

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

April 18, 1978

Amoco Production Company
P. O. Box 3092
Houston, Texas 77001

Attention: J. L. Hoyt, Jr.

Re: Case No. 4578
Empire South Deep Unit
1978 Plan of Development

Gentlemen:

We hereby approve your 1978 Plan of Development for the Empire South Deep Unit, Eddy County, New Mexico, calling for the drilling of one additional Morrow well.

This approval is subject to like approval by the United States Geological Survey and the Commissioner of Public Lands.

Very truly yours,

JOE D. RAMEY
Director

JDR/LT/fd

cc: U.S.G.S. - Roswell
Commissioner of Public Lands

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Y

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

April 18, 1978

Amoco Production Company
P. O. Box 3092
Houston, Texas 77001

Attention: J. L. Hoyt, Jr.

Re: Case No. 4578
Empire South Deep Unit
Fifth and Sixth Expansions
of the Morrow Participating
Area

Gentlemen:

We hereby approve your Fifth and Sixth Expansions of the Morrow Participating Area for the Empire South Deep Unit, Eddy County, New Mexico, as revised by the attachments contained in your letter of March 20, 1978, subject to like approval by the United States Geological Survey and the Commissioner of Public Lands.

One approved copy of the Expansions is returned herewith.

Very truly yours,

JOE D. RAMEY
Director

JDR/LT/fd
enc.

cc: U.S.G.S. - Roswell
Commissioner of Public Lands

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Y



Amoco Production Company

500 Jefferson Building
P.O. Box 3092
Houston, Texas 77001

March 20, 1978

File: CGF(10)-964-416 X LF

Re: Empire South Deep Unit
Development and Operation
Eddy County, New Mexico

W. 11-75

Mr. Carl C. Traywick (3)
Area Oil & Gas Supervisor
United States Department of
the Interior
Geological Survey
P. O. Drawer 1857
Roswell, NM 88201

Mr. Phil R. Lucero (3)
Commissioner of Public Lands
State of New Mexico
P. O. Box 1148
Santa Fe, NM 87501

Mr. James E. Kapteine (3)
New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, NM 87501

Gentlemen:

Amoco Production Company, as operator of the Empire South Deep Unit, Eddy County, New Mexico, No. 14-08-0001-11571, respectively requests approval of two expansions of the Morrow participating area and a 1978 plan of development calling for one additional Morrow well.

5th

Amoco filed in February, 1977, a proposal for the fifth expansion of Morrow participating area to include the NW/4 of Section 8, the S/2 of Section 5, and the NW/4 of Section 5 (excluding the 40 acres surrounding Well No. 9), T-18-S, R-29-E. The fifth expansion was recommended on the basis of an excellent producer encountered at Well No. 12. It should be noted that the fifth expansion was proposed prior to the drilling of Wells Nos. 14, 15, and 16 and commercial productivity of the acreage was based on Well No. 12 which was a 4000 MCF/D producer. Well No. 14 showed good clean sands; however, a low initial rate (approximately 400 MCF/D) resulted. Buildup tests are now being conducted to determine if damage or depletion is the cause of low productivity in Well No. 14. Thus, we are formally recommending that the fifth expansion be revised to include the SW/4 and

the W/2 of the SE/4 of Section 5 and the NW/4 of Section 8. Non-inclusion of the E/2 of the SE/4 of Section 5 into a participating area is a result of insufficient data, at this time, to support its inclusion. The E/2 of the SE/4 and the N/2 of Section 5 will be evaluated and a recommendation to propose their inclusion into a participating area will be made at a later date. This proposed fifth revision is also graphically depicted on attached Exhibit "A". Furthermore, the complete allocation schedule for all the affected unit acreage after the fifth revision is tabulated on three typewritten sheets included as Attachment No. 2.

