

CASE 2114: Application of WESTERN
NATURAL GAS CO. for 320-acre non-
standard gas proration unit in the
Jalmat Gas Pool.

Case No.

2114

Application, Transcript,
Small Exhibits, Etc.

DRAFT

RSM/esr
November 4

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 2114
Order No. R-1816

APPLICATION OF WESTERN NATURAL
GAS COMPANY FOR A 320-ACRE NON-
STANDARD GAS PRORATION UNIT IN
THE JALMAT GAS POOL, LEA COUNTY,
NEW MEXICO, AND FOR AN UNORTHODOX
GAS WELL LOCATION.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on
November 2, 1960, at Santa Fe, New Mexico, before Elvis A. Utz,
Examiner duly appointed by the Oil Conservation Commission of New
Mexico, hereinafter referred to as the "Commission," in accordance
with Rule 1214 of the Commission Rules and Regulations.

NOW, on this day of November, 1960, the Commission,
a quorum being present, having considered the application, the
evidence adduced, and the recommendations of the Examiner, Elvis A.
Utz, 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 the applicant, Western Natural Gas Company, is the
owner and operator of the E/2 of Section 24, Township 22 South,
Range 36 East, NMPM, Lea County, New Mexico, which applicant pro-
poses be established as a 320-acre non-standard gas proration
unit in the Jalmat Gas Pool.
- (3) That the applicant is the operator of a well to be
recompleted as a gas well in the Jalmat Gas Pool, located 330 feet
from the North line and 330 feet from the East line of said Sec-
tion 24, to which well the proposed 320-acre non-standard gas
proration unit would be dedicated.

(4) That the proposed 320-acre proration unit can reasonably be presumed to be productive of gas from the Jalmat Gas Pool.

(5) That establishment of the above-described non-standard gas proration unit and approval of the proposed unorthodox gas well location will neither cause waste nor impair correlative rights.

IT IS THEREFORE ORDERED:

(1) That a 320-acre non-standard gas proration unit in the Jalmat Gas Pool consisting of the E/2 of Section 24, Township 22 South, Range 36 East, NMPM, Lea County, New Mexico, be and the same is hereby established. Said unit is to be dedicated to a gas well located at a point 330 feet from the North line and 330 feet from the East line of said Section 24, which location is hereby approved.

(2) That the above-described gas well be and the same is hereby assigned an acreage factor for allowable purposes in the proportion that the acreage in the non-standard gas proration unit bears to the acreage in a standard gas proration unit in the Jalmat Gas Pool, subject to the provisions of the Special Rules and Regulations for said pool.

(3) That the effective date of this order shall be December 1, 1960, or when

~~PROVIDED HOWEVER, That~~ the applicant shall have complied with the provisions of Rule 8(B) of Order No. R-1670, ^{whenever date is later,} ~~prior to~~ ~~the effective date of this order.~~

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122

Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Undesignated Yates Formation Yates County Lea
 Initial X Annual _____ Special _____ Date of Test 10-19-60
 Company Western Natural Gas Company Lease State McDonald Ac/2 Well No. 21
 Unit A Sec. 24 Twp. 22-S Rge. 36-E Purchaser None
 Casing 4 1/2 Wt. 9.5 I.D. _____ Set at 3474 Perf. 2720 To 3290
 Tubing 2 3/8 Wt. 4.7 I.D. _____ Set at 2675 Perf. _____ To _____
 Gas Pay: From 2720 To 3290 L 2675 xG * 0.650 -GL 1739 Bar. Press. 13.2
 Producing Thru: Casing _____ Tubing X Type Well Single
 Re-completion _____ Single-Bradenhead-G. G. or G.O. Dual
 Date of ~~Completion~~ 10-2-60 Packer 2643 Reservoir Temp. _____

OBSERVED DATA

Tested Through (Prover) (Choke) (Meter) Type Taps _____

No.	Flow Data					Tubing Data		Casing Data		Duration of Flow Hr.
	(Prover) (kms) Size	(Choke) (Orifice) Size	Press. psig	Diff. h _w	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.	
SI						1269		Pkr		72 SI
1.	2" x 1/8"		961	-	64	961		"		3
2.	2" x 3/16		881	-	65	881		"		3
3.		2 x 6 x 1/4	696	-	60	696		"		3
4.		2 x 6 x 5/16	511	-	61	511		"		3
5.										

FLOW CALCULATIONS

No.	Coefficient (24-Hour)	$\sqrt{h_w p_f}$	Pressure psia	Flow Temp. Factor Ft	Gravity Factor * F _g	Compress. Factor F _{pv}	Rate of Flow Q-MCFPD @ 15.025 psia
1.	0.3418	-	974.2	0.9962	0.9608	1.111	354.1
2.	0.7851	-	894.2	0.9952	0.9608	1.093	733.7
3.	1.4382	-	709.2	1.0000	0.9608	1.078	1056.4
4.	2.3674	-	524.2	0.9990	0.9608	1.055	1256.7
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio not measured cf/bbl.
 Gravity of Liquid Hydrocarbons _____ deg.
 P_c 9.936 (1-e⁻⁸) 0.113
 Specific Gravity Separator Gas _____
 Specific Gravity Flowing Fluid _____
 P_c 1282.2 P_c 1644.0

No.	P _t (psia)	P _t ²	F _c Q	(F _c Q) ²	(F _c Q) ² (1-e ⁻⁸)	P _w ²	P _c ² -P _w ²	Cal. P _w	P _w /P _c
1.	974.2	949.1	3.518	12.376	1.4	950.5	693.5	974.9	0.7603
2.	894.2	799.6	7.290	53.144	6.0	805.6	838.4	897.5	0.6999
3.	709.2	502.9	10.496	110.166	12.4	515.3	1128.7	717.8	0.5598
4.	524.2	274.8	12.486	155.900	17.6	292.4	1351.6	540.7	0.4217
5.									

Absolute Potential: 1550 MCFPD; n 1.088
 COMPANY WESTERN NATURAL GAS COMPANY
 ADDRESS 823 Midland Tower, Midland, Texas
 AGENT and TITLE W. B. Scott, Petroleum Engineer
 WITNESSED J. B. Murray
 COMPANY El Paso Natural Gas Company

REMARKS

*NOTE: Gas Gravity was assumed.

INSTRUCTIONS

This form is to be used for reporting multi-point back pressure tests on gas wells in the State, except those on which special orders are applicable. Three copies of this form and the back pressure curve shall be filed with the Commission at Box 871, Santa Fe.

The log log paper used for plotting the back pressure curve shall be of at least three inch cycles.

NOMENCLATURE

Q = Actual rate of flow at end of flow period at W. H. working pressure (P_w).
MCF/da. @ 15.025 psia and 60° F.

P_c = 72 hour wellhead shut-in casing (or tubing) pressure whichever is greater.
psia

P_w = Static wellhead working pressure as determined at the end of flow period.
(Casing if flowing thru tubing, tubing if flowing thru casing.) psia

P_t = Flowing wellhead pressure (tubing if flowing through tubing, casing if flowing through casing.) psia

P_f = Meter pressure, psia.

h_w = Differential meter pressure, inches water.

F_g = Gravity correction factor.

