



State of New Mexico
ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT
Santa Fe, New Mexico 87505

OIL CONSERVATION DIVISION



January 18, 1995

ARCO Permian
c/o Campbell, Carr, Berge & Sheridan, P. A.
P. O. Box 2208
Santa Fe, New Mexico 87504-2208
Attn: William F. Carr

Administrative Order DD-103(H)
Horizontal Drainhole

Dear Mr. Carr:

Under the provisions of the Special Rules and Regulations for the Empire-Abo Pressure Maintenance Project, as promulgated by Division Order No. R-4549, as amended, ARCO Permian made application to the New Mexico Oil Conservation Division on December 27, 1994 for a high angle/short radius horizontal drainhole to be drilled in the Empire-Abo Pressure Maintenance Project, Empire-Abo Unit Area, Empire-Abo Pool, Eddy County, New Mexico.

Now on this 17th day of January, 1995, the Division Director finds that:

(1) The application has been duly filed under the provisions of Rules 14 B., 14 C., and 14 D. of said Order No. R-4549, as amended, for administrative authorization to drill a high angle/short radius horizontal drainhole within the wellbore of its existing Empire Abo Unit "K" Well No. 16 (API No. 30-015-00717), located 1980 feet from the South line and 660 feet from the East line (Unit I) of Section 2, Township 18 South, Range 27 East, NMPM, Eddy County, New Mexico.

(2) The applicant proposes to kick-off from the existing vertical wellbore at a depth of approximately 6,025 feet with a short radius curve and drill horizontally within the Abo formation in a southerly direction a lateral distance of 1,000 feet.

(3) Said well and projected drainhole will be no closer than 330 feet to the outer boundary of the Empire-Abo Unit Area, as required by said Rule 14.B; therefore, correlative rights of other off-set operators should be adequately protected from any adverse effects caused by the drilling of the subject drainhole.

(4) The Division having reviewed the subject application, supplemented by OCD records in Santa Fe, all requirements prescribed in said Rules 14. B, C, and D have been met.

(5) The subject application should be approved and the well should be governed by the provisions contained within this order and all other provisions of the Special Rules and Regulations for the Empire-Abo Pressure Maintenance Project, as promulgated by Division Order No. R-4549, as amended.

IT IS THEREFORE ORDERED THAT:

(1) ARCO Permian is hereby authorized to recomplete its existing Empire Abo Unit "K" Well No. 16 (API No. 30-015-00717), located 1980 feet from the South line and 660 feet from the East line (Unit I) of Section 2, Township 18 South, Range 27 East, NMPM, Eddy County, New Mexico, by kick-off from the vertical wellbore at a depth of approximately 6,025 feet in a southerly direction with a high angle radius curve, build to an angle of 90 degrees and continue drilling a horizontal drainhole in the Abo formation a lateral distance of 1,000 feet.

PROVIDED HOWEVER THAT: Prior to directional drilling operations, the ARCO Permian shall determine the subsurface location of the kick-off point in said well; and,

PROVIDED HOWEVER THAT: Subsequent to the above-described directional drilling, a survey shall be made of the wellbore from total depth to kick-off point. The operator shall forward a copy of the survey report directionally to the Santa Fe Office and to the Artesia District Office of the Division.

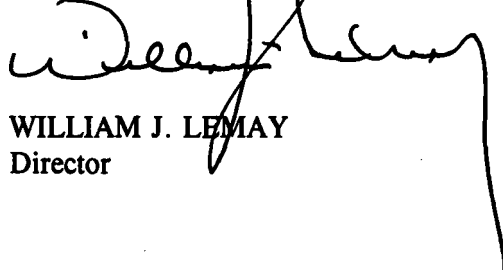
(2) The operator shall notify the Division's Artesia District Office of the date and time said survey is to be commenced.

(3) Form C-105 shall be filed in accordance with Division Rule 1105 and the operator shall indicate thereon true vertical depth (TVD) in addition to measured depths (MVD).

(4) 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



WILLIAM J. LEMAY
Director

S E A L

cc: Oil Conservation Division - Artesia
U.S. BLM - Carlsbad
File Case No: 11193

Received 12-27-94
Released 1-17-95

NSL-ARCO.16

January 17, 1995

ARCO Permian
c/o Campbell, Carr, Berge & Sheridan, P. A.
P. O. Box 2208
Santa Fe, New Mexico 87504-2208
Attn: William F. Carr

103
Administrative Order DD-***(H)
Horizontal Drainhole

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Now on this 17th day of January, 1995, the Division Director finds that:

(1) The application has been duly filed under the provisions of Rules 14 B., 14 C., and 14 D. of said Order No. R-4549, as amended, for administrative authorization to drill a high angle/short radius horizontal drainhole within the wellbore of its existing Empire Abo Unit "K" Well No. 16 (API No. 30-015-00717), located 1980 feet from the South line and 660 feet from the East line (Unit I) of Section 2, Township 18 South, Range 27 East, NMPM, Eddy County, New Mexico.

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(3) Said well and projected drainhole will be no closer than 330 feet to the outer boundary of the Empire-Abo Unit Area, as required by said Rule 14.B; therefore, correlative rights of other off-set operators should be adequately protected from any adverse effects caused by the drilling of the subject drainhole.

(4) The Division having reviewed the subject application, supplemented by OCD records in Santa Fe, all requirements prescribed in said Rules 14. B, C, and D have been met.

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PROVIDED HOWEVER THAT: Prior to directional drilling operations, the ARCO Permian shall determine the subsurface location of the kick-off point in said well; and,

PROVIDED HOWEVER THAT: Subsequent to the above-described directional drilling, a survey shall be made of the wellbore from total depth to kick-off point. The operator shall forward a copy of the survey report directionally to the Santa Fe Office and to the Artesia District Office of the Division.

(2) The operator shall notify the Division's Artesia District Office of the date and time said survey is to be commenced.