It is to be noted that the five-year automatic elimination date as stated on Page 4 of the Unit Agreement was November 29, 1976. However, this is to advise that this date was extended as outlined on Page 5 of the Unit Agreement by our Well No. 12 which, on that date, was drilling on lands not then entitled to participation. Well No. 14 was then spudded to extend this date and was completed on August 23, 1977. Since completion of Well No. 14 allowed us an additional 90-day period to spud another well, we spudded Well No. 15 in the NW/4 of Section 8. This acreage was not entitled to participation. As you will recall, in our meeting on September 30, 1977, attended by Messrs. Stover, Cherry, and Ms. Buchanan of this office, we became aware that the USGS considered Well No. 15 to be located on acreage entitled to participation by virtue of being in the proposed fifth expansion (even though it was not yet approved). With this in mind, Amoco proposed drilling Well No. 17, which was spudded November 10, 1977, in an effort to continue the prudent and timely development in the unit and fulfill our continuous drilling obligation. This well was plugged and abandoned on December 29, 1977.

WHL
We are also recommending a sixth expansion of the Morrow participating area to include Lots 1, 2, and 3, E/2 NW/4, NE/4 SW/4, NE/4 and the N/2 of the SE/4 of Section 30, T-17-S, R-29-E, based on commercial production established by Well No. 13 and the continuity of sands observed on the cross section from Wells Nos. 7 and 13 and from the commercial production established by the Pennzoil well in Section 24. The initial flow rate of Well No. 13 was 3.4 MMCF/D with logs indicating 2.3 BCF of reserves by pore volume calculations. This well has not been placed on line as yet due to right-of-way clearances. Well No. 7 was never tested in the Morrow, but logs have shown it to have about 1 BCF of reserves by pore volume calculations. A 1 BCF reserve level with an initial producing rate of 1 MMCF/D (declining at a rate of 53.84% per year) based on a 70% success probability would result in a payout of the initial investment in 24 months at \$1.50/MMBTU. Reserves would be depleted in this well in six years. The Pennzoil well in Section 24 has a reserve level of 2.2 BCF from P/Z analysis. We feel that all the acreage in Section 30 is productive and should be placed in the proposed sixth expansion. The acreage is described in detail on Attachment No. 3. This proposed sixth expansion is also graphically depicted on Exhibit "A". The complete allocation schedule for all the affected unit acreage after the sixth revision is tabulated on the typewritten sheets included as Attachment No. 4.

Page 3
March 20, 1978

We respectfully request that a 1978 plan of development be approved calling for one additional Morrow well. This well will be located in Section 30 to be drilled by Harvey Yates. Also, two Wolfcamp tests may be considered contingent upon Wolfcamp performance from Well No. 8. Since we have no other development plans for the unit for 1978 and since Yates cannot get a rig to drill the well in Section 30 by March 30, 1977, it is necessary that approval be obtained for our expansions of participating area by the end of this month. These requests have been discussed with the Roswell office and was felt to be acceptable.

Your favorable consideration of the foregoing will be accepted.


Yours very truly,

J. L. Hoyt, Jr.
Production Coordination Superintendent

JMC/caw
1/6392

Attachments

cc: Mr. V. E. Staley
Levelland, TX

Approved..... 4/18..... 1978

 Secretary-Director
 NEW MEXICO OIL CONSERVATION COMMISSION

1. The first step in the process is to identify the problem or issue that needs to be addressed. This involves gathering information and understanding the context of the problem.

PROPOSED FIFTH MORROW PARTICIPATING AREA EXPANSION

EMPIRE SOUTH DEEP UNIT

EDDY COUNTY, NEW MEXICO

EFFECTIVE 1-1-77

<u>Unit Tract No.</u>	<u>Acreage Description</u>	<u>Lease No.</u>	<u>Participating Acres</u>
10	T-18S, R-29E Sec. 8: NW/4 NW/4.	LC-058603	40.0
12	T-18S, R-29E Sec. 8: E/2 NW/4, SW/4 NW/4.	LC-061702	120.0
42	T-18S, R-29E Sec. 5: NE/4 SW/4, SW/4 SE/4.	Fee-HBP	80.0
43	T-18S, R-29E Sec. 5: NW/4 SW/4, SE/4 SW/4.	Fee-HBP	80.0
44	T-18S, R-29E Sec. 5: NW/4 SE/4, SW/4 SW/4.	Fee-HBP	<u>80.0</u>
TOTAL			400.00

