Case 2749

LAW OFFICES
HERVEY, DOW & HINKLE
MAIN OFFICE OCC LE BUILDING
ROSWELL, NEW MEXICO

J. M. HERVEY 1874-1953
HIRAM M. DOW
CLARENCE E. HINKLE
W. E. BONDURANT, JR.
GEORGE H. HUNKER, JR.
HOWARD C. BRATTON
S. B. CHRISTY IV
LEWIS C. COX, JR.
PAUL W. EATON, JR.
CONRAD E. COFFIELD
HAROLD L. HENSLEY, JR.

TELEPHONE 622-6510
AREA CODE 505
POST OFFICE BOX 10

1963 JAN 21 AM 8 27

January 18, 1963

Mr. Dan Nutter
New Mexico Oil Conservation Commission
State Capitol
Box 871
Santa Fe, New Mexico

Dear Dan:

I have prepared and enclose herewith three copies each of two applications of Ralph Lowe for special field rules for the Upper Pennsylvania and Morrow gas zones in the Indian Basin area, consisting of Sections 22 and 23, Township 21 South, Range 23 East.

It is my understanding that these cases will be heard at the Examiner's Hearing to be held on February 6th.

Thanking you for your cooperation in connection with this matter, I am

Yours sincerely,

HERVEY, DOW & HINKLE

By Clarence E. Hinkle

CEH: ev

Encls.

cc: Mr. Harvin Landua
c/o Ralph Lowe
Box 832
Midland, Texas

DOCKET MAILED
Date 1/23/63

Union Oil Company of California

MIDLAND DISTRICT TEXAS

January 29, 1963

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

Attn: Mr. A. L. Porter, Jr.
Secretary-Director

Re: Cases No. 2749 and No. 2750

Gentlemen:

In the above numbered cases, set for hearing February 6, 1963, Ralph Lowe seeks special pool rules and new pool designations for Upper Pennsylvanian and Morrow gas production in Sections 22 and 23, Township 21 South, Range 23 East, Eddy County, New Mexico.

Union Oil Company of California, a leaseholder of neighboring acreage, strongly supports the proposed temporary field rules. We feel that the proposed provision for 640-acre spacing units is in the interest of conservation, and respectfully urge the Commission's favorable consideration of this provision.

Very truly yours,

R. S. Cooke

R. S. Cooke
Division Engineer

RSC:bn
cc: Mr. Ralph Lowe

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

September 7, 1962

REPLY TO
P. O. BOX 4337
MIDLAND, TEXAS

Mr. Ralph Lowe
Box 832
Midland, Texas

Subject: Core Analysis
Indian Basin No. 1 Well
Wildcat
Eddy County, New Mexico
Location: Sec. 23-T21S-R23E

Dear Sir:

Pennsylvanian formation analyzed from 7610 to 7635 and 9200.0 to 9204.5 feet is interpreted to be gas productive where permeable. An economic completion will be entirely dependent upon additional productive formation being present above or below the cored intervals. A formation treatment will be necessary for satisfactory rates of flow. Summaries of average core analysis data are presented on page one of the report.

Formation analyzed from 9044 to 9050 feet is impermeable and non-productive and Devonian formation analyzed from 10,095 to 10,111 is interpreted to be water productive where permeable.

We sincerely appreciate this opportunity to be of service.

Very truly yours,

Core Laboratories, Inc.

R S Bynum Jr (K)

R. S. Bynum, Jr.,
Division Manager

RSB:HC:dc

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

January 4, 1963

REPLY TO
P. O. BOX 4337
MIDLAND, TEXAS

Mr. Ralph Lowe
Box 832
Midland, Texas

Subject: Core Analysis
Indian Basin No. 1-A Well
Eddy County, New Mexico
Location: Sec. 22-T21S-R23E

Dear Sir:

Canyon formation analyzed between 7374.0 and 7660.4 feet is interpreted to be gas productive where permeable. The productive capacity is considered adequate for satisfactory production rates without formation treatment. Average core analysis values are presented on page one of this report.

From 7660.4 to 7675.6 feet, Canyon formation exhibits high total water saturations and is interpreted to be both water and gas productive.

Strawn sand analyzed from 8667 to 8678 feet is considered to be gas productive where permeable; however, due to low permeability, a completion attempt is not recommended. Average core analysis values also are presented for the interval on page one.

Permeable Morrow formation analyzed at intervals between 9132.0 and 9324.7 feet is interpreted to be gas productive with adequate productive capacity for satisfactory rates of production without formation treatment. A summary of average core analysis values is presented on page two.