(3) Form C-105 shall be filed in accordance with Division Rule 1105 and the operator shall indicate thereon true vertical depth (TVD) in addition to measured depths (MVD).

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

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

WILLIAM J. LEMAY
Director

*Administrative Order DD-***(H)*

*January *** , 1995*

Page No. 3

S E A L

cc: Oil Conservation Division - Artesia
U.S. BLM - Carlsbad
File Case No: 11193

5F
OIL CONSERVATION DIVISION
RECEIVED

'95 APR 19 PM 8.52

REPORT OF

***SUB-SURFACE
DIRECTIONAL
SURVEY***

ARCO PERMIAN

EMPIRE ABO K-16

EDDY COUNTY, NEW MEXICO

**BAKER HUGHES INTEQ
2105 MARKET STREET
MIDLAND, TX 79703**

ARCO

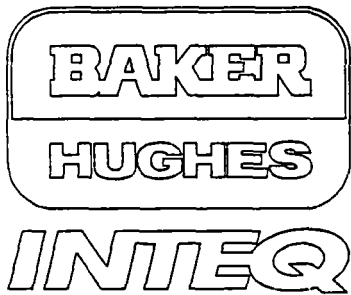
Structure : EMPIRE ABO UNIT #K-16

Field : EDDY COUNTY, NM.

Location : EDDY COUNTY, NM.



MAGNETIC DECLINATION
9.6 DEGREE EAST
DIP - 60.87



Scale 1 : 20.00

East -->

40 0 40 80 120 160 200 240 280 320 360 400 440

Scale 1 : 20.00

South -->

S/L 1980' FSL & 660' FEL
SEC. 2, T18S, R27E
EDDY CO., NEW MEXICO

<-- True Vertical Depth

Scale 1 : 20.00

5680
5720
5760
5800
5840
5880
5920
5960
6000
6040
6080
6120
6160
6200
6240

GYRO F/ SURFACE

KOP • 6029' TVD/ 6039' MD
N 256.6', W 24.7'

EOC • 6074' TVD/ 6105' MD
N 229.8', E 3.4'
VS= -160' • 135 DEG. AZ.

BHL • S 335.6', E 414' FROM S/L
TD • 6114.5' TVD/ 6813' MD
INC.= 81.6 DEG., AZ.= 153 DEG.
CLOSURE= 533' • 129 DEG.

TD • 6114.5' TVD/ 6813' MD
INC.= 81.6 DEG., AZ.= 153 DEG.
VS.= 530.1' • 135 DEG. AZ.

PROJECTION TO TD

Scale 1 : 20.00

Vertical Section on 135.00 azimuth with reference 0.00 N, 0.00 E from slot #1

ARCO
EMPIRE ABO UNIT #K-16

slot #1
EDDY COUNTY, NM.
EDDY COUNTY, NM.

S U R V E Y L I S T I N G

by
Baker Hughes INTEQ

Your ref :
Our ref : svy405
License :

Date printed : 13-Feb-95
Date created : 27-Jan-95
Last revised : 13-Feb-95

Field is centred on 0.000,0.000,0.00000,N
Structure is centred on n32 46 28.128,w104 14 32.820,0

Slot location is n32 46 28.128,w104 14 32.820
Slot Grid coordinates are N 645478.774, E 527933.980
Slot local coordinates are 0.00 N 0.00 E
Reference North is True North

ARCO
EMPIRE ABO UNIT #K-16, slot #1
EDDY COUNTY, NM., EDDY COUNTY, NM.

SURVEY LISTING Page 1
Your ref :
Last revised : 13-Feb-95

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert. Depth	R E C T A N G U L A R C O O R D I N A T E S	Dogleg Deg/100Ft	Vert Sect
0.00	0.00	0.00	0.00	0.00 N	0.00 E	0.00
100.00	0.28	29.50	100.00	0.21 N	0.12 E	-0.06
200.00	0.34	39.57	200.00	0.65 N	0.43 E	-0.16
300.00	0.21	39.78	300.00	1.02 N	0.74 E	-0.20
400.00	0.15	27.16	400.00	1.28 N	0.91 E	-0.26
500.00	0.19	36.15	500.00	1.53 N	1.07 E	-0.32
600.00	0.42	346.09	599.99	2.02 N	1.08 E	-0.66
700.00	0.59	324.60	699.99	2.80 N	0.69 E	-1.49
800.00	1.29	346.17	799.98	4.31 N	0.13 E	-2.96
900.00	1.23	350.00	899.95	6.46 N	0.33 W	-4.80
1000.00	1.26	352.65	999.93	8.61 N	0.66 W	-6.55
1100.00	1.32	352.06	1099.90	10.84 N	0.96 W	-8.34
1200.00	1.33	347.74	1199.88	13.11 N	1.36 W	-10.23
1300.00	1.22	349.65	1299.85	15.29 N	1.80 W	-12.09
1400.00	1.24	347.81	1399.83	17.40 N	2.22 W	-13.87
1500.00	1.23	347.50	1499.81	19.50 N	2.68 W	-15.69
1600.00	1.11	355.69	1599.78	21.52 N	2.98 W	-17.32
1700.00	1.15	357.77	1699.76	23.49 N	3.10 W	-18.80
1800.00	1.11	13.39	1799.75	25.43 N	2.91 W	-20.04
1900.00	0.99	20.43	1899.73	27.18 N	2.38 W	-20.91
2000.00	1.05	22.25	1999.71	28.84 N	1.74 W	-21.62
2100.00	1.09	20.97	2099.70	30.58 N	1.05 W	-22.36
2200.00	1.16	14.74	2199.68	32.44 N	0.45 W	-23.26
2300.00	1.19	7.14	2299.66	34.45 N	0.06 W	-24.41
2400.00	1.20	2.80	2399.63	36.53 N	0.12 E	-25.75

All data is in feet unless otherwise stated
Coordinates from slot #1 and TVD from wellhead.
Vertical section is from wellhead on azimuth 135.00 degrees.
Declination is 0.00 degrees, Convergence is 0.05 degrees.
Calculation uses the minimum curvature method.
Presented by Baker Hughes INTEQ

ARCO
EMPIRE ABO UNIT #K-16, slot #1
EDDY COUNTY, NM., EDDY COUNTY, NM.