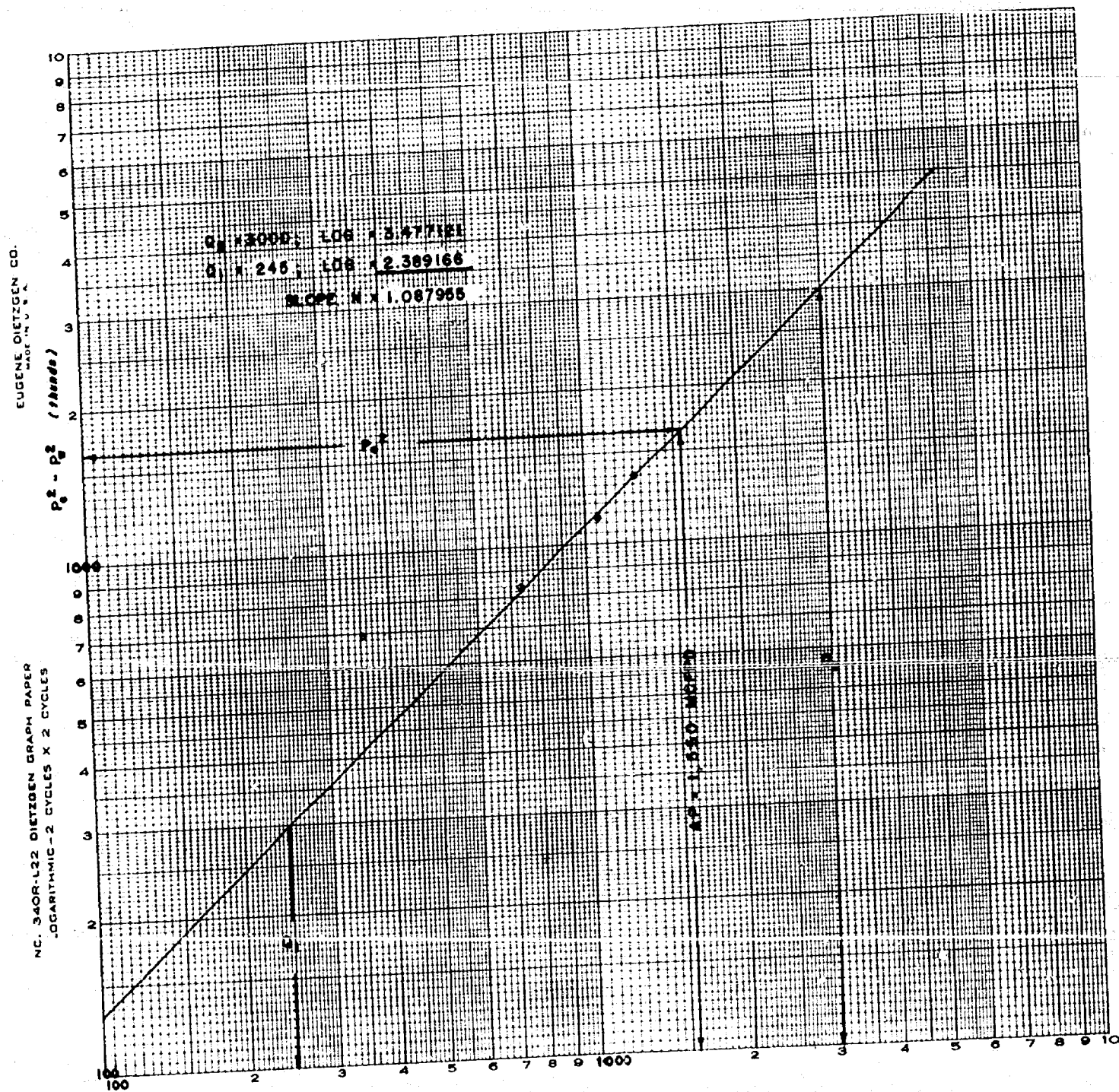
F_t = Flowing temperature correction factor.

F_{pv} = Supercompressibility factor.

n = Slope of back pressure curve.

Note: If P_w cannot be taken because of manner of completion or condition of well, then P_w must be calculated by adding the pressure drop due to friction within the flow string to P_t .

WESTERN NATURAL GAS COMPANY
 STATE-MCDONALD A/C 2 NO.21
 UNIT A, SEC 24, T-22-S, R-36-E
 OCTOBER 19, 1960



The Ohio Oil Co.

P. O. BOX 552

MIDLAND, TEXAS

October 21, 1960

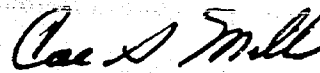
Mr. R. H. McKoy
Western Natural Gas Company
823 Midland Tower Building
Midland, Texas

Dear Sir:

We have received a copy of your application to the New Mexico Oil Conservation Commission for a 320-acre non-standard gas proration unit and unorthodox location for your State McDonald A/C No. 21 well in Section 24 of Township-22-South, Range-36-East. You are asking that said well be designated as a Jalmat gas well.

The Ohio Oil Company has reviewed your application and has no objection.

Yours very truly,



Coe S. Mills
District Manager

MR

W A I V E R

WE HAVE BEEN advised of an application of the Western Natural Gas Company for a 320-acre non-standard gas proration unit, consisting of the E/2 of Section 24, T-22-S, R-36-E, Lea County, New Mexico, and an unorthodox location for the State McDonald Ac 21 well, an undesignated Yates well, 330' FN and E lines of the Section. This is to indicate that we have no objection to this application

Company: Humble Oil & Refining Co.

Date: Oct. 23, 1960

for By: H. P. Hensley

AGENDA: EXAMINER HEARING, WEDNESDAY, NOVEMBER 2, 1960

Oil Conservation Commission - 9 a.m., Library Hall, State Capitol, Santa Fe, New Mexico

The following cases will be heard before Elvis A. Utz, Examiner, or Oliver E. Payne, Attorney, as alternate examiner:

CASE 2111: Application of Gulf Oil Corporation for a waterflood project. Applicant, in the above-styled cause, seeks permission to institute a waterflood project in the Lumont and South Eunice Pools by the injection of water into the Queen formation through six wells located in Sections 27 and 34, Township 21 South, Range 36 East, Lea County, New Mexico.

CASE 2112: Application of Potash Company of America for an extension of the Potash-oil area as set forth in Order No. R-111-A. Applicant, in the above-styled cause, seeks an extension of the potash-oil area to include the following acreage:

Section 14: S/2 NW/4, SW/4, W/2 SE/4, NE/4 SE/4, SW/4 NE/4

Section 15: E/2 SE/4

Section 22: NE/4 NE/4

Section 23: NW/4

all in Township 20 South, Range 29 East, Eddy County, New Mexico.

CASE 2113: Application of Shell Oil Company for an amendment of Order No. R-1101-A. Applicant, in the above-styled cause, seeks an amendment of Order No. R-1101-A, to include its Linam Lease in the commingling authorization granted in said order. Said Linam Lease consists of the NW/4 NE/4 and NE/4 NW/4 of Section 3, Township 20 South, Range 35 East, Pearl-Queen Pool, Lea County, New Mexico.

CASE 2114: Application of Western Natural Gas Company for a 320-acre non-standard gas proration unit and for an unorthodox gas well location. Applicant, in the above-styled cause, seeks an order establishing a 320-acre non-standard gas proration unit in the Jalmat Gas Pool consisting of the E/2 of Section 24, Township 22 South, Range 36 East, Lea County, New Mexico. Applicant further proposes to dedicate said unit to a well located on an unorthodox location at a point 330 feet from the North line and 330 feet from the East line of said Section 24.