Due to lower residual oil and high total water saturations, the interval from 9324.7 to 9360.0 feet is interpreted to be water productive where permeable.

We appreciate this opportunity to be of service.

Very truly yours,

Core Laboratories, Inc.

R S Bynum Jr

R. S. Bynum, Jr.,
Division Manager

RSB:JR:dc

Distribution of Final Reports

3 Copies	Mr. Ralph Lowe Box 832 Midland, Texas
6 Copies	Mr. N. E. Webernick Marathon Oil Company Box 1398 Roswell, New Mexico
5 Copies	Mr. J. W. Hodges Sinclair Oil & Gas Company Box 1677 Roswell, New Mexico
4 Copies	Mr. D. C. Fish Kerr-McGee Oil Industries, Inc. Globe News Building Amarillo, Texas

CL 319

CORE LABORATORIES, INC.

Petroleum Reservoir Engineering

DALLAS, TEXAS

Well Indian Basin No. 1-A

CORE SUMMARY AND CALCULATED RECOVERABLE OIL

FORMATION NAME AND DEPTH INTERVAL: Canyon 7374.0-7660.4

FEET OF CORE RECOVERED FROM ABOVE INTERVAL		273.9	AVERAGE TOTAL WATER SATURATION: PER CENT OF PORE SPACE		35.4
FEET OF CORE INCLUDED IN AVERAGES		181.4	AVERAGE CONNATE WATER SATURATION: PER CENT OF PORE SPACE	(c)	35.4
AVERAGE PERMEABILITY: MILLIDARCYS	Max.	44	OIL GRAVITY: °API		
	90°	13			
PRODUCTIVE CAPACITY: MILLIDARCY-FEET	Max.	7982	ORIGINAL SOLUTION GAS-OIL RATIO: CUBIC FEET PER BARREL		
	90°	2358			
AVERAGE POROSITY: PER CENT		3.7	ORIGINAL FORMATION VOLUME FACTOR: BARRELS SATURATED OIL PER BARREL STOCK-TANK OIL		
AVERAGE RESIDUAL OIL SATURATION: PER CENT OF PORE SPACE		4.8	CALCULATED ORIGINAL STOCK-TANK OIL IN PLACE: BARRELS PER ACRE-FOOT		

Calculated maximum solution gas drive recovery is barrels per acre-foot, assuming production could be continued until reservoir pressure declined to zero psig. Calculated maximum water drive recovery is barrels per acre-foot, assuming full maintenance of original reservoir pressure, 100% areal and vertical coverage, and continuation of production to 100% water cut. (*Please refer to footnotes for further discussion of recovery estimates.*)

FORMATION NAME AND DEPTH INTERVAL: Strawn 8667.0-8678.0

FEET OF CORE RECOVERED FROM ABOVE INTERVAL		11.0	AVERAGE TOTAL WATER SATURATION: PER CENT OF PORE SPACE		54.4
FEET OF CORE INCLUDED IN AVERAGES		6.2	AVERAGE CONNATE WATER SATURATION: PER CENT OF PORE SPACE	(c)	54.4
AVERAGE PERMEABILITY: MILLIDARCYS	Max.	0.2	OIL GRAVITY: °API		
	90°	0.2			
PRODUCTIVE CAPACITY: MILLIDARCY-FEET	Max.	1.2	ORIGINAL SOLUTION GAS-OIL RATIO: CUBIC FEET PER BARREL		
	90°	1.2			
AVERAGE POROSITY: PER CENT		8.5	ORIGINAL FORMATION VOLUME FACTOR: BARRELS SATURATED OIL PER BARREL STOCK-TANK OIL		
AVERAGE RESIDUAL OIL SATURATION: PER CENT OF PORE SPACE		2.2	CALCULATED ORIGINAL STOCK-TANK OIL IN PLACE: BARRELS PER ACRE-FOOT		

Calculated maximum solution gas drive recovery is barrels per acre-foot, assuming production could be continued until reservoir pressure declined to zero psig. Calculated maximum water drive recovery is barrels per acre-foot, assuming full maintenance of original reservoir pressure, 100% areal and vertical coverage, and continuation of production to 100% water cut. (*Please refer to footnotes for further discussion of recovery estimates.*)

(c) Calculated (e) Estimated (m) Measured (*) Refer to attached letter.