SURVEY LISTING Page 2
Your ref :
Last revised : 13-Feb-95

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert. Depth	R E C T A N G U L A R C O O R D I N A T E S		Dogleg Deg/100Ft	Vert Sect
2500.00	1.20	3.73	2499.61	38.62 N	0.23 E	0.02	-27.14
2600.00	1.12	1.24	2599.59	40.64 N	0.32 E	0.09	-28.51
2700.00	1.11	3.52	2699.57	42.59 N	0.40 E	0.04	-29.83
2800.00	1.28	11.38	2799.55	44.65 N	0.68 E	0.24	-31.09
2900.00	1.38	11.47	2899.52	46.92 N	1.14 E	0.10	-32.37
3000.00	1.47	6.56	2999.49	49.38 N	1.53 E	0.15	-33.83
3100.00	1.44	4.83	3099.46	51.90 N	1.78 E	0.05	-35.44
3200.00	1.55	8.83	3199.43	54.49 N	2.10 E	0.15	-37.05
3300.00	1.69	5.55	3299.39	57.30 N	2.45 E	0.17	-38.78
3400.00	1.65	2.60	3399.34	60.20 N	2.65 E	0.09	-40.69
3500.00	1.59	1.00	3499.30	63.03 N	2.74 E	0.08	-42.63
3600.00	1.66	3.42	3599.26	65.86 N	2.85 E	0.10	-44.55
3700.00	2.00	358.30	3699.21	69.05 N	2.89 E	0.38	-46.78
3800.00	2.06	358.65	3799.15	72.59 N	2.79 E	0.06	-49.35
3900.00	2.35	357.97	3899.08	76.44 N	2.68 E	0.29	-52.15
4000.00	2.56	358.76	3998.98	80.72 N	2.56 E	0.21	-55.27
4100.00	2.78	358.07	4098.88	85.38 N	2.43 E	0.22	-58.65
4200.00	2.91	354.81	4198.75	90.33 N	2.12 E	0.21	-62.37
4300.00	3.20	354.66	4298.61	95.63 N	1.63 E	0.29	-66.47
4400.00	3.55	355.80	4398.44	101.50 N	1.14 E	0.36	-70.96
4500.00	4.17	354.24	4498.21	108.20 N	0.55 E	0.63	-76.12
4600.00	4.62	357.30	4597.92	115.85 N	0.00 W	0.51	-81.92
4700.00	4.57	354.37	4697.59	123.83 N	0.58 W	0.24	-87.98
4800.00	4.49	352.53	4797.28	131.68 N	1.48 W	0.16	-94.16
4900.00	4.39	348.70	4896.98	139.31 N	2.74 W	0.31	-100.45

All data is in feet unless otherwise stated
Coordinates from slot #1 and TVD from wellhead.
Vertical section is from wellhead on azimuth 135.00 degrees.
Declination is 0.00 degrees, Convergence is 0.05 degrees.
Calculation uses the minimum curvature method.
Presented by Baker Hughes INTEQ

ARCO
EMPIRE ABO UNIT #K-16, slot #1
EDDY COUNTY, NM., EDDY COUNTY, NM.

SURVEY LISTING Page 3
Your ref :
Last revised : 13-Feb-95

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert. Depth	R E C T A N G U L A R C O O R D I N A T E S		Dogleg Deg/100Ft	Vert Sect	
5000.00	4.92	347.02	4996.65	147.24 N	4.46 W	0.55	-107.27	
5100.00	6.30	347.03	5096.17	156.77 N	6.65 W	1.38	-115.56	
5200.00	6.69	348.25	5195.53	167.82 N	9.07 W	0.41	-125.08	
5300.00	6.68	350.73	5294.85	179.26 N	11.19 W	0.29	-134.67	
5400.00	6.83	347.58	5394.16	190.81 N	13.41 W	0.40	-144.40	
5500.00	6.80	349.06	5493.45	202.43 N	15.81 W	0.18	-154.32	
5600.00	6.91	348.88	5592.73	214.15 N	18.09 W	0.11	-164.22	
5700.00	5.87	349.29	5692.11	225.07 N	20.20 W	1.04	-173.44	
5800.00	5.61	350.31	5791.61	234.92 N	21.98 W	0.28	-181.65	
5900.00	5.32	352.44	5891.16	244.33 N	23.41 W	0.35	-189.32	
5970.00	5.45	352.36	5960.85	250.84 N	24.28 W	0.19	-194.54	
6015.00	5.50	350.97	6005.64	255.09 N	24.90 W	0.31	-197.98	
6039.00	2.41	41.97	6029.59	256.60 N	24.74 W	18.33	-198.94	KOP
6045.00	2.40	68.40	6035.58	256.74 N	24.54 W	18.33	-198.90	
6050.00	7.70	124.00	6040.56	256.59 N	24.17 W	132.88	-198.53	
6055.00	15.70	132.40	6045.46	255.95 N	23.39 W	163.17	-197.52	
6060.00	24.00	133.50	6050.15	254.79 N	22.15 W	166.16	-195.82	
6065.00	31.50	133.50	6054.58	253.19 N	20.46 W	150.00	-193.50	
6070.00	39.40	133.00	6058.64	251.20 N	18.35 W	158.10	-190.60	
6075.00	47.00	132.40	6062.29	248.88 N	15.84 W	152.22	-187.19	
6080.00	54.50	132.60	6065.45	246.27 N	12.98 W	150.03	-183.32	
6085.00	60.70	133.40	6068.13	243.39 N	9.90 W	124.73	-179.10	
6105.00	85.70	137.40	6073.86	229.84 N	3.40 E	126.43	-160.11	END OF CURVE
6115.00	91.40	140.40	6074.12	222.31 N	9.97 E	64.40	-150.15	
6125.00	92.90	144.20	6073.74	214.40 N	16.08 E	40.83	-140.24	

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Presented by Baker Hughes INTEQ

ARCO
EMPIRE ABO UNIT #K-16, slot #1
EDDY COUNTY, NM., EDDY COUNTY, NM.