ALLOCATION SCHEDULE
INITIAL PLUS FIRST, SECOND, THIRD, FOURTH, AND FIFTH REVISIONS OF MORROW PARTICIPATING AREA
EMPIRE SOUTH DEEP UNIT

EFFECTIVE 7-1-77

<u>Tract No.</u>	<u>Description</u>	<u>Lease No.</u>	<u>Participating Acres</u>	<u>% of Participating Area</u>	<u>Working Interest Owners</u>	<u>%</u>
Tr. 2	T-18S, R-29E Sec. 7: Lot 1 (NW/4 NW/4, 30.22 ac) NE/4 NW/4, Lot 2 (SW/4 NW/4, 30.37 ac) SE/4 NW/4.	LC-028772(a)	140.59	4.2809684	Amoco Production Company Harvey E. Yates Company Continental Oil Company Depco, Inc. Husky Oil Company of Delaware General American Oil Company of Texas	32.821910 14.218750 7.895140 6.314060 6.314060
Tr. 2-A	T-18S, R-28E Sec. 12: NE/4.	NM-23413	160.00	4.8720033		
Tr. 3	T-18S, R-29E Sec. 7: N/2 NE/4.	LC-028772(c)	80.00	2.4360017	Tenneco Oil Company Shinnery Investment Company Hondo Oil & Gas Company	6.105035 3.569535 3.281250
Tr. 4	T-18S, R-29E Sec. 7: S/2 NE/4.	LC-028772(d)	80.00	2.4360017	Cities Service Oil Company Yates Petroleum Company Harold Kersey	2.720435 2.012940 1.964760
Tr. 6	T-18S, R-29E Sec. 6: Lots 3 & 4, NE/4 SW/4.	NM-23414	99.93	3.0428706	Bassett-Birney Oil Corporation Bright, Shift and Kennedy Me-Tex Supply Company J. Cleo Thompson, Sr. James Cleo Thompson, Jr. Charlene K. Seay I & L Development Company Sam Lett M. W Smith Kathleen Miller Atlantic Richfield Company O. H. Randell Estate Donald Brown Earl A. Latimer, Jr. Featherstone Farms, Ltd.	1.744540 1.610350 1.207760 1.207760 1.073460 1.073460 .603880 .536890 .536890 .402585 .402585 .402585 .402585 .201295 .150970 .150965
Tr. 6-A	T-18S, R-29E Sec. 6: SE/4.	LC-058126	160.00	4.8720033		
Tr. 6-B	T-18S, R-29E Sec. 6: SE/4 SW/4.	LC-058126	40.00	1.2180008		
Tr. 9	T-18S, R-29E Sec. 6: E/2 NE/4.	LC-058582	80.00	2.4360017		
Tr. 10	T-18S, R-29E Sec. 8: NW/4 NW/4.	LC-058603	40.00	1.2180008		
Tr. 12	T-18S, R-29E Sec. 8: E/2 NW/4, SW/4 NW/4.	LC-061702	120.00	3.6540025		
Tr. 13-A	T-17S, R-29E Sec. 30: S/2 SE/4 Sec. 31: Lot 4 (SW/4 SW/4, 29.32 ac)	LC-062407	109.34	3.3294053		
Tr. 14	T-18S, R-29E Sec. 6: NW/4 NE/4.	LC-065374-A	40.00	1.2180008		