CASE 2115: Application of James G. Brown & Associates for permission to commingle the production from two separate leases. Applicant, in the above-styled cause, seeks an order permitting it to commingle the Saunders-Permo Pennsylvanian Pool production from the following portions of the following State leases:

L-8334, NW/4 SE/4 of Section 9

L-7353, SE/4 SE/4 of Section 9

Township 14 South, Range 33 East, Lea County, New Mexico.

CASE 2116: Application of Westates Petroleum Company for an oil-oil dual completion. Applicant, in the above-styled cause, seeks an order authorizing the dual completion of its Carlson L 26, Well No. 7, located in unit J, Section 26, Township 25 South, Range 37 East, Lea County, New Mexico, in such a manner as to permit the production of oil from an undersignated Paddock Pool and the production of oil from the Justis-Blinbry Pool through parallel strings of 2 3/8-inch tubing.

DOCKET NO. 32-60

-2-

CASE 2117:

Application of Rice Engineering & Operating, Inc., for a salt water disposal well at an unorthodox location. Applicant, in the above-styled cause, seeks an order approving the disposal of produced salt water into the San Andres formation, Monument Pool, Lea County, New Mexico, through a well to be drilled 1485 feet from the South and West lines of Section 33, Township 19 South, Range 37 East.

Case 2114

Western Natural Gas Company

1960 OCT 13 PM 1:14 823 MIDLAND TOWER BLDG.

Midland, Texas

October 11, 1960

Re: Application for 320 Acre
Non-Standard Gas Proration
Unit and Unorthodox Location
for the State McDonald Ac #21
well, Yates (Undesignated),
comprising the E/2 of Sec. 24
located 330' from the North
line and 330' from the East
line, T-22-S, R-36-E

Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Gentlemen:

Western Natural Gas Company makes application for Administrative
approval for the following purposes:

- A. To authorize for its State McDonald Ac #21 well,
Yates (Undesignated), a 320 acre non-standard
gas proration unit comprising the E/2 of Sec. 24,
T-22-S, R-36-E, Lea County, New Mexico.
- B. To authorize an unorthodox gas well location for
the said State McDonald Ac #21 well located 330'
from the North line and 330' from the East line
of Section 24, T-22-S, R-36-E, Lea County, New
Mexico, and in support thereof states the follow-
ing facts:
 1. Western Natural Gas Company is the
lessee and operator of a gas lease
known as its State McDonald Ac #21,
Lea County, New Mexico, as shown on
the enclosed plat.

*Doyle
Miles
10-19-60*

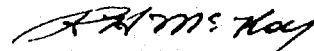
2. Western Natural Gas Company proposes that the above described acreage be established as a non-standard 320-acre gas proration unit in exception to Rule 5 (a) of Order R-520.
3. The State McDonald Ac #21, located 330' from the North line and 330' from the East line of Section 24, T-22-S, R-36-E, Lea County, New Mexico, was originally drilled and completed in the Arrowhead Pool by the Ohio Oil Company on March 31, 1941. This well was purchased by Western Natural Gas Company, who owns the gas rights under Section 24, and was plugged back and recompleted in the Yates formation on September 30, 1960. The applicant proposes to use this well as the unit well.
4. The proposed non-standard gas proration unit will meet the requirements of Rule 5 (b) of the Oil Conservation Commission Order R-520 as follows:
 - (a) Contiguous quarter-quarter sections will comprise the unit.
 - (b) The proposed unit lies wholly within a single governmental section.
 - (c) The entire non-standard gas proration unit may reasonably be assumed to be productive of gas.
 - (d) The length or width of the non-standard gas proration unit does not exceed 5280 feet.
 - (e) Western Natural Gas Company is the lessee and operator of the E/2 of Section 24, T-22-S, R-36-E. The proposed unit is shown on the enclosed plat, and by copy of this letter of application, all operators owning interests in this section, and all operators within 1500' of the proposed unit well are notified by certified mail of the intent of Western Natural Gas Company to form the proposed non-standard gas proration unit.

5. The approval of this application will, in the opinion of the applicant, prevent waste, protect correlative rights and serve the best interest of conservation.

In view of the existence of the facts herein stated, and compliance with the provisions of Rule 5 (b) of the Oil Conservation Commission's Order No. R-520, Western Natural Gas Company requests that the Secretary of the Commission approve the above described non-standard gas proration unit and unorthodox location.

Respectfully submitted,

WESTERN NATURAL GAS COMPANY



R. H. McKoy
Division Superintendent

RHM:jh

Certified Mail - Return receipt requested

cc: Paul Wright

Gulf Oil Corporation
P. O. Box 669,
Roswell, New Mexico

Oil Conservation Commission
P. O. Box 2045,
Hobbs, New Mexico

Ohio Oil Company
P. O. Box 2107,
Hobbs, New Mexico

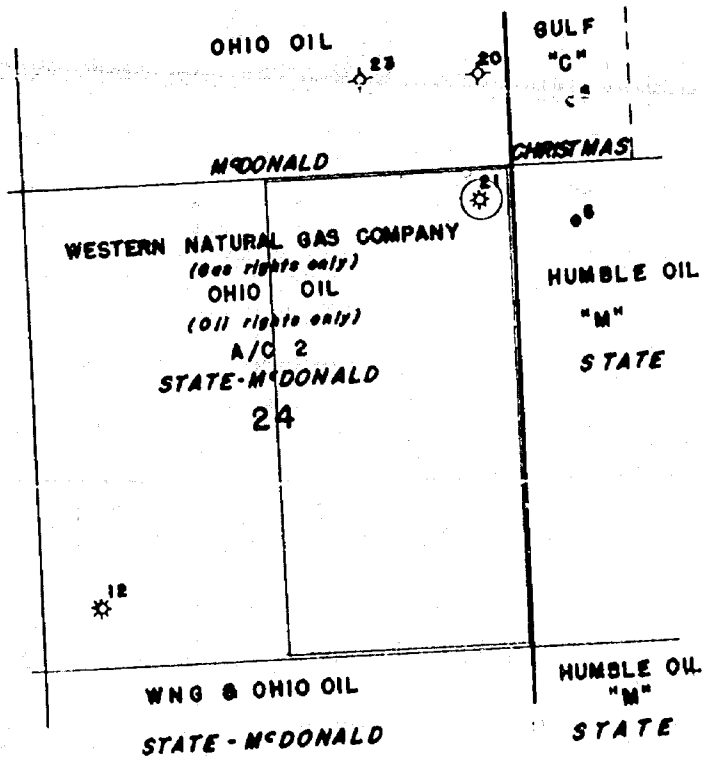
Humble Oil and Refining Company
P. O. Box 2347,
Hobbs, New Mexico

Amerada Petroleum Corporation
P. O. Box 312,
Midland, Texas

WESTERN NATURAL GAS COMPANY
ACREAGE DEDICATION FOR STATE McDONALD #21

24-22-36
Lea County, New Mexico
Scale 1" = 2000'

Plat Accompanying Application for
320-Acre Non-Standard Gas Unit
and Unorthodox Location
(Yates Undesignated)



Page 2114

NEW MEXICO OIL CONSERVATION COMMISSION
Well Location and Acreage Dedication Plat

Form C-128
Revised 5/1/57

Section A.