SURVEY LISTING Page 4
Your ref :
Last revised : 13-Feb-95

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert. Depth	R E C T A N G U L A R C O O R D I N A T E S		Dogleg Deg/100Ft	Vert Sect
6135.00	93.20	146.40	6073.21	206.20 N	21.76 E	22.17	-130.41
6145.00	93.30	148.80	6072.64	197.77 N	27.12 E	23.98	-120.67
6155.00	92.90	151.40	6072.10	189.11 N	32.09 E	26.27	-111.03
6165.00	91.90	153.40	6071.68	180.26 N	36.72 E	22.34	-101.50
6175.00	91.40	156.00	6071.40	171.22 N	40.99 E	26.46	-92.09
6185.00	91.70	158.60	6071.12	162.00 N	44.85 E	26.16	-82.84
6195.00	91.80	159.70	6070.82	152.66 N	48.41 E	11.04	-73.72
6205.00	92.40	158.20	6070.45	143.33 N	52.00 E	16.15	-64.58
6215.00	91.80	155.60	6070.09	134.14 N	55.92 E	26.67	-55.31
6225.00	90.70	152.80	6069.87	125.14 N	60.27 E	30.08	-45.87
6235.00	89.80	149.60	6069.82	116.38 N	65.08 E	33.24	-36.27
6245.00	88.40	145.90	6069.98	107.93 N	70.42 E	39.55	-26.52
6255.00	87.80	142.80	6070.31	99.80 N	76.24 E	31.56	-16.66
6265.00	88.30	140.50	6070.65	91.97 N	82.44 E	23.52	-6.74
6275.00	88.40	138.20	6070.94	84.38 N	88.95 E	23.01	3.23
6285.00	87.50	135.50	6071.30	77.09 N	95.79 E	28.44	13.22
6295.00	85.90	134.10	6071.87	70.06 N	102.87 E	21.24	23.20
6305.00	83.80	132.70	6072.77	63.22 N	110.11 E	25.21	33.16
6315.00	81.60	132.90	6074.04	56.48 N	117.38 E	22.09	43.07
6325.00	80.40	133.70	6075.61	49.70 N	124.57 E	14.37	52.94
6335.00	80.90	134.70	6077.23	42.83 N	131.65 E	11.06	62.80
6345.00	82.10	135.50	6078.71	35.82 N	138.63 E	14.37	72.70
6355.00	83.40	137.60	6079.97	28.62 N	145.45 E	24.56	82.61
6365.00	83.10	142.20	6081.15	21.02 N	151.84 E	45.78	92.50
6375.00	82.70	144.60	6082.38	13.06 N	157.76 E	24.15	102.32

All data is in feet unless otherwise stated
Coordinates from slot #1 and TVD from wellhead.
Vertical section is from wellhead on azimuth 135.00 degrees.
Declination is 0.00 degrees, Convergence is 0.05 degrees.
Calculation uses the minimum curvature method.
Presented by Baker Hughes INTEQ

ARCO
EMPIRE ABO UNIT #K-16, slot #1
EDDY COUNTY, NM., EDDY COUNTY, NM.

SURVEY LISTING Page 5
Your ref :
Last revised : 13-Feb-95

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert. Depth	R E C T A N G U L A R C O O R D I N A T E S	Dogleg Deg/100Ft	Vert Sect
6385.00	82.90	147.40	6083.64	4.84 N 163.31 E	27.85	112.06
6395.00	83.80	149.10	6084.80	3.61 S 168.53 E	19.13	121.72
6405.00	85.40	151.10	6085.74	12.24 S 173.50 E	25.54	131.34
6415.00	85.80	153.40	6086.50	21.06 S 178.14 E	23.28	140.86
6425.00	86.20	155.30	6087.20	30.06 S 182.46 E	19.37	150.27
6435.00	84.80	154.00	6087.99	39.06 S 186.72 E	19.08	159.66
6445.00	85.40	151.90	6088.84	47.94 S 191.26 E	21.77	169.13
6455.00	86.90	149.80	6089.51	56.65 S 196.11 E	25.77	178.73
6465.00	87.90	146.60	6089.97	65.14 S 201.38 E	33.49	188.46
6475.00	88.10	143.90	6090.32	73.35 S 207.07 E	27.06	198.29
6485.00	87.50	140.70	6090.70	81.26 S 213.18 E	32.53	208.20
6495.00	87.10	138.20	6091.17	88.84 S 219.68 E	25.29	218.16
6505.00	86.70	135.40	6091.71	96.12 S 226.51 E	28.24	228.14
6515.00	85.50	131.40	6092.39	102.98 S 233.76 E	41.67	238.11
6525.00	83.40	128.40	6093.36	109.36 S 241.39 E	36.50	248.02
6535.00	83.90	127.10	6094.46	115.44 S 249.25 E	13.85	257.88
6545.00	85.10	128.90	6095.42	121.57 S 257.09 E	21.56	267.76
6555.00	86.00	131.90	6096.20	128.03 S 264.69 E	31.23	277.70
6565.00	86.40	134.30	6096.86	134.85 S 271.97 E	24.28	287.67
6575.00	85.90	137.70	6097.53	142.03 S 278.90 E	34.29	297.64
6585.00	84.50	140.30	6098.37	149.55 S 285.44 E	29.45	307.58
6595.00	83.30	142.30	6099.43	157.31 S 291.65 E	23.23	317.46
6605.00	83.20	144.50	6100.61	165.28 S 297.58 E	21.87	327.29
6615.00	84.70	146.20	6101.66	173.46 S 303.23 E	22.60	337.07
6625.00	86.10	148.60	6102.46	181.85 S 308.60 E	27.72	346.80

All data is in feet unless otherwise stated
Coordinates from slot #1 and TVD from wellhead.
Vertical section is from wellhead on azimuth 135.00 degrees.
Declination is 0.00 degrees, Convergence is 0.05 degrees.
Calculation uses the minimum curvature method.
Presented by Baker Hughes INTEQ

ARCO
EMPIRE ABO UNIT #K-16, slot #1
EDDY COUNTY, NM., EDDY COUNTY, NM.

