MONTGOMERY & ANDREWS

PROFESSIONAL ASSOCIATION
ATTORNEYS AND COUNSELORS AT LAW

June 29, 1984

SANTA FE OFFICE 325 Paseo de Peralta Post Office Box 2307 Santa Fe, New Mexico 87504-2307

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ALBUQUERQUE OFFICE Suite 200 500 Copper Avenue, N.W. Post Office Box 2048 Albuquerque, New Mexico 87103-2048

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THE PLAN DIVISION

SIMBA L

A. K. Montgomery Seth D. Montgomery Frank Andrews III Victor R. Ortega John E. Conway Jeffrey R. Brannen John B. Pound Gary R. Kilpatric Thomas W. Olson William C. Madison Walter J. Melendres Bruce L. Herr Michael W. Brennan Robert P. Worcester John B. Draper Nancy M. Anderson Janet McL. McKay

J. O. Seth (1883-1963) Frank Andrews (1914-1981)

> Jean-Nikole Wells Mark F. Sheridan Joseph E. Earnest Stephen S. Hamilton Phyllis A. Dow Wm. Alan Wright Brad V. Coryell Wesley B. Howard, Jr. Thurman W. Moore III Michael H. Harbour John M. Hickey Timothy L. Butler Mack E. With Galen M. Buller Katherine A. Weeks Edmund H. Kendrick

REPLY TO SANTA FE OFFICE

New Mexico Energy and Minerals Department Oil Conservation Division State Land Office Building Santa Fe, New Mexico 87503

Re: OCC Cases 8262, 8263 and 8264

Gentlemen:

Please be advised that Michael Fredette of the office of General Counsel of Shell Western E & P, Inc., Houston, Texas, is associated with our firm for the presentation of evidence and argument in the above-referenced cases.

Sincerely,

Edmund H. Kendrick

Edmund H Kerdwich

EHK:gar #2355-84-01

cc: Mr. Mike Fredette

MONTGOMERY & ANDREWS

PROFESSIONAL ASSOCIATION ATTORNEYS AND COUNSELORS AT LAW

June 29, 1984

HAND DELIVERED

SANTA FE OFFICE 325 Paseo de Peralta Post Office Box 2307 Santa Fe, New Mexico 87504-2307

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Mr. Perry Pearce General Counsel Oil Conservation Commission Energy & Minerals Department State Land Office Santa Fe, New Mexico 87504

Jean-Nikole Wells Mark F. Sheridan Joseph E. Earnest

Stephen S. Hamilton

OCC Cases (8262), 8263 and 8264

Dear Perry:

On behalf of Shell Western E & P, Inc., I am enclosing, for filing, an original and two copies of applications in the above-referenced cases.

Sincerely,

Edmund H. Kendrick

EHK:gar Enclosure #2355-84-01

cc: Michael J. Fredette, Esquire

MONTGOMERY & ANDREWS

PROFESSIONAL ASSOCIATION ATTORNEYS AND COUNSELORS AT LAW

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June 19, 1984

HAND DELIVERED

SANTA FE OFFICE 325 Paseo de Peralta Post Office Box 2307 Santa Fe, New Mexico 87504-2307

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Telephone (505) 242-9677

REPLY TO SANTA FE OFFICE

Mr. Perry Pearce General Counsel Oil Conservation Commission Energy & Minerals Department State Land Office Santa Fe, New Mexico 87504

Re: Application of Shell Western E & P Inc.

Before the OCC

Dear Perry:

Per our discussion today, I am attaching information forming the basis for a verbal application under Rule 1203 of OCD Rules and Regulations. Mr. Fredette or I will be in touch with you tomorrow to inform you whether Shell wishes to place the newspaper notices required for a July 11, 1984 hearing.

Thank you for your consideration in this matter.

Sincerely,

Edmund H. Kendrick

Edmund H Kendrik

EHK:gar Enclosure #2355-84-01

cc: Mr. Mike Fredette

FROM SWE&PI WCK FAX

Applicant:

Shell Western E&P Inc.