Date 10-10-60

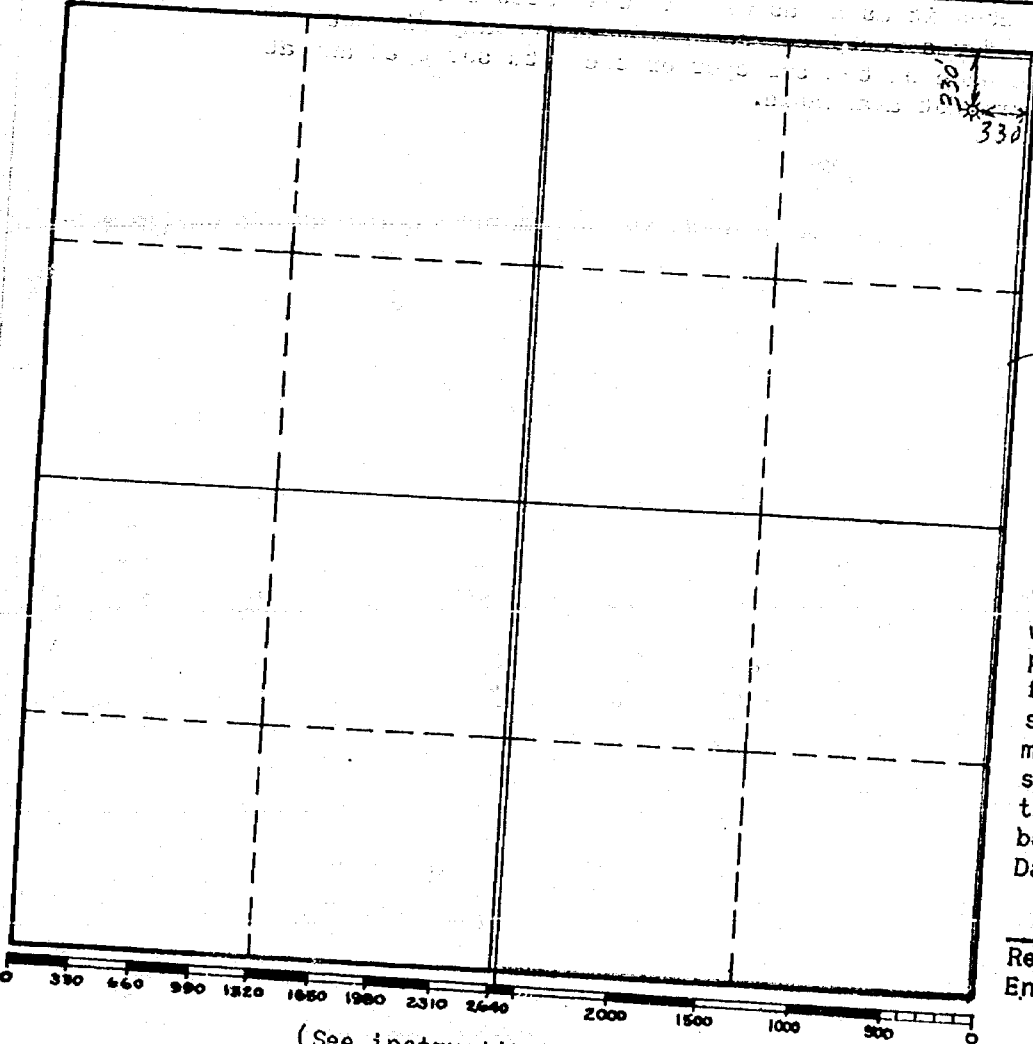
Operator Western Natural Gas Company Lease State McDonald Ac/2
Well No. 21 Unit Letter A Section 24 Township 22-S Range 36-E NMPM
Located 330 Feet From North Line, 330 Feet From East Line
County Lea G. L. Elevation 3436 Dedicated Acreage 320 Acres
Name of Producing Formation Yates Pool Undesignated

1. Is the Operator the only owner* in the dedicated acreage outlined on the plat below?
Yes X No _____
2. If the answer to question one is "no," have the interests of all the owners been consolidated by communitization agreement or otherwise? Yes _____ No _____. If answer is "yes," Type of Consolidation _____
3. If the answer to question two is "no," list all the owners and their respective interests below:

Owner

Land Description

Section B



This is to certify that the information in Section A above is true and complete to the best of my knowledge and belief.

Western Natural Gas Company
(Operator)

[Signature]
(Representative)

823 Midland Tower, Midland, Tex.
Address

This is to certify that the well location shown on the plat in Section B was plotted from field notes of actual surveys made by me or under my supervision and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed _____

* See reverse side

Registered Professional
Engineer and/or Land Surveyor.

Certificate No. _____
the reverse side)

(See instructions for completing this form on

INSTRUCTIONS FOR COMPLETION:

1. Operator shall furnish and certify to the information called for in Section A.
2. Operator shall outline the dedicated acreage for both oil and gas wells on the plat in Section B.
3. A registered professional engineer or land surveyor registered in the State of New Mexico or approved by the Commission shall show on the plat the location of the well and certify this information in the space provided.
4. All distances shown on the plat must be from the outer boundaries of Section.
5. If additional space is needed for listing owners and their respective interests as required in question 3, Section A, please use space below

* NOTE: This well was completed by Ohio Oil Company on March 31, 1941 in the Arrowhead Pool and produced from said pool up to August 1, 1960 at which time Western Natural Gas Company (who owns the gas rights in Section 24) purchased this well and recompleted it as a gas well in the Yates formation. The records and forms received from Ohio Oil Company did not include the name of the surveyor or the date surveyed and at this time are not available.

* "Owner" means the person who has the right to drill into and to produce from any pool and to appropriate the production either for himself or for himself and another. (65-3-29 (e) NMSA 1953 Comp.)

W A I V E R

WE HAVE BEEN advised of an application of the Western Natural Gas Company for a 320-acre non-standard gas proration unit, consisting of the E/2 of Section 24, T-22-S, R-36-E, Lea County, New Mexico, and an unorthodox location for the State McDonald Ac 21 well, an undesignated Yates well, 330' FN and E lines of the Section. This is to indicate that we have no objection to this application

Company: Humble Oil & Refining Co.

Date: Oct. 25, 1960

By: lib H P Hensley

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. <u>3</u>
CASE NO. <u>2114</u>

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122

Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Undesignated Yates Formation Yates County Lea
 Initial X Annual Special Date of Test 10-19-60
 Company Western Natural Gas Company Lease State McDonald Ac/2 Well No. 21
 Unit A Sec. 24 Twp. 22-S Rge. 36-E Purchaser None
 Casing 4 1/2 Wt. 9.5 I.D. Set at 3474 Perf. 2720 To 3290
 Tubing 2 3/8 Wt. 4.7 I.D. Set at 2675 Perf. To
 Gas Pay: From 2720 To 3290 L 2675 xG * 0.650 -GL 1739 Bar.Press. 13.2
 Producing Thru: Casing Tubing X Type Well Single
 Re-completion Single-Bradenhead-G. G. or G.O. Dual
 Date of ~~Completion~~ 10-2-60 Packer 2643 Reservoir Temp.