SURVEY LISTING Page 6
Your ref :
Last revised : 13-Feb-95

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert. Depth	R E C T A N G U L A R C O O R D I N A T E S	Dogleg Deg/100Ft	Vert Sect	
6635.00	87.10	150.50	6103.06	190.46 S 313.66 E	21.44	356.46	
6645.00	87.80	153.00	6103.50	199.26 S 318.38 E	25.94	366.03	
6655.00	87.10	153.70	6103.95	208.19 S 322.87 E	9.89	375.51	
6665.00	86.10	151.30	6104.54	217.04 S 327.47 E	25.96	385.03	
6675.00	86.50	148.20	6105.19	225.66 S 332.50 E	31.19	394.68	
6685.00	86.80	145.10	6105.77	234.00 S 337.99 E	31.09	404.46	
6695.00	87.70	142.10	6106.25	242.04 S 343.92 E	31.29	414.33	
6705.00	88.60	139.80	6106.57	249.80 S 350.21 E	24.69	424.27	
6715.00	89.10	136.60	6106.78	257.25 S 356.88 E	32.38	434.25	
6735.00	88.70	136.40	6107.16	271.76 S 370.64 E	2.24	454.24	
6745.00	88.00	138.00	6107.45	279.09 S 377.43 E	17.46	464.23	
6755.00	87.00	140.80	6107.88	286.67 S 383.93 E	29.71	474.19	
6765.00	86.00	144.20	6108.49	294.59 S 390.01 E	35.38	484.08	
6785.00	82.40	149.90	6110.52	311.28 S 400.83 E	33.58	503.53	
6795.00	81.60	151.00	6111.91	319.89 S 405.71 E	13.51	513.08	
6813.00	81.60	153.00	6114.54	335.61 S 414.07 E	10.99	530.10	PROJECTION TO TD

All data is in feet unless otherwise stated
Coordinates from slot #1 and TVD from wellhead.
Vertical section is from wellhead on azimuth 135.00 degrees.
Declination is 0.00 degrees, Convergence is 0.05 degrees.
Calculation uses the minimum curvature method.
Presented by Baker Hughes INTEQ

ARCO
EMPIRE ABO UNIT #K-16, slot #1
EDDY COUNTY, NM., EDDY COUNTY, NM.

SURVEY LISTING Page 7
Your ref :
Last revised : 13-Feb-95

Comments in wellpath
=====

MD	TVD	Rectangular Coords.		Comment
6039.00	6029.59	256.60 N	24.74 W	KOP
6105.00	6073.86	229.84 N	3.40 E	END OF CURVE
6813.00	6114.54	335.61 S	414.07 E	PROJECTION TO TD

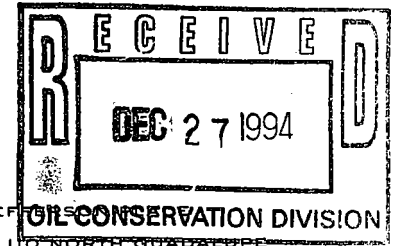
All data is in feet unless otherwise stated
Coordinates from slot #1 and TVD from wellhead.
Bottom hole distance is 533.00 on azimuth 129.02 degrees from wellhead.
Vertical section is from wellhead on azimuth 135.00 degrees.
Declination is 0.00 degrees, Convergence is 0.05 degrees.
Calculation uses the minimum curvature method.
Presented by Baker Hughes INTEQ

CAMPBELL, CARR, BERGE
& SHERIDAN, P.A.
LAWYERS

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JACK M. CAMPBELL
OF COUNSEL



JEFFERSON
SUITE 1 - 110 NORTH GUADALUPE

POST OFFICE BOX 2208
SANTA FE, NEW MEXICO 87504-2208

TELEPHONE: (505) 988-4421
TELECOPIER: (505) 983-6043

December 27, 1994

HAND-DELIVERED

William J. LeMay, Director
Oil Conservation Division
New Mexico Department of Energy,
Minerals and Natural Resources
2040 South Pacheco Street
Santa Fe, New Mexico 87505

Re: Application of ARCO Permian, a Unit of Atlantic Richfield, for
Administrative Approval of Horizontal Drainhole, Empire Abo Unit Area,
Eddy County, New Mexico

Dear Mr. LeMay:

ARCO Permian, a Unit of Atlantic Richfield ("ARCO"), pursuant to the provisions of Rule 6(b) of the Special Rules and Regulations for the Empire-Abo Unit Pressure Maintenance Project promulgated by Order No. R-4549, as amended, hereby makes application for a horizontal drainhole for its Empire Abo K-16 Well located 1980 feet from the South line and 660 feet from the East line of Section 2, Township 18 South, Range 27 East, N.M.P.M., Eddy County, New Mexico. This well is necessary to complete an efficient production pattern in the ARCO Empire-Abo Unit Area.

ARCO proposes to reenter the subject well, kick-off at a depth of approximately 6025 feet, use a short radius tool, and drill in a southerly direction until 800 feet of horizontal drainhole is drilled in the Abo formation.

In accordance with the provisions of Rule 6(b) of the Special Rules and Regulations for the Empire-Abo Unit Pressure Maintenance Project, attached hereto are the following:

1. Plats identifying the lands committed to the unit agreement and those lands not committed to said agreement showing the location of the proposed well, all wells within the unit area, and the two offset operators, and

William J. LeMay, Director

December 27, 1994

Page 2

2. Schematic drawings of the proposed well which fully describes the casing, tubing, perforated or openhole interval, kick-off point, and proposed trajectory of the drainhole section.