Tract No.	Description	Lease No.	% of Participating		Working Interest Owners %
			Acres	Area	
Tr. 15	T-18S, R-29E Sec. 6: SW/4 NE/4.	NM-0926 (KGS)	40.00	1.2180008	Robert E. Boling .100650 C. F. Qualia .100645 Mark D. Wilson .100645 A. J. Losee .100645 Roland Mclean .050325 Charles W. Hicks .050325 Trust for Olen F. Featherstone II .050325 H. B. McGrady .025160 Charles C. Harlan, Jr. .025160 Margaret Holcomb .033550 Greta M. Edgington .402585 Thelma Methvin .033550
Tr. 17	T-17S, R-29E Sec. 31: Lot 1 (NW/4 NW/4, 28.63 acres) NE/4 NW/4, N/2 NE/4, T-17S, R-29E Sec. 31: Lot 2 (SW/4 NW/4 28.86 acres) SE/4 NW/4, NE/4 SW/4, S/2 NE/4, N/2 SE/4.	NM-0555569	417.49	12.7125793	TOTAL 100.000000
Tr. 17-A	T-17S, R-29E Sec. 31: Lot 3 (NW/4 SW/4, 29.09 acres).	NM-0555569	29.09	0.8857911	
Tr. 18	T-18S, R-29E, Sec. 6: Lots 1, 2 (W/2 NW/4).	NM-0558119 (KGS)	59.23	1.8035547	
Tr. 19	T-18S, R-29E Sec. 6: E/2 NW/4.	NM-0560401 (KGS)	80.00	2.4360017	
Tr. 20	T-17S, R-28E Sec. 36: SE/4 NE/4, NE/4 SE/4, NE/4 NE/4, W/2 NE/4, NW/4 SE/4.	647-368	240.00	7.3080051	
Tr. 21	T-18S, R-28E Sec. 1: NE/4 SE/4, NW/4 NW/4, SW/4 SW/4, NW/4 SE/4.	2029-6	160.00	4.8720033	
Tr. 24	T-17S, R-29E Sec. 31: SE/4 SW/4.	B-4458-33	40.00	1.2180008	
Tr. 25	T-17S, R-29E Sec. 32: NW/4 SW/4.	B-4918-85	40.00	1.2180008	
Tr. 31	T-17S, R-29E Sec. 30: Lot 4 (SW/4 SW/4, 28.40 acres) SE/4 SW/4.	E-7596-Orig.	68.40	2.0827814	
Tr. 32	T-17S, R-29E Sec. 32: SW/4 NW/4.	E-7640	40.00	1.2180008	
Tr. 33	T-17S, R-28E Sec. 36: SE/4 SE/4	B-11593-8	40.00	1.2180008	

Tract No.	Description	Lease No.	Participating	% of Participating Area
			Acres	
Tr. 34	T-17S, R-29E Sec. 32: NW/4 NW/4.	E-537-5	40.00	1.2180008
Tr. 35	T-17S, R-28E Sec. 36: SW/4 SE/4.	E-949-0rig.	40.00	1.2180008
Tr. 36	T-18S, R-28E Sec. 1: W/2 NE/4, E/2 NW/4, SW/4 NW/4, N/2 SW/4, SE/4 SW/4, SW/4 SE/4.	E-1284-3	360.00	10.9620076
Tr. 37	T-17S, R-29E Sec. 31: S/2 SE/4.	E-4201-0rig.	80.00	2.4360017
Tr. 38	T-18S, R-28E Sec. 1: E/2 NE/4.	E-6946	80.00	2.4360017
Tr. 40	T-18S, R-28E Sec. 1: SE/4 SE/4.	L-1645-1	40.00	1.2180008
Tr. 42	T-18S, R-29E Sec. 5: NE/4 SW/4, SW/4 SE/4.	Fee HBP	80.00	2.4360017
Tr. 43	T-18S, R-29E Sec. 5: NW/4 SW/4, SE/4 SW/4.	Fee-HBP	80.00	2.4360017
Tr. 44	T-18S, R-29E Sec. 5: NW/4 SE/4, SW/4 SW/4.	Fee-HBP	80.00	2.4360017
TOTAL			3284.07	100.0000000

PROPOSED SIXTH MORROW PARTICIPATING AREA EXPANSION

EMPIRE SOUTH DEEP UNIT

EDDY COUNTY, NEW MEXICO

EFFECTIVE 4-1-77

<u>Unit Tract No.</u>	<u>Acreage Description</u>	<u>Lease No.</u>	<u>Participating Acres</u>
1	T-17-S, R-29-E, Sec. 30: NE/4	LC-028480(a)	160.00
13	T-17-S, R-29-E, Sec. 30: N/2 SE/4	LC-062407	80.00
37	T-17-S, R-29-E, Sec. 30: E/2 NW/4; Lots 1, 2, 3	E-4201	164.56
41	T-17-S, R-29-E, Sec. 30: NE/4 SW/4	OG-181-1	<u>40.00</u>
TOTAL			444.56