OBSERVED DATA

Tested Through (Prover) (Choke) (~~Manometer~~) Type Taps

No.	Flow Data					Tubing Data		Casing Data		Duration of Flow Hr.
	(Prover) (kms) Size	(Choke) (kms) Size	Press. psig	Diff. h _w	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.	
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1.	2" x 1/8"		961	-	64	961		"		3
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3.		2 x 6 x 1/4	696	-	60	696		"		3
4.		2 x 6 x 5/16	511	-	61	511		"		3
5.										

FLOW CALCULATIONS

No.	Coefficient (24-Hour)	$\sqrt{h_w p_f}$	Pressure psia	Flow Temp. Factor F _t	Gravity Factor * F _g	Compress. Factor F _{pv}	Rate of Flow Q-MCFPD @ 15.025 psia
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PRESSURE CALCULATIONS

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 Gravity of Liquid Hydrocarbons deg.
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Specific Gravity Separator Gas
 Specific Gravity Flowing Fluid
 P_c 1282.2 P_c² 1644.0

No.	P _t (psia)	P _t ²	F _c Q	(F _c Q) ²	(F _c Q) ² (1-e ^{-s})	P _w ²	P _c ² -P _w ²	Cal. P _w	P _w /P _c
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5.									

Absolute Potential: 1550 MCFPD; n 1.088

COMPANY WESTERN NATURAL GAS COMPANY

ADDRESS 823 Midland Tower, Midland, Texas

AGENT and TITLE W. B. Scott, Petroleum Engineer

WITNESSED J. B. Murray

COMPANY El Paso Natural Gas Company

REMARKS

*NOTE: Gas Gravity was assumed.

BEFORE EXAMINER UTZ

W. B. Scott

EXHIBIT

DATE REC 2.11.61

INSTRUCTIONS

This form is to be used for reporting multi-point back pressure tests on gas wells in the State, except those on which special orders are applicable. Three copies of this form and the back pressure curve shall be filed with the Commission at Box 871, Santa Fe.

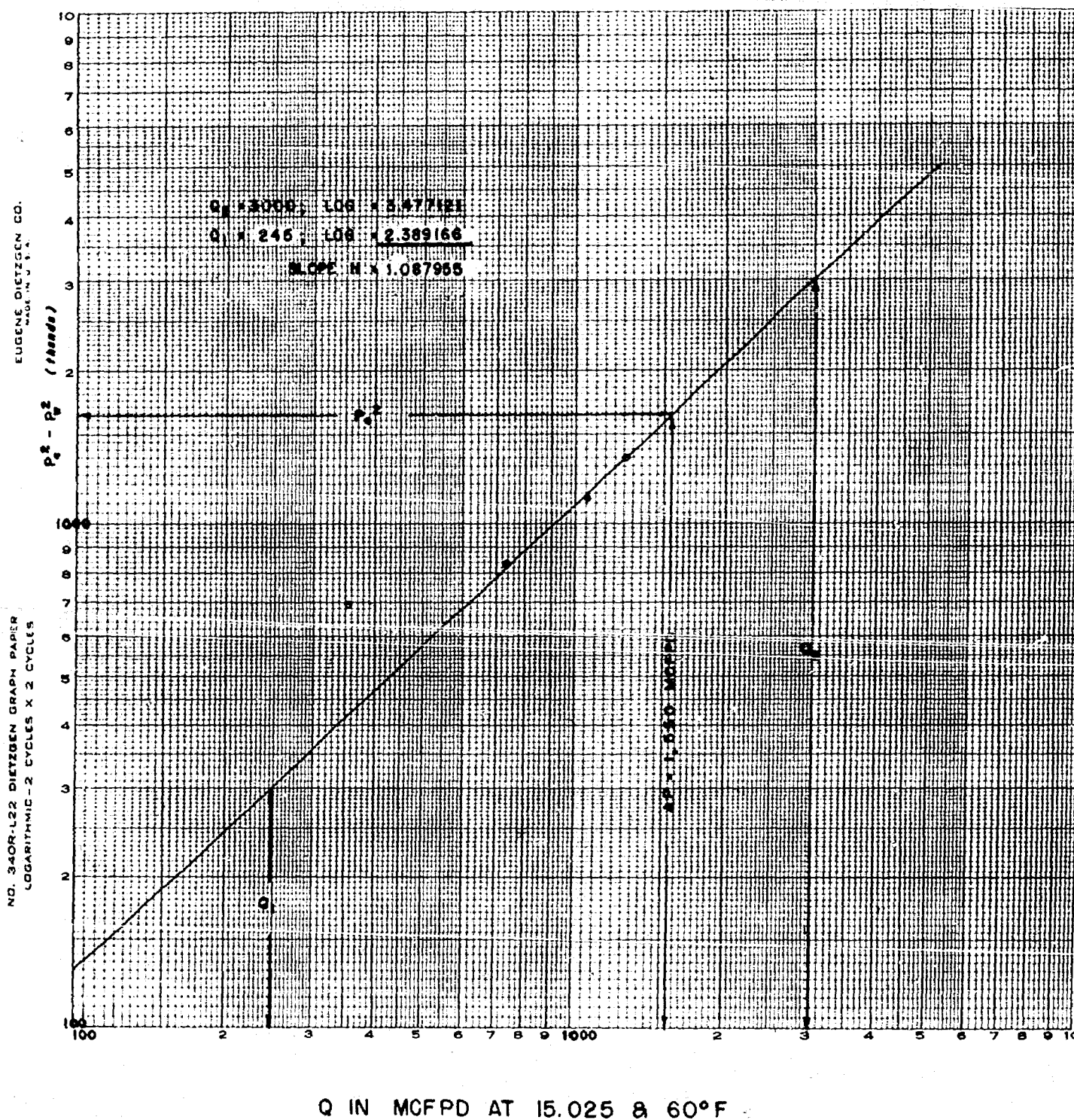
The log log paper used for plotting the back pressure curve shall be of at least three inch cycles.

NOMENCLATURE

- Q = Actual rate of flow at end of flow period at W. H. working pressure (P_w).
MCF/da. @ 15.025 psia and 60° F.
- P_G = 72 hour wellhead shut-in casing (or tubing) pressure whichever is greater.
psia
- P_w = Static wellhead working pressure as determined at the end of flow period.
(Casing if flowing thru tubing, tubing if flowing thru casing.) psia
- P_t = Flowing wellhead pressure (tubing if flowing through tubing, casing if flowing through casing.) psia
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- h_w = Differential meter pressure, inches water.
- F_g = Gravity correction factor.
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- F_{pv} = Supercompressability factor.
- n = Slope of back pressure curve.

Note: If P_w cannot be taken because of manner of completion or condition of well, then P_w must be calculated by adding the pressure drop due to friction within the flow string to P_t .