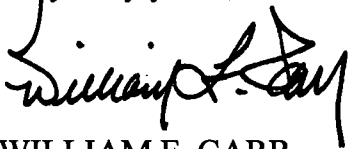
This well will be located more than 330 feet from the outer boundary of the unit and the boundary of any tract not committed to the unit.

All offset operators to the proposed horizontal drainhole have been furnished a complete copy of the application by certified mail, return receipt requested; have been advised that this application was filed on this date; and have been advised that if no objection to this application is received by the Division Director within twenty (20) days of this date, this application may be approved.

This application is being filed in triplicate with the Division's Santa Fe office and one copy has been mailed to the Oil Conservation Division District II office in Artesia.

Your consideration of this application is appreciated.

Very truly yours,



WILLIAM F. CARR

Attorney for ARCO Permian, a Unit of Atlantic Richfield

WFC:mlh

Enclosures

cc: Oil Conservation Division
District II
Post Office Drawer DD
Artesia, New Mexico 88210

Gary Smallwood
ARCO Permian, a Unit of Atlantic Richfield
Post Office Box 1610
Midland, TX 79702

EMPIRE ABO POOL

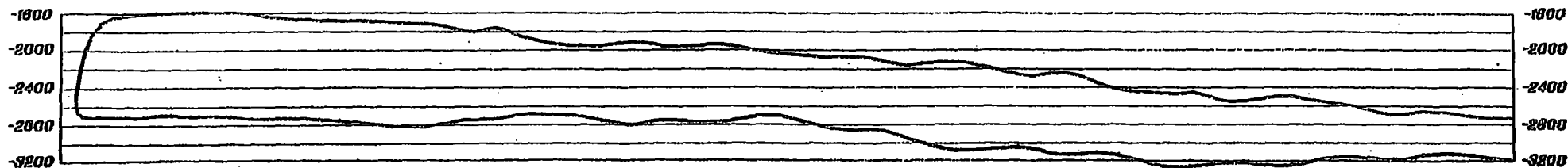
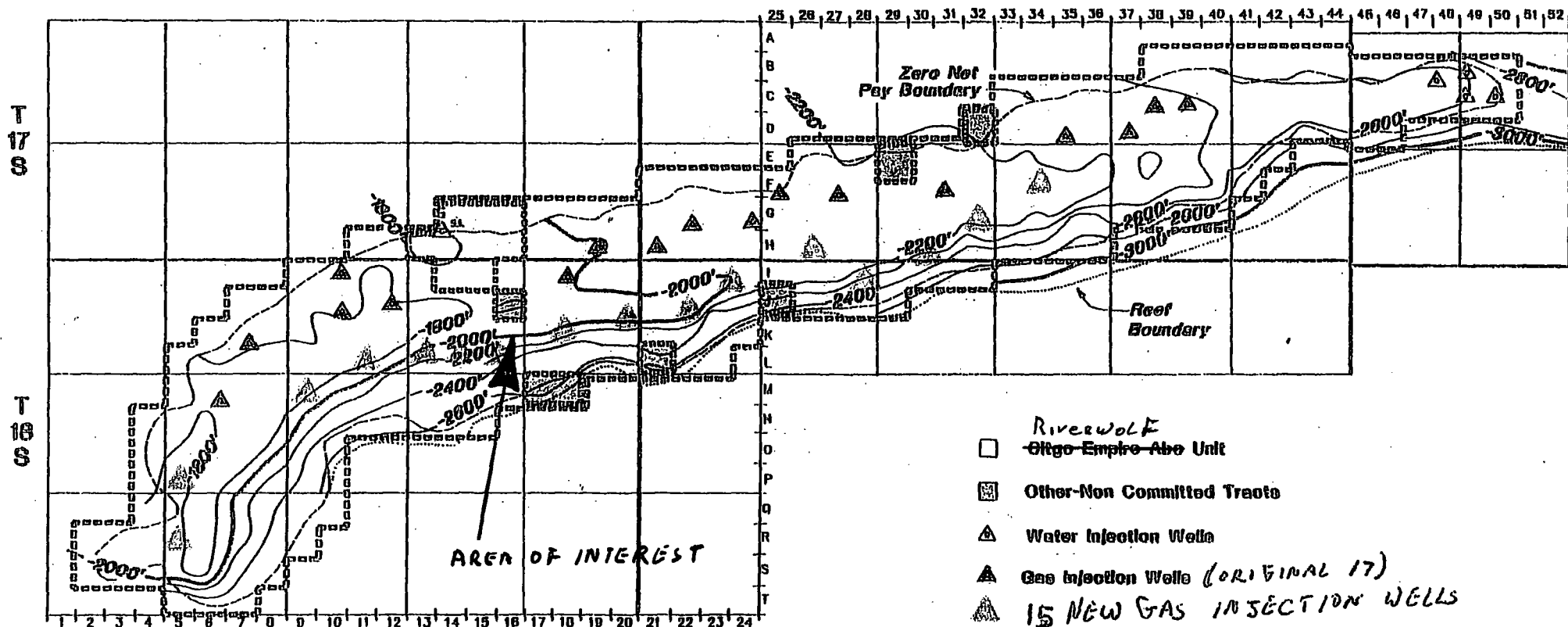
Eddy County, New Mexico