ALLOCATION SCHEDULE
INITIAL PLUS FIRST, SECOND, THIRD, FOURTH, FIFTH, AND SIXTH REVISIONS OF MORROW PARTICIPATING AREA
EMPIRE SOUTH DEEP UNIT
EFFECTIVE 4-1-77

Tract No.	Description	Lease No.	Participating	% of Participating Area	Working Interest Owners	%
			Acres			
Tr. 1	T-17S, R-29E Sec. 30: NE/4	LC-028480(a)	160.00	4.2911203	Amoco Production Company	32.821910
Tr. 2	T-18S, R-29E Sec. 7: Lot 1 (NW/4 NW/4, 30.22 ac.) NE/4 NW/4, Lot 2 (SW/4 NW/4, 30.37 ac.) SE/4 NW/4.	LC-028772 (a)	140.59	3.7705538	Harvey E. Yates Company	14.218750
					Continental Oil Company	7.895140
Tr. 2-A	T-18S, R-29E, Sec. 12: NE/4	NM-23413	160.00	4.2911203	Depco, Inc.	6.314060
					Husky Oil Company of Delaware	6.314060
Tr. 3	T-18S, R-29E, Sec. 7: N/2 NE/4.	LC-028772(c)	80.00	2.1455602	General American Oil Company of Texas	6.105035
					Tenneco Oil Company	3.569535
Tr. 4	T-18S, R-29E Sec. 7: S/2 NE/4.	LC-028772(d)	80.00	2.1455602	Shinnery Investment Company	3.281250
					Hondo Oil & Gas Company	2.720435
Tr. 6	T-18S, R-29E Sec. 6: Lots 3 & 4, (W/2 SW/4) E/2 SW/4.	LC-058126	99.93	2.6800723	Cities Service Oil Company	2.012940
					Yates Petroleum Company	1.964760
Tr. 6-B	T-18S, R-29E Sec. 6: SE/4 SW/4	LC-058126	40.00	1.0727801	Harold Kersey	1.744540
					Bassett-Birney Oil Corporation	1.610350
Tr. 6-A	T-18S, R-29E Sec. 6: SE/4.	LC-058126	160.00	4.2911203	Bright, Schiff and Kennedy	1.207760
					Me-Tex Supply Company	1.207760
Tr. 9	T-18S, R-29E Sec. 6: E/2 NE/4.	LC-058582	80.00	2.1455602	J. Cleo Thompson, Sr.	1.073460
					James Cleo Thompson, Jr.	1.073460
Tr. 10	T-18S, R-29E Sec. 8: NW/4 NW/4.	LC-058603	40.00	1.0727801	Charlene K. Seay	.603880
					I & L Development Co.	.536890
Tr. 12	T-18S, R-29E Sec. 8: E/2 NW/4, SW/4 NW/4	LC-061702	120.00	3.2183402	Sam Lett	.536890
					M. W. Smith	.402585
Tr. 13	T-17S, R-29E, Sec. 30: N/2 SE/4	LC-062407	80.00	2.1455602	Kathleen Miller	.402585
					Atlantic Richfield Company	.402585
Tr. 13-A	T-17S, R-29E Sec. 30: S/2 SE/4 Sec. 31: Lot 4 (SW/4 SW/4, 29.32 ac.)	LC-062407	109.34	2.9324444	O. H. Randall Estate	.402585
					Donald Brown	.201295
Tr. 14	T-18S, R-29E Sec. 6: NW/4 NE/4.	LC-065374-A	40.00	1.0727801	Earl A. Latimer, Jr.	.150970
					Featherstone Farms, Ltd.	.150965
					Robert E. Boling	.100650
					C. F. Qualia	.100645
					Mark D. Wilson	.100645
					Roland Mclean	.050325

Tract No.	Description	Lease No.	% of Participating		Working Interest Owners %
			Acres	Participating Area	
Tr. 15	T-18S, R-29E Sec. 6: SW/4 NE/4.	NM-9026 (KGS)	40.0	1.0727801	Charles W. Hicks Trust for Olen F. Featherstone II
Tr. 17	T-17S, R-29E Sec. 31: Lot 1 (NW/4 NW/4, 28.63 acres) NE/4 NW/4, N/2 NE/4, T-17S, R-29E NW/4, N/2 NE/4, T-17S, R-29E Sec. 31: Lot 2 (SW/4 NW/4 28.86 acres) SE/4 NW/4, NE/4 SW/4, S/2 NE/4, N/2 SE/4.	NM-0555569	417.49	11.1968738	H. B. McGrady Charles C. Harlan, Jr. Margaret Holcomb Greta M. Edgington Thelma Methvin
Tr. 17-A	T-17S, R-29E Sec. 31: Lot 3 (NW/4 SW/4, 29.09 acres)	NM-0555569	29.09	.7801793	
Tr. 18	T-18S, R-29E, Sec. 6: Lots 1,2 (W/2 NW/4).	NM-0558119 (KGS)	59.23	1.5885191	
Tr. 19	T-18S, R-29E, Sec. 6: E/2 NW/4.	NM-0560401 (KGS)	80.00	2.1455602	
Tr. 20	T-17S, R-28E Sec. 36: SE/4 NE/4 NE/4 SE/4, NE/4 NE/4, W/2 NE/4, NW/4 SE/4.	647-368	240.00	6.4366804	
Tr. 21	T-18S, R-28E Sec. 1: NE/4 SE/4, NW/4 NW/4, SW/4 SW/4, NW/4 SE/4.	2029-6	160.00	4.2911203	
Tr. 24	T-17S, R-29E Sec. 31: SE/4 SW/4.	B-4458-33	40.00	1.0727801	
Tr. 25	T-17S, R-29E Sec. 32: NW/4 SW/4.	B-4918-85	40.00	1.0727801	
Tr. 31	T-17S, R-29E Sec. 30: Lot 4 (SW/4 SW/4, 28.40 acres) SE/4 SW/4.	E-7596-Orig.	68.40	1.8344539	
Tr. 32	T-17S, R-29E Sec. 32: SW/4 NW/4.	E-7640	40.00	1.0727801	
Tr. 33	T-17S, R-28E Sec. 36: SE/4 SE/4.	B-11593-8	40.00	1.0727801	

TOTAL	100.0000000
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Tract No.	Description	Lease No.	Participating Acres	% of Participating Area
Tr. 34	T-17S, R-29E Sec. 32: NW/4 NW/4.	E-537-5	40.00	1.0727801
Tr. 35	T-17S, R-28E Sec. 36: SW/4 SE/4.	E-949-Orig.	40.00	1.0727801
Tr. 36	T-18S, R-28E Sec. 1: S/2 NE/4, E/2 NW/4, SW/4 NW/4, N/2 SW/4, SE/4 SW/4, SW/4 SE/4.	E-1284-3	360.00	9.6550206
Tr. 37	T-17S, R-29E, Sec. 30: Lots 1, 2, 3, E/2 NW/4.	E-4201-Orig.	164.56	4.4134173
Tr. 37	T-17S, R-29E Sec. 31: S/2 SE/4.	E-4201-Orig.	80.00	2.1455602
Tr. 38	T-18S, R-28E Sec. 1: E/2 NE/4.	E-6946	80.00	2.1455602
Tr. 40	T-18S, R-28E Sec. 1: SE/4 SE/4.	L-1645-1	40.00	1.0727801
Tr. 41	T-17S, R-29E, Sec. 30: NW/4 SW/4	OG-181-1	40.00	1.0727801
Tr. 42	T-18S, R-29E Sec. 5: NE/4 SW/4, SW/4 SE/4.	Fee-HBP	80.00	2.1455602
Tr. 43	T-18S, R-29E, Sec. 5: NW/4 SW/4, SE/4 SW/4.	Fee-HBP	80.00	2.1455602
Tr. 44	T-18S, R-29E Sec. 5: NW/4 SE/4, SW/4 SW/4.	Fee-HBP	80.00	2.1455602
		TOTAL	3728.63	100.0000000