WESTERN NATURAL GAS COMPANY
 STATE-MCDONALD A/C 2 NO.21
 UNIT A, SEC 24, T-22-S, R-36-E
 OCTOBER 19, 1960

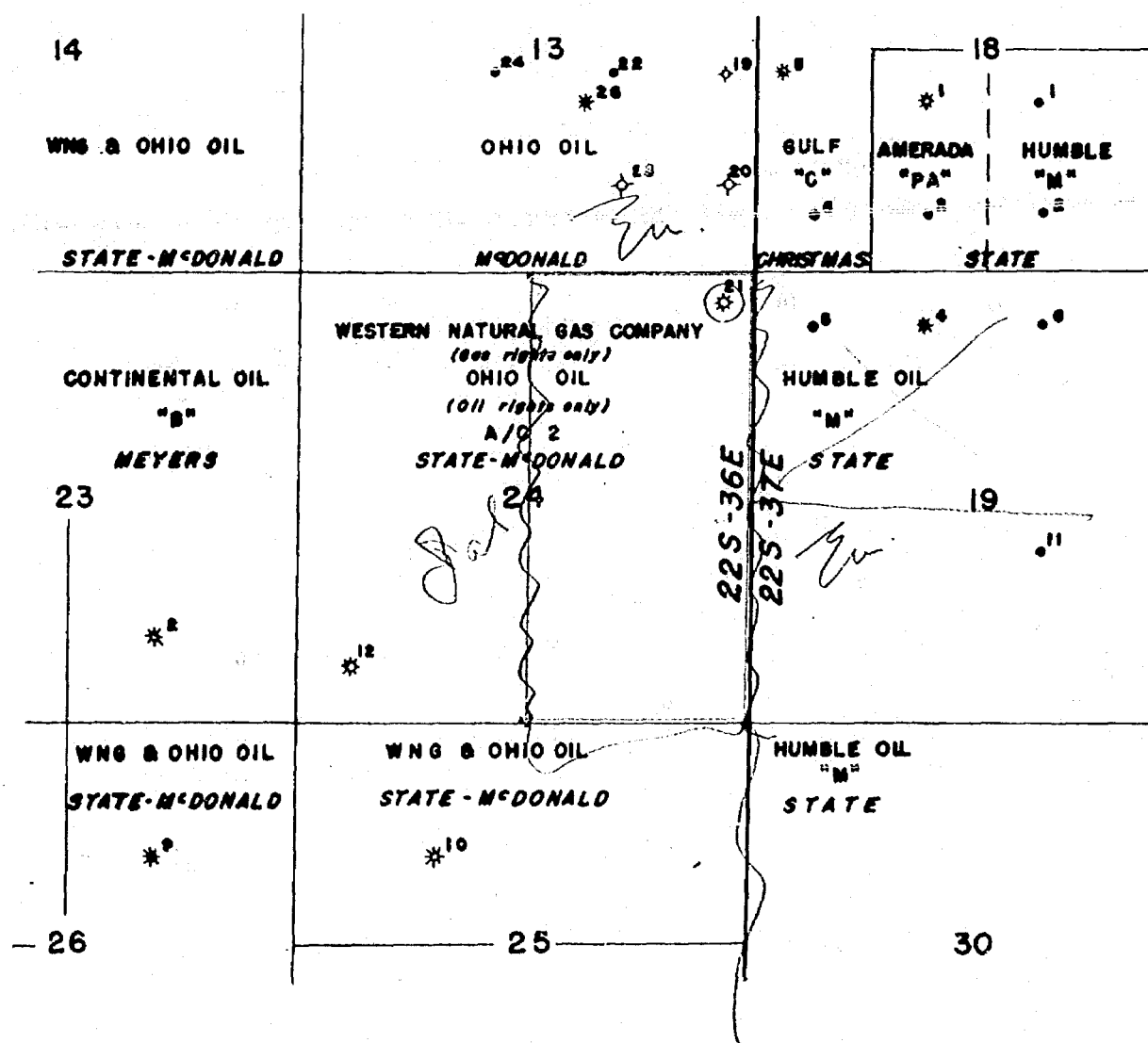


WESTERN NATURAL GAS COMPANY
ACREAGE DEDICATION FOR STATE McDONALD #21

24-22-36
Lea County, New Mexico
Scale 1" = 2000'

**Plat Accompanying Application for
320-Acre Non-Standard Gas Unit
and Unorthodox Location
(Yates Undesignated)**

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
John H. Utz EXHIBIT NO. 1
CASE NO. 2114



The Ohio Oil Co.

P. O. BOX 552
MIDLAND, TEXAS
October 21, 1960

Mr. R. H. McKoy
Western Natural Gas Company
823 Midland Tower Building
Midland, Texas

Dear Sir:

We have received a copy of your application to the New Mexico Oil Conservation Commission for a 320-acre non-standard gas proration unit and unorthodox location for your State McDonald A/C No. 21 well in Section 24 of Township-22-South, Range-36-East. You are asking that said well be designated as a Jalmat gas well.

The Ohio Oil Company has reviewed your application and has no objection.

Yours very truly,

Coe S. Mills

Coe S. Mills
District Manager

MR

BEFORE EXAMINER UTZ
OIL CONSERVATION
<i>W. H. H. H.</i> EXHIBIT NO. <i>4</i>
CASE NO. <i>2114</i>

Recommendations for Case # 2114

11-3-60

Lead H-2-60

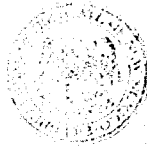
1. Grant Western Naturalists request for
a 320 Ac. NSP in the Palmat Gas Pool
consisting of the E/2 sec. 24-22S-36E.
2. Grant NSL for their state McDonald
Ac #21 330 / N+E line of section 24-22S-
36E.
3. Unit shall be effective on the 1st of the
month following approval by this
order provided operator has com-
plied with the provisions of Rule
8B of Order R-1670

Thos. A. McElroy

GOVERNOR
JOHN BURROUGHS
CHAIRMAN

State of New Mexico
Oil Conservation Commission

LAND COMMISSIONER
MURRAY E. MORGAN
MEMBER



P. O. BOX 871
SANTA FE

STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY DIRECTOR

November 9, 1960

Mr. Oliver Seth
Box 828
Santa Fe, New Mexico

Re: Case No. 2114
Order No. R-1816
Applicant:

Western Natural Gas Co.

Dear Sir:

Enclosed herewith are two copies of the above-referenced Commission order recently entered in the subject case.

Very truly yours,

A. L. PORTER, Jr.,
Secretary-Director

ir/

Carbon copy of order also sent to:

Hobbs OCC X
Artesia OCC
Aztec OCC

Other

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 2114
Order No. R-1816

APPLICATION OF WESTERN NATURAL
GAS COMPANY FOR A 320-ACRE NON-
STANDARD GAS PRORATION UNIT IN
THE JALMAT GAS POOL, LEA COUNTY,
NEW MEXICO, AND FOR AN UNORTHODOX
GAS WELL LOCATION.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on November 2, 1960, at Santa Fe, New Mexico, before Elvis A. Utz, Examiner duly appointed by the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission," in accordance with Rule 1214 of the Commission Rules and Regulations.

NOW, on this 9th day of November, 1960, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, Elvis A. Utz, 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 the applicant, Western Natural Gas Company, is the owner and operator of the E/2 of Section 24, Township 22 South, Range 36 East, NMPM, Lea County, New Mexico, which applicant proposes be established as a 320-acre non-standard gas proration unit in the Jalmat Gas Pool.

(3) That the applicant is the operator of a well to be recompleted as a gas well in the Jalmat Gas Pool, located 330 feet from the North line and 330 feet from the East line of said Section 24, to which well the proposed 320-acre non-standard gas proration unit would be dedicated.

(4) That the proposed 320-acre proration unit can reasonably be presumed to be productive of gas from the Jalmat Gas Pool.

(5) That establishment of the above-described non-standard gas proration unit and approval of the proposed unorthodox gas well location will neither cause waste nor impair correlative rights.