Top Of Reef

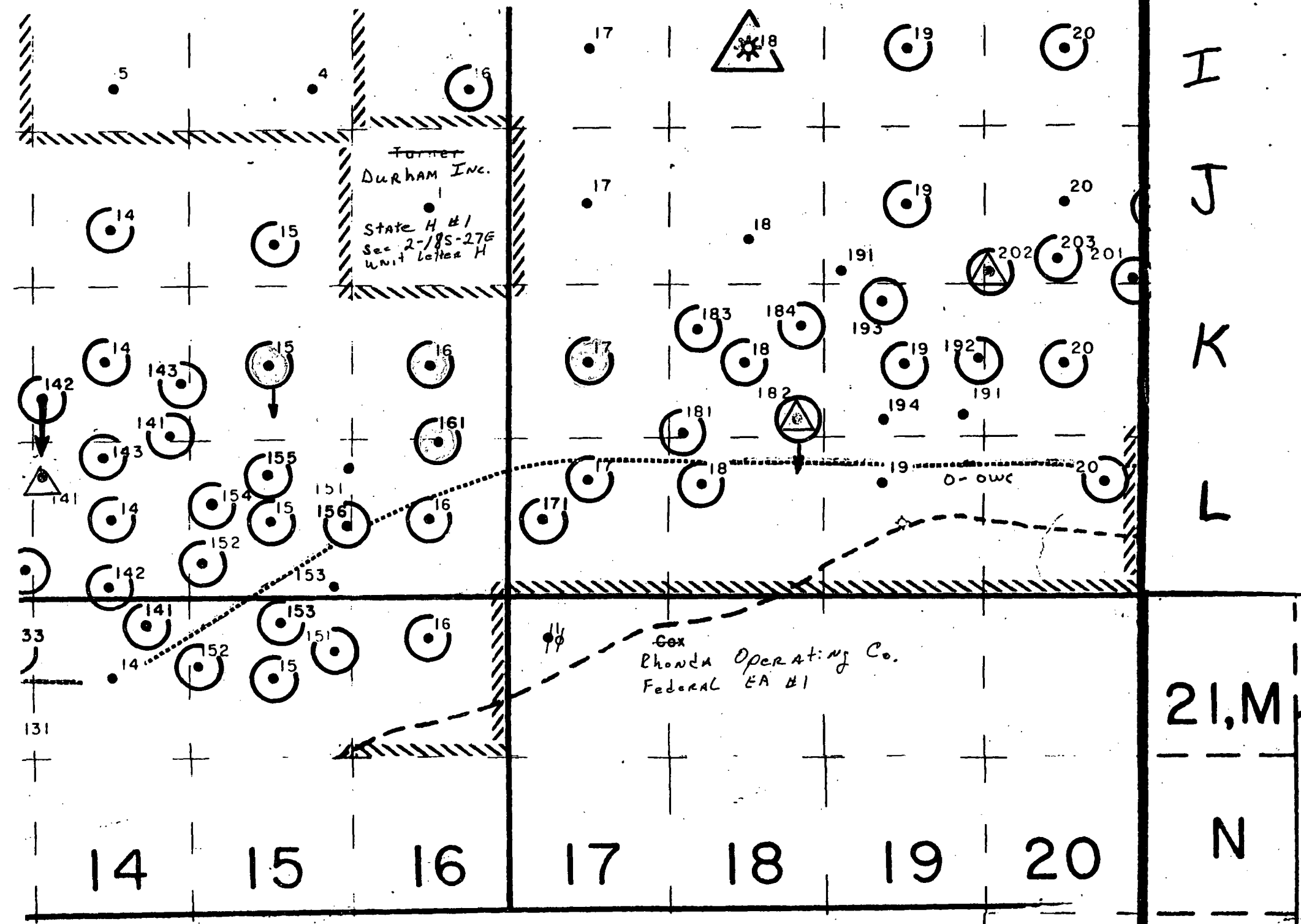
R 27 E

R 28 E

R 29 E



West-East Front Elevation



EMPIRE ABO K-16

Present Status

Drilled 1959

8-5/8" 24# J-55 set @ 1387'
cmt'd w/750 sx, TOC surface, circ

5-1/2" 14# J55 SA 6101'
cmt'd w/400 sx, TOC 2700', add'l 525 sx, circ to surf
TD @ 6101', PBTD 6089'

original 5-1/2" TOC @ 2700';
perf @ 2600' pumped 300 sx TOC 1239';
perf @ 1239' pumped 225 sx TOC surface
(12/11/68)

2-3/8" 4.7# EUE
Rod Pumping Assembly, no TAC

Abo Perfs 5688-5742',
squeezed w/ 150sx

Abo Perfs 5883-5907',
squeezed w/ 200sx

Abo Perfs 6030-6080',
squeezed w/ 75sx
Open Abo Perfs 6072-6086'

EMPIRE ABO K-16

Proposed Status

Drilled 1959

8-5/8" 24# J-55 set @ 1387'
cmt'd w/750 sx, TOC surface, circ

5-1/2" 14# J55 SA 6101'
cmt'd w/400 sx, TOC 2700'; add'l 525' sx, circ to surf
TD @ 6101', PBTD 6089'

original 5-1/2" TOC @ 2700';
perf @ 2600' pumped 300 sx TOC 1239';
perf @ 1239' pumped 225 sx TOC surface
(12/11/68)

2-3/8" 4.7# EUE
Rod Pumping Assembly, no TAC

Abo Perfs 5688-5742',
squeezed w/ 150sx

Abo Perfs 5883-5907',
squeezed w/ 200sx

Abo Perfs 6030-6080',
squeezed w/ 75sx
Squeezed Abo Perfs 6072-6086'

ARCO
EMPIRE ABO UNIT #K-16, slot #1
EDDY COUNTY, NM., EDDY COUNTY, NM.