Unit (or Lease):

North Hobbs (Grayburg-San Andres) Unit

Pool:

Hobbs (Grayburg-San Andres) Pool,

Lea County, New Mexico

Wells:

Proposed locations listed on attachment

Application:

38 Infill Wells

(A) For each well:

(1) Well is necessary to effectively and efficiently drain a portion of the reservoir covered by the proration unit which cannot be so drained by any existing well within that unit.

(2) Approval of unorthodox location.

(B) For wells indicated by asterisk: permission to directionally drill.

OFFSET OPERATORS:

Amoco Production Company (USA)

P.O. Box 3092 Houston, TX 77253

Moranco

P.O. Box 1860 Hobbs, NM 88240

GAS PURCHASER:

Phillips Petroleum Co.

Attn: Laws and Regulations

336 H.S. & L. Building Bartlesville, OK 74004

STAKING LOCATIONS NORTH HOBBS (G/SA UNIT INFILL Lea County, NM

Well No.	Locat	ion	<u>Sec.</u>	TWP	RNG
13-342	1200' FSL,	2500' FEL	13	185	37E
13-442	1200' FSL,	220' FEL	13	185	37E
24-312	10' FNL,	2630' FEL	24	188	37E
24-414	10' FNL,	1280' FEL	24	185	37E
19-212	1460' FWL,	160' FNL	19	185	38E
24-432	1280' FEL,	2480' FSL	24	185	37E
19-232	1390' FWL,	2795' FNL	19	185	. 38 €
20-132	180' FWL,	2490' FSL	20	185	38E
24-442	200' FEL,	1260' FSL	24	185	37E
19-332	2680' FWL,	1430' FSL	19	185	38E
24-213	2620' FWL,	1280' FNL	24	185	37 E
29-442	170' FEL,	1230' FSL	29	185	38E
*28-242	Suf 2014' FWL, Bhl 2400' FWL,		28	18S	38E
30-242	1400' FWL,	200' FSL	30	188	38E
30-444	215' FSL,	1255' FEL	30	185	38 E
32-31 2	1400' FEL,	210' FNL	32	185	38E
*33-312	Suf 1830' FEL Bhl 1330' FEL		33	18 S	38E
32-4 22	110' FEL,	1385' FNL	32	18S	38E

Well No.	Location	Sec.	TWP	RNG
33-212	1420' FWL, 205' FNL	33	185	38 E
31-422	2259' FNL, 600' FEL	31	185	38E
32-223	1410' FWL, 2630' FNL	32	185	38E
32-423	1280' FEL, 2540' FNL	32	188	38E
33-323	1420' FEL, 2495' FNL	33	185	38E
32-143	300' FWL, 1185' FSL	32	185	38E
32-332	2350' FEL, 1550' FSL	32	188	38E
33-242	2530' FWL, 1280' FSL	33	185	38E
19-442	380' FEL, 1100' FSL	19	188	38 E
24-342	145' PSL, 1435' FEL	24	185	38E
30-112	200' FNL, 1310' FWL	30	188	38E
*30-312	Suf 500' FNL, 1448' FEL Bhl 20' FNL, 1268' FEL	30	185	38 E
30-113	1310' FNL, 195' FWL	30	185	38E
29-322	2350' FEL, 1430' FNL	29	188	38E
28-122	200' FWL, 1592' FNL	28	185	38E
30-233	1480' FWL, 2455' FSL	30	185	38E
30-332	1600' FEL, 2470' FSL	30	185	38E
30-432	180' FEL, 2260' FSL	30	185	38E
29-323	2500' FEL, 2540' FNL	29	185	38E
29-122	180' FWL, 1600' FNL	29	185	38E

^{*}Directional

Shell Oil Company



200 North Dairy Ashford P.O. Box 576 Houston, Texas 77001

July 30, 1984

SPECIAL DELIVERY

Mr. R. L. Stamets State of New Mexico Energy and Minerals Department Oil Conservation Division P.O. Box 2088 Santa Fe, NM 87501

Dear Mr. Stamets:

SUBJECT:

OIL CONSERVATION DIVISION

CASE NOS. 8262, 8263, AND 8264

I have enclosed, for your consideration, two originals of proposed orders in Case Nos. 8263 (unorthodox locations) and 8264 (unorthodox locations and directional drilling).

A proposed order in Case No. 8262 (infill findings) will follow in the very near future.

My secretary has the proposed orders on diskette and would be happy to make any changes to the form or content.

I hope you find the enclosed proposals helpful.

Very truly yours,

Michael Fredette

Attorney

Legal Department, E&P - Western U.S.

MF/mwt

Enclosures

w/enclosures

Shell Western E&P Inc. A. J. Fore

Shell Oil Company



200 North Dairy Ashford P.O. Box 576 Houston, Texas 77001

September 13, 1984

Mr. R. L. Stamets State of New Mexico Energy and Minerals Department Oil Conservation Division P.O. Box 2088 Santa Fe, NM 87501

Dear Mr. Stamets:

SUBJECT:

OIL CONSERVATION DIVISION

CASE NO. 8262

I have enclosed, for your consideration, two originals of a proposed order in Case No. 8262.

I apologize for the delay in getting this proposal to you. You may find the proposed order rather detailed. However, I believe this is appropriate inasmuch as the order will be referred to in future applications for well category determinations on the wells covered by the order.

My secretary has the proposed order on diskette and would be happy to make any changes to the form or content.

I hope you find the enclosed proposal helpful.

Very truly yours,

Michael Fredette

Attorney

Legal Department, E&P - Western U.S.

MF/mwt

Enclosures

cc: w/enclosures

Shell Western E&P Inc.

A. J. Fore

SEP 17 1984
OIL CONSERVATION DIVISION SANTA FE

SEP 17 1984

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:

CASE NO. 8262

Ørder No.

OIL CONSERVATION DIVISION

SANTA FE

APPLICATION OF SHELL WESTERN E&P INC. FOR EFFECTIVE AND EFFICIENT DRAINAGE FINDINGS FOR INFILL WELLS, LEA COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:00 a.m. on July 11, 1984, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this day of September, 1984, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

- (1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.
- (2) That Section 271.305(b) of the Rules of the Federal Energy Regulatory Commission promulgated pursuant to the Natural cas Policy Act of 1978 provides that, in order for an infill well to qualify as a new, onshore production well under Section 103 of said Act, the Division must find that the infill well is necessary to effectively and efficiently drain a portion of the reservoir covered by the proration unit which cannot be so drained by any existing well within the proration unit.
- (3) That the Oil Conservation Commission of New Mexico, by its Order No. R-6198 dated November 30, 1979, approved statutory unitization for the North Hobbs Grayburg-San Andres Unit Area, Hobbs Grayburg-San Andres Pool, Lea County, New Mexico, and, by its Order No. R-6199 dated November 30, 1979, authorized institution of the North Hobbs Grayburg-San Andres Unit Pressure Maintenance Project in the North Hobbs Grayburg-San Andres Unit Area.

2 Case No. 8262 Order No.

- (4) That the applicant herein, Shell Western E&P Inc., proposes to drill 35 North Hobbs Grayburg-San Andres Unit wells at the unorthodox locations described in Exhibit "A" attached hereto, under authority of Division Order No. R-7628 dated August 10, 1984, and to directionally drill three North Hobbs Grayburg-San Andres Unit Wells from the unorthodox surface locations to a point within 75 feet of the unorthodox bottom hole locations described in Exhibit "B" attached hereto, under authority of Division Order No. R-7629 dated August 10, 1984.
- (5) That each well drilled under authority of Division Order No. R-7628, shall be drilled as an infill well, being the second or subsequent well drilled on an established proration unit, as described in Exhibit "A" attached hereto.
- (6) That each well drilled under authority of Division Order No. R-7629, shall be drilled as an infill well, being the second or subsequent well drilled on an established proration unit, being the governmental quarter-quarter section wherein the well is ultimately bottomed as determined by means of a continuous multi-shot directional survey conducted subsequent to the directional drilling of the well pursuant to the order.
- (7) That the applicant herein, Shell Western E&P Inc., seeks a finding that each well drilled under authority of Division Order No. R-7628 or Division Order No. R-7629 is necessary to effectively and efficiently drain a portion of the reservoir covered by the proration unit for the well which cannot be so drained by any existing well within the proration unit.
- (8) That the North Hobbs Grayburg-San Andres Unit Area covers approximately 10,650 surface acres, and is currently developed by 264 wells, including 191 producing wells, 68 injection wells, and 5 shut-in or temporarily abandoned wells.
- (9) That the proposed infill drilling program described in Finding Nos. (4), (5), and (6) above will be conducted in the San Andres pay of the Hobbs Grayburg-San Andres Pool.
- (10) That the structure is a NW-SE tending anticline that is approximately 8 miles long and 3 1/2 miles wide with nearly 400 feet of closure above the original oil-water contact, which was located at 614 feet subsea.
- (11) That although the lateral continuity of the San Andres pay is considered to be good in a gross sense, very rapid facies changes, both horizontally and vertically, make

3 Case No. 8262 Order No.

it difficult to correlate individual pay strings between wells and localized barriers to fluid flow do exist.

- (12) That as a result of competitive drilling prior to unitization, wells in the North Hobbs Grayburg-San Andres Unit Area were drilled on offsetting locations only 330 feet from a corner of their respective proration units.
- (13) That as a result of the lenticular nature of the reservoir rock as described in Finding No. (11) above and primary development of the North Hobbs Grayburg-San Andres Unit Area on cluster well patterns as described in Finding No. (12) above, portions of the Hobbs Grayburg-San Andres Pool covered by established proration units on which wells will be drilled under authority of Division Order No. R-7628 or Division Order No. R-7629 have not been effectively and efficiently drained.
- (14) That each well drilled under authority of Division Order No. R-7628 or Division Order No. R-7629 will result in more effective and efficient drainage of a portion of the Hobbs Grayburg-San Andres Pool covered by the established proration unit on which the well will be drilled by improving pay continuity.
- (15) That the current injection pattern in the North Hobbs Grayburg-San Andres Pressure Maintenance Project is a modified 160-acre 5-spot pattern with a producer located at each corner and the injection well in the center of the quarter section.
- (16) That the injection pattern described in Finding No. (15) above has not provided an effective and efficient sweep of portions of the Hobbs Grayburg-San Andres Pool between the 160-acre patterns, due to a lack of pressure sink or drainage points in such areas.
- (17) That wells drilled under authority of Division Order No. R-7628 or Division Order No. R-7629 will be located along quarter section lines in the areas of poor sweep efficiency described in Finding No. (16) above, resulting in a more effective and efficient sweep of such areas.
- (18) That each well drilled and completed under authority of Division Order No. R-7628 or Division Order No. R-7629 should result in the recovery of an additional 125,000 barrels of oil and 80 MMCF of gas which would not otherwise be recovered.
- (19) That each well drilled under authority of Division Order No. R-7628 or Division Order No. R-7629 is necessary to effectively and efficiently drain a portion of the Hobbs Grayburg-San Andres Pool covered by the proration unit for the well which cannot be so drained by any existing well within the proration unit.

Case No. 8262 Order No. (20) That, based on the geological and engineering evidence presented in this case, the application should be approved. IT IS THEREFORE ORDERED: (1) That each well drilled under authority of Division Order No. R-7628 or Division Order No. R-7629 is hereby found to be necessary to effectively and efficiently drain a portion of the reservoir covered by the proration unit for the well which cannot be so drained by any existing well within the proration unit, all within the Hobbs Grayburg-San Andres Pool, Lea County, New Mexico. That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary. DONE at Santa Fe, New Mexico, on the day and year hereinabove designated. STATE OF NEW MEXICO OIL CONSERVATION DIVISION JOE D. RAMEY Director SEAL

NORTH HOBBS GRAYBURG-SAN ANDRES UNIT AREA PRESSURE MAINTENANCE PROJECT

HOBBS GRAYBURG-SAN ANDRES POOL LEA COUNTY, NEW MEXICO

Infill Wells

TOWNSHIP 18 SOUTH, RANGE 37 EAST, NMPM

Section No.	Unit Well No.	Unit <u>Letter</u>	Well Location	Proration <u>Unit</u>
13	342	О	1200' FSL & 2500' FEL	SW4SE4
13	442	P	1200' FSL & 220' FEL	SE\SE\
24	212	С	1280' FNL & 2620' FWL	NE4NW4
24	312	В	10' FNL & 2630' FEL	NW\ne\
24	342	0	145' FSL & 1435' FEL	SW4SE4
24	414	A	10' FNL & 1280' FEL	NE4NE4
24	432	I	2480' FSL & 1280' FEL	NE4SE4
24	442	P	1260' FSL & 200' FEL	SE\SE\

TOWNSHIP 18 SOUTH, RANGE 38 EAST, NMPM

Section No.	Unit Well No.	Unit <u>Letter</u>	Well Location	Proration Unit
19	212	С	160' FNL & 1460' FWL	NE4NW4
19	232	K	2795' FNL & 1390' FWL	NE\SW\
19	332	J	1430' FSL & 2535' FEL	NW¼SE¼
19	442	P	1100' FSL & 380' FEL	SE\SE\
20	132	L	2490' FSL & 180' FWL	NW\sw\
28	122	E	1592' FNL & 200' FWL	SW\nw\
29	122	E	1600' FNL & 180' FWL	SW4NW4
29	322	G	1430' FNL & 2350' FEL	SW\ne\
29	323	G	2540' FNL & 2500' FEL	SW4NE4
29	442	P	1230' FSL & 170' FEL	SE¼SE¼
30	112	D	200' FNL & 1310' FWL	$NW_4^1NW_4^1$
30	113	D	1310' FNL & 195' FWL	NW\nw\
30	233	K	2455' FSL & 1480' FWL	NE¼SW¼
30	242	N	200' FSL & 1400' FWL	SE4SW4
30	332	J	2470' FSL & 1600' FEL	NW¼SE¼
30	432	I	2260' FSL & 180' FEL	NE\SE\
30	444	P	215' FSL & 1255' FEL	SE¼SE¼
31	422	H	2259' FNL & 600' FEL	SE%NE%
32	143	M	1185' FSL & 300' FWL	SW4SW4
32	223	F	2630' FNL & 1410' FWL	SE4NW4
32	312	В	210' FNL & 1400' FEL	NW4NE4
32	332	J	1550' FSL & 2350' FEL	NW\SE\
32	422	H	1385' FNL & 110' FEL	SE\NE\
32	423	H	2540' FNL & 1280' FEL	SE14NE14
33	212	С	205' FNL & 1420' FWL	NE¼NW¼
33	242	N	1280' FSL & 2530' FWL	SE¼SW¼
33	323	G	2495' FNL & 1420' FEL	SW¼NE¼

EXHIBIT "A" CASE NO. 8262 ORDER NO.

NORTH HOBBS GRAYBURG-SAN ANDRES UNIT AREA PRESSURE MAINTENANCE PROJECT

HOBBS GRAYBURG-SAN ANDRES POOL LEA COUNTY, NEW MEXICO

INFILL WELLS

TOWNSHIP 18 SOUTH, RANGE 38 EAST, NMPM

Section Unit No. Well No.	Surface Location	Bottom Hole <u>Location</u>
28 242	1163' FSL & 2014' FWL	1100' FSL & 2400' FWL
30 312	500' FNL & 1448' FEL	20' FNL & 1268' FEL
33 312	136' FNL & 1702' FEL	10' FNL & 1330' FEL

EXHIBIT "B" CASE NO. 8262 ORDER NO.