-2-

CASE No. 2114
Order No. R-1816

IT IS THEREFORE ORDERED:

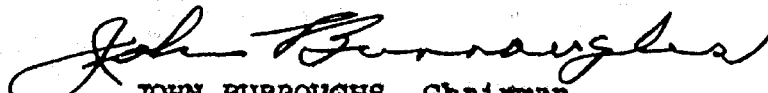
(1) That a 320-acre non-standard gas proration unit in the Jalmat Gas Pool consisting of the E/2 of Section 24, Township 22 South, Range 36 East, NMPM, Lea County, New Mexico, be and the same is hereby established. Said unit is to be dedicated to a gas well located at a point 330 feet from the North line and 330 feet from the East line of said Section 24, which location is hereby approved.

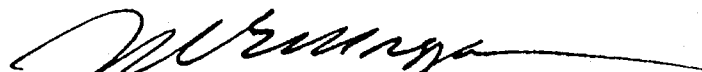
(2) That the above-described gas well be and the same is hereby assigned an acreage factor for allowable purposes in the proportion that the acreage in the non-standard gas proration unit bears to the acreage in a standard gas proration unit in the Jalmat Gas Pool, subject to the provisions of the Special Rules and Regulations for said pool.

(3) That the effective date of this order shall be December 1, 1960, or when the applicant shall have complied with the provisions of Rule 8(B) of Order No. R-1670, whichever date is later.

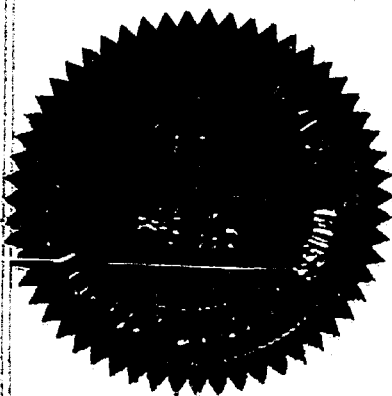
DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION


JOHN BURROUGHS, Chairman


MURRAY E. MORGAN, Member


A. L. PORTER, Jr., Member & Secretary



esr/

DEARNLEY-MEIER REPORTING SERVICE, Inc.

PHONE CH 3-6691

ALBUQUERQUE, NEW MEXICO

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
November 2, 1960
Examiner Hearing
Case No. 2114

IN THE MATTER OF:

Application of Western Natural Gas Company
for a 320-acre non-standard gas proration unit
and for an unorthodox gas well location. Appli-
cant, in the above-styled cause, seeks an order
establishing a 320-acre non-standard gas prora-
tion unit in the Jalmat Gas Pool consisting of
the E/2 of Section 24, Township 22 South, Range
36 East, Lea County, New Mexico. Applicant
further proposes to dedicate said unit to a
well located on an unorthodox location at a
point 330 feet from the North line and 330 feet
from the East line of said Section 24.

BEFORE:

Elvis A. Utz, Examiner

TRANSCRIPT OF HEARING

MR. UTZ: 2114.

MR. PAYNE: Case 2114. Application of Western Natural
Gas Company for a 320-acre non-standard gas proration unit and for
an unorthodox gas well location.

MR. SETH: We have one witness.

(Witness sworn.)

WENDELL B. COOK

called as a witness, having been previously duly sworn, testified
as follows:



DIRECT EXAMINATION

BY MR. SETH:

Q Would you state your full name, please?

A Wendell B. Cook.

Q And by whom are you employed, Mr. Cook?

A Western Natural Gas Company.

Q And what capacity?

A Division Petroleum Engineer, Midland, Texas.

Q Does that include the portion of New Mexico which is the subject of this application?

A Yes, it is.

Q Are you familiar with the area concerned?

A Yes, sir.

Q Are you familiar with the application?

A Yes, sir.

Q Have you testified before the Commission, or Examiner, before?

A Yes, sir.

MR. SETH: May he testify as an expert?

MR. UTZ: Yes.

Q (By Mr. Seth) Will you state, please, for the Examiner, the general purpose of the application?

A Western Natural Gas Company makes application to authorize for its Stake-McDonald No. 21 Oil Yates undesignated a 320-



acre non-standard gas proration unit comprising the east half of Section 24, Township 22 South, Range 36 East, Lea County, New Mexico; also to authorize an unorthodox gas well location for the said Stake-McDonald No. 21 well located 330 feet from the North line, 330 feet from the East line of Section 24, 22, 36, Lea County, New Mexico.

Q Do you have a plat showing the location of the well?

A Yes.

MR. UTZ: You want this Exhibit 1?

MR. SETH: Yes, please.

Q (By Mr. Seth) Would you please state for the Examiner what Exhibit 1 shows?

A This Exhibit 1 shows the location of the Stake-McDonald No. 21.

Q Is that circled in red?

A Circled in red, yes, sir.

Q And what about the non-standard unit, is that outlined in red, also?

A Yes, sir, the 320-acre non-standard unit.

Q Now, would you indicate, sir -- state the location of the pool boundaries, the Jalmat?

A The extremity of the Jalmat?

Q Yes.

A The Jalmat comes to the red mark there in the center of Section 24. That is the eastern extremity of the Jalmat Gas Pool.



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Q And how about the Eumont?

A The Eumont is the extreme east edge of Section 24, leaving the 320 acres undesignated.

Q Twenty-four lies between the Jalmat and the Eumont?

A Yes.

Q Now, would you describe the details of the completion and, more or less, the history of your statement?

A The unorthodox location, in the first place, was occasioned by a previously drilled well, drilled by Ohio Oil Company, completed April of 1941 in the old Arrowhead Oil Pool and open-hole section of the Queen.

Q It has produced as an oil well?

A Yes, sir, and as of recently, this year, it has been depleted of commercial quantities of oil and/or gas from this Queen's open-hole section, and Western Natural Gas, being the leasee and operator of a gas lease comprising this Section 24, had the prerogative, or the right, to take over this well and attempt to re-complete in the Yates, or Jalmat, gas, vertical limits.

Q Was this done?

A Yes, sir.

Q Was it completed as though it were a Jalmat well?

A Yes, sir.

Q Do you have the information on depth?

A All right, sir. Four and a half inch casing was originally set at 3514 feet.



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Q Do you have the log?

A Yes, sir.

Q If you would refer to Exhibit No. 2 --

A Exhibit 2, the Gamma Ray Neutron Log. Western Natural Gas proceeded to plug back in the four and a half inch casing, setting a cast-iron bridge plug at 3310, with a sack and a half of cement on top, and the perforated intervals indicated a total of eighty feet perforated in nine straight zones of porosity in the Jalmat gas vertical limits. We are above a hundred feet, top of the Queen, so we are strictly in the Jalmat gas vertical limits.

We proceeded then to, of course, test the old casing. All necessary mechanics were passed in pressure testing. We proceeded to frac this zone through two and a half inch tubing with packer set above all perforated zones with 27,000 gallons of water and 27,000 pounds of sand in two stages of fracture, sixty ball sealers. What I mean by two stages, we frac'd the six lower zones separately, or first, you might say; then we pulled up and frac'd the entire section with the subsequent approximately 15,000 gallons. The reason for that being, if you notice on the log, the better zone of porosity here at 2750 indicating if we had have combined all zones, this probably would have taken most of our injection, our water-sand injection.

Q A situation where you had to select?