PROPOSAL LISTING Page 1
Your ref : 45' RADIUS
Last revised : 3-Nov-94

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert. Depth	R E C T A N G U L A R C O O R D I N A T E S	Dogleg Deg/100ft	Vert Sect
0.00	0.00	180.00	0.00	0.00 N 0.00 E	0.00	0.00
500.00	0.00	180.00	500.00	0.00 N 0.00 E	0.00	0.00
1000.00	0.00	180.00	1000.00	0.00 N 0.00 E	0.00	0.00
1500.00	0.00	180.00	1500.00	0.00 N 0.00 E	0.00	0.00
2000.00	0.00	180.00	2000.00	0.00 N 0.00 E	0.00	0.00
2500.00	0.00	180.00	2500.00	0.00 N 0.00 E	0.00	0.00
3000.00	0.00	180.00	3000.00	0.00 N 0.00 E	0.00	0.00
3500.00	0.00	180.00	3500.00	0.00 N 0.00 E	0.00	0.00
4000.00	0.00	180.00	4000.00	0.00 N 0.00 E	0.00	0.00
4500.00	0.00	180.00	4500.00	0.00 N 0.00 E	0.00	0.00
5000.00	0.00	180.00	5000.00	0.00 N 0.00 E	0.00	0.00
5500.00	0.00	180.00	5500.00	0.00 N 0.00 E	0.00	0.00
6000.00	0.00	180.00	6000.00	0.00 N 0.00 E	0.00	0.00
6025.00	0.00	180.00	6025.00	0.00 N 0.00 E	0.00	0.00 KICK OFF POINT
6095.68	90.00	180.00	6070.00	45.00 S 0.00 E	127.32	45.00 END OF CURVE
6500.00	90.00	180.00	6070.00	449.31 S 0.00 E	0.00	449.31
6850.68	90.00	180.00	6070.00	800.00 S 0.00 E	0.00	800.00 TD LATERAL W/ 800' VS

All data is in feet unless otherwise stated
Coordinates from structure and TVD from wellhead.
Vertical section is from wellhead on azimuth 180.00 degrees.
Declination is 0.00 degrees, Convergence is 0.00 degrees.
Calculation uses the minimum curvature method.
Presented by Baker Hughes INTEQ

ARCO
EMPIRE ABO UNIT #K-16,slot #1
EDDY COUNTY, NM.,EDDY COUNTY, NM.

PROPOSAL LISTING Page 2
Your ref : 45' RADIUS
Last revised : 3-Nov-94

Comments in wellpath
=====

MD	TVD	Rectangular Coords.		Comment
6025.00	6025.00	0.00 N	0.00 E	KICK OFF POINT
6095.68	6070.00	45.00 S	0.00 E	END OF CURVE
6850.68	6070.00	800.00 S	0.00 E	TD LATERAL W/ 800' VS

All data is in feet unless otherwise stated
Coordinates from structure and TVD from wellhead.
Bottom hole distance is 800.00 on azimuth 180.00 degrees from wellhead.
Vertical section is from wellhead on azimuth 180.00 degrees.
Declination is 0.00 degrees, Convergence is 0.00 degrees.
Calculation uses the minimum curvature method.
Presented by Baker Hughes INTEQ

ARCO

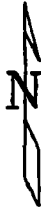
Structure : EMPIRE ABO UNIT #K-16

Field : EDDY COUNTY, NM.

Location : EDDY COUNTY, NM.

WELL PROFILE DATA

Point	MD	Inc	DP	TVS	Surf	East	Deep/100'
Top of well	0	0.00	180.00	0	0	0	0.00
KOP	6025	0.00	180.00	6025	0	0	0.00
End of 6084	6084	20.00	180.00	6070	-45	0	137.32
Total	6451	20.00	180.00	6070	-800	0	0.00



MAGNETIC DECLINATION
8 DEGREES EAST



Scale 1 : 25.00
West East
150 100 50 0 50 100 150

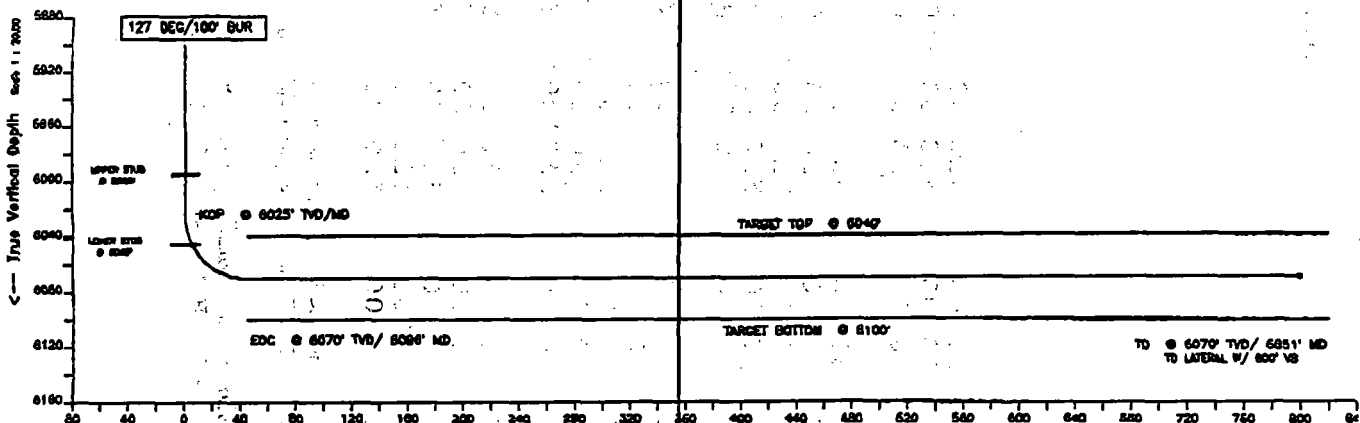
S/L @ N.01° E.0'
KOP @ 6025' TVD/MD

Bottom 218200 (N) @ 1000

BH1 @ S. 600° E. 0'
TD @ BH1= 6070' TVD/ 6451' MD

Scale 1 : 25.00

South -->

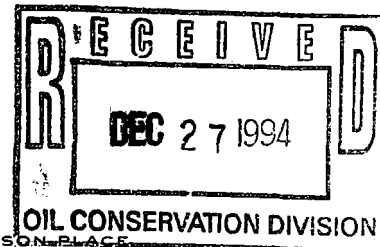


CAMPBELL, CARR, BERGE
& SHERIDAN, