ps}$$

DATUM 7937'
BOMB AT 7900'

$$\begin{array}{r} 3226 \\ + 16 \\ \hline 3242 \end{array}$$

GLENDIVE,
MONTANA

Sun Oilfield Service

PHONE
345-5312

SUB-SURFACE SURVEY

Company Continental Oil Company Field W. Dickinson Lease and Well Karsky State # 1
County Stark State North Dakota Date 2-4-68

AC T. D. 7927 Formation HEATH
Elevation 12' EB Casing 5 1/2"
Perforation 7910-19, 7930-34 Tubing 2 7/8"

Datum Point 7000'

14 1/2 HOUR BUILDUP PRESSURE SURVEY

TIME (HOURS)	PRESSURE (PSI)
0	943
1	1000
2	1033
3	1054
4	1071
5	1079
6	1084
7	1090
8	1092
9	1095
14 1/2	1095

7920' perfs
7000' BOMB
920'

$$(920')(.31 \text{ \#/FT}) = 285 \text{ \#}$$

1095
+ 285

14 1/2 HOUR STATIC GRADIENT

DEPTH (FEET)	PRESSURE (PSI)
Top	14
3000	92
5000	416
6000	767
6500	933
7000	1095

RESERVOIR PRESSURE = 1380 PSI
GRADIENT ($\Delta P / \Delta Z$)

21.2
35.1
34.2
31.4

Remarks:

1. Bond on bottom & well shut in at 3:30 PM, 2-3-68.
2. Bond off bottom at 6:00 AM, 2-4-68.
3. Temperature at 7000' - 200°F.
4. Amarede type instrument # 64037 - 5450 psi.

SI TIME (HOURS)