JMC/slv
x/5114



43 75

Amoco Production Company

500 Jefferson Building
P.O. Box 3092
Houston, Texas 77001

April 26, 1977

**Re: Empire South Deep Unit
Eddy County, New Mexico**

**Mr. Carl C. Traywick (3)
Assistant Area Oil and Gas Supervisor
United States Department of the Interior
Geological Survey
P. O. Drawer 1857
Roswell, NM 88201**

**Mr. Phil R. Lucero (3)
Commissioner of Public Lands
State of New Mexico
P. O. Box 1148
Santa Fe, NM 87501**

**Mr. James E. Kepteina (3)
New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, NM 87501**

Gentlemen:

Based on decisions made by the U. S. Department of Interior, two leases within the boundary of the Empire South Deep Unit have been segregated. These changes are properly depicted by the attached map and on that portion of the participating schedule submitted February 21, 1977, by our letter, File: REO-1132-LF, which was affected.

Yours very truly,

A. R. Reed

**BAL/gh
2/3897**

Attachment

ALLOCATION SCHEDULE
INITIAL PLUS FIRST, SECOND, THIRD, AND FIFTH REVISIONS OF MORROW PARTICIPATING AREA
EMPIRE SOUTH DEEP UNIT

EFFECTIVE 1-1-77

Tract No.	Description	Lease No.	Participating Acres	% of Participating Area	Working Interest Owners %
Tr. 2	T-18S, R-29E Sec. 7: Lot 1 (NW/4 NW/4, 30.22 ac) NE/4 NW/4, Lot 2 (SW/4 NW/4, 30.37 ac.) SE/4 NW/4.	LC-028772(a)	140.59	4.0352462	Amoco Production Company Harvey E. Yates Company General American Oil Company of Texas 32.821910 14.218750
Tr. 2-A	T-18S, R-28E Sec. 12: NE/4.	NM-23413	160.00	4.592357	Continental Oil Company 6.105035
Tr. 3	T-18S, R-29E Sec. 7: N/2 NE/4.	LC-028772(c)	80.00	2.2961783	Tenneco Oil Company 7.895140
Tr. 4	T-18S, R-29E Sec. 7: S/2 NE/4.	LC-028772(d)	80.00	2.2961783	Shinnery Investment Company 3.569535
Tr. 6	T-18S, R-29E Sec. 6: Lots 3 & 4, NE/4 SW/4.	NM-23414	99.93	2.8682136	Depco, Inc. 3.281250
Tr. 6-A	T-18S, R-29E Sec. 6: SE/4.	LC-058126	160.00	4.592357	Husky Oil Company of Delaware 6.314060
Tr. 6-B	T-18S, R-29E Sec. 6: SE/4 SW/4.	LC-058126	40.00	1.1480891	Hondo Oil & Gas Company 6.314060
Tr. 7	T-18S, R-29E Sec. 5: SE/4 NW/4.	LC-058580	40.00	1.1480891	Cities Service Oil Company 2.720435
Tr. 9	T-18S, R-29E Sec. 6: E/2 NE/4.	LC-058582	80.00	2.2961783	Bright, Shiff and Kennedy 2.012940
Tr. 10	T-18S, R-29E Sec. 8: NW/4 NW/4.	LC-058603	40.00	1.1480891	Me-Tex Supply Company 1.207760
Tr. 11	T-18S, R-29E Sec. 5: SW/4 NW/4.	LC-060888	40.00	1.1480891	J. Cleo Thompson, Sr. 1.207760
Tr. 12	T-18S, R-29E Sec. 8: E/2 NW/4, SW/4 NW/4.	LC-061702	120.00	3.4442674	James Cleo Thompson, Jr. 1.073780
Tr. 13-A	T-17S, R-29E Sec. 30: S/2 SE/4 Sec. 31: Lot 4 (SW/4 SW/4, 29.32 ac.).	LC-062407	109.32	3.1377275	I&L Development Company 1.073460
Tr. 14	T-18S, R-29E Sec. 6: NW/4 NE/4.	LC-065374-A	40.00	1.1480891	Sam Lett .536570