These recovery estimates represent theoretical maximum values for solution gas and water drive. They assume that production is started at original reservoir pressure; i.e., no account is taken of production to date or of prior drainage to other areas. The effects of factors tending to reduce actual ultimate recovery, such as economic limits on oil production rates, gas-oil ratios, or water-oil ratios, have not been taken into account. Neither have factors been considered which may result in actual recovery intermediate between solution gas and complete water drive recoveries, such as gas cap expansion, gravity drainage, or partial water drive. Detailed predictions of ultimate oil recovery to specific abandonment conditions may be made in an engineering study in which consideration is given to overall reservoir characteristics and economic factors.

CL 319

CORE LABORATORIES, INC.

Petroleum Reservoir Engineering

DALLAS, TEXAS

Well Indian Basin No. 1-A

CORE SUMMARY AND CALCULATED RECOVERABLE OIL

FORMATION NAME AND DEPTH INTERVAL: Morrow 9132.0-9324.7

FEET OF CORE RECOVERED FROM ABOVE INTERVAL		187.9	AVERAGE TOTAL WATER SATURATION: PER CENT OF PORE SPACE		48.5
FEET OF CORE INCLUDED IN AVERAGES		18.0	AVERAGE CONNATE WATER SATURATION: PER CENT OF PORE SPACE	(c)	48.5
AVERAGE PERMEABILITY: MILLIDARCYS	Max.	12	OIL GRAVITY: °API		
	90°	11			
PRODUCTIVE CAPACITY: MILLIDARCY-FEET	Max.	216	ORIGINAL SOLUTION GAS-OIL RATIO: CUBIC FEET PER BARREL		
	90°	198			
AVERAGE POROSITY: PER CENT		10.8	ORIGINAL FORMATION VOLUME FACTOR: BARRELS SATURATED OIL PER BARREL STOCK-TANK OIL		
AVERAGE REBIDUAL OIL SATURATION: PER CENT OF PORE SPACE		3.9	CALCULATED ORIGINAL STOCK-TANK OIL IN PLACE: BARRELS PER ACRE-FOOT		

Calculated maximum solution gas drive recovery is barrels per acre-foot, assuming production could be continued until reservoir pressure declined to zero psig. Calculated maximum water drive recovery is barrels per acre-foot, assuming full maintenance of original reservoir pressure, 100% areal and vertical coverage, and continuation of production to 100% water cut. (*Please refer to footnotes for further discussion of recovery estimates.*)

FORMATION NAME AND DEPTH INTERVAL:

FEET OF CORE RECOVERED FROM ABOVE INTERVAL		AVERAGE TOTAL WATER SATURATION: PER CENT OF PORE SPACE	
FEET OF CORE INCLUDED IN AVERAGES		AVERAGE CONNATE WATER SATURATION: PER CENT OF PORE SPACE	
AVERAGE PERMEABILITY: MILLIDARCYS		OIL GRAVITY: °API	
PRODUCTIVE CAPACITY: MILLIDARCY-FEET		ORIGINAL SOLUTION GAS-OIL RATIO: CUBIC FEET PER BARREL	
AVERAGE POROSITY: PER CENT		ORIGINAL FORMATION VOLUME FACTOR: BARRELS SATURATED OIL PER BARREL STOCK-TANK OIL	
AVERAGE RESIDUAL OIL SATURATION: PER CENT OF PORE SPACE		CALCULATED ORIGINAL STOCK-TANK OIL IN PLACE: BARRELS PER ACRE-FOOT	

Calculated maximum solution gas drive recovery is barrels per acre-foot, assuming production could be continued until reservoir pressure declined to zero psig. Calculated maximum water drive recovery is barrels per acre-foot, assuming full maintenance of original reservoir pressure, 100% areal and vertical coverage, and continuation of production to 100% water cut. (*Please refer to footnotes for further discussion of recovery estimates.*)

(c) Calculated (e) Estimated (m) Measured (*) Refer to attached letter.

These recovery estimates represent theoretical maximum values for solution gas and water drive. They assume that production is started at original reservoir pressure; i.e., no account is taken of production to date or of prior drainage to other areas. The effects of factors tending to reduce actual ultimate recovery, such as economic limits on oil production rates, gas-oil ratios, or water-oil ratios, have not been taken into account. Neither have factors been considered which may result in actual recovery intermediate between solution gas and complete water drive recoveries, such as gas cap expansion, gravity drainage, or partial water drive. Detailed predictions of ultimate oil recovery to specific abandonment conditions may be made in an engineering study in which consideration is given to overall reservoir characteristics and economic factors.