A Yes, right. In this type of fracturing, we think that you have maximum efficiency in opening up all zones of porosity;



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as a matter of fact, by selectively selecting the frac'ing, we think we have opened up a porosity, possibly old-hole completions that have not been effectively frac'd.

Q Do you think it would have been more successful if you had not been restricted by the size of the tubing?

A That is right. We didn't want to subject this 20-year-old casing to any abnormal frac'ing pressure.

Q Is there anything else about the log?

A No, I think that will cover it, everything.

Q Did you subsequently conduct some tests on it?

A Yes, sir, we did.

Q Do you have some data on that?

A Yes, sir, we have a multi-point back pressure test.

Q Would you summarize?

A We acquired permission from the Commission office in Hobbs to flare this gas into the atmosphere for a twelve-hour period, the result being 1550 mcf absolute potential, as indicated. The gravity of the gas was assumed.

Q This was a special test to develop data?

A To ascertain some type of productive capacity of this well.

Q A regular official test --

A The official test will be conducted when the application is approved.

Q Is there anything else about it?



A I believe that is all.

Q Anything else you would like to call attention to?

A I believe that is all.

Q Did the company notify the offset operators of the oil company's intention?

A Yes, sir. We have two letters here from Humble and Ohio.

Q What do they say, in effect?

A That they offer no objection to what we are seeking here.

Q Now, would you refer to Exhibit No. 1, the zones owned by these two companies?

A Humble Oil is direct-east offset, Section 19, 22 South, 37 East; the Ohio, direct-north offset, Section 13.

Q Now, still referring to Exhibit 1, do you have another well in the claim section and, if so, what is the designation?

A The Stake-McDonald Well No. 12 Jalmat Gas Well.

Q And what is the location of that by subdivision?

A Well, it is the southwest quarter of Section 21, I believe that is six-sixty --

Q Section 24?

A Section 24, yes, I am sorry.

Q And what acreage is dedicated to No. 12?

A The southwest 160 acres of Section 24.

Q Are you planning at the present time to make application for dedication of additional acreage to that well?

A Yes, sir, the full 320.



Q And what would that be, northwest quarter of Section 24?

A That will add the northwest quarter section of Section 24.

Q At the present time is there any other acreage that could be dedicated to the 21 well, or is this the only possible arrangement at the present time?

A Well, the east half of 320?

Q Yes.

A Yes, that is the only possible acreage.

Q Now, as to the No. 12 well, will you give us a little data on that well?

A That well was completed in 1953; again, open-hole completion, with five and a half inch casing set on top of the producing horizon. It was acidized, originally, no frac'ing treatment. The original open flow was 577 mcf with a seventy-two hour shut-in pressure of 1105. In 1956, we proceeded to -- we frac'd this well, I believe, with 10,000 gallons -- I am not sure -- ten or fifteen thousand gallon fracturing treatment, and it increased the open flow by roughly 50% to 890 mcf. At that time, we shut in pressure of 14 psig.

Q Now, you indicated that is an open hole?

A Open hole completion, yes.

Q In your opinion, if you could selectively frac that well do you believe it could be improved even further?

A Yes, I do, with a liner setting, possibly selective



perforating frac'ing, we could improve that, possibly, a hundred percent, even now.

Q Do you think that would be pretty much typical of wells in this general area?

A I think so. In this marginal area here, what we are talking about, I do.

Q Has there been quite an improvement in the techniques in frac'ing and re-completing since this well was the last time?

A Yes. In the last seven or eight years, very much so.

Q And if I understand you correctly, you have wells in the extreme corners of the section, the northeast and southwest?

A That is true.

Q Both productive wells?

A Both productive.

Q In your opinion, is the entire east half of Section 24, will it be productive of gas?

A Yes.

Q And can reasonably be expected?

A Yes.

Q Do you know whether or not, as far as structure is concerned, is 21 lower than 12 or higher than 12?

A The Stake-McDonald 21 is approximately two hundred feet higher than 12, which is in the southwest quarter of Section 24.

Q And you have that approximation by comparison of logs?

A Right, logs in the area.



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Q And some general questions: Do you feel the granting of this application will be in the interest of conservation and prevent waste?

A Yes, sir.

MR. SETH: I believe that is all, Mr. Examiner. We would like to offer in evidence our Exhibits 1 through 5.

MR. UTZ: Without objection, Exhibits 1 through 5 will be entered into the record.

MR. SETH: That is all our direct.

CROSS-EXAMINATION

BY MR. UTZ:

Q Mr. Cook, did you say the No. 12 was a marginal well?

A Well, it is not -- we know in this edge of the Jalmat Field, Mr. Examiner, that we don't have the best, or the better, Jalmat gas wells. It is, let's say, a low-productive Jalmat well.

Q Is it classified as marginal on the porosity schedule?

A No. It is a non-marginal well.

Q How much energy does the well have, or what is its status?

A It is 1605 mcf --

Q Just a minute -- making it 320 allowable?

A Yes.

Q Do you think the duty of the 21 is great enough to make 320-acre allowable?

A I do, Mr. Examiner. I have, for instance, a well here



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with a 443 deliverability, and an acreage factor of two. I am just quoting at random, if that is all right -- has a, according to the November allocation, eleven million allocation to it. At this time, it is 5700 under. That is a particular well. But according to the figures that we have on that test, we are expecting anywhere from five hundred to eight hundred mcf deliverability, and, at that rate, assuming that, average monthly allocation would be estimated at eleven million. We are not anticipating that it will be capable of making that.

Q Of course, your C-122 is only a three-hour open?

A Yes, I realize that. Again, Mr. Examiner, that was to get some kind of a test for this hearing.

Q Yes. This Jalmat, does this Jalmat border this on the south?

A I will check. It comes in right here, yes, right here and then on down.

Q This is Eumont to the north?

A Yes.

MR. SETH: The Eumont cuts off here, I believe.

THE WITNESS: That is right.

Q (By Mr. Utz) Now, this interval you perforated between twenty-seven and twenty-eight hundred, what formation is that in?

A That is in the Yates. We have the three, four -- they are marked on the others.

Q So all your perforations are in the Yates?



A Yes, sir.

MR. UTZ: Are there any other questions of the witness?

If not, the witness may be excused.

Do you have further testimony?

MR. SETH: No, that is all we have.

MR. UTZ: Are there statements in this case? If there are none, the case will be taken under advisement.

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ALBUQUERQUE, NEW MEXICO

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, LAWRENCE HOLMES, JR., Certified Shorthand Reporter, do hereby certify that the foregoing and attached transcript of proceedings before the New Mexico Oil Conservation Commission at Santa Fe, New Mexico, is a true and correct record to the best of my knowledge, skill and ability.

IN WITNESS WHEREOF, I have affixed my hand this 22nd day of November, 1960.

Lawrence Holmes, Jr.
CERTIFIED SHORTHAND REPORTER

I do hereby certify that the foregoing is a complete record of the proceedings in the Executive Hearing of Case No. 7-11-4, heard on 11-15-60, 1960.
[Signature] Examiner
New Mexico Oil Conservation Commission



DEARNLEY-MEIER REPORTING SERVICE, Inc.

ALBUQUERQUE, NEW MEXICO

PHONE CH 3-6691

I N D E X

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E X H I B I T S

<u>NUMBER</u>	<u>OFFERED</u>	<u>RECEIVED</u>
Exhibits Nos. 1 through 5	10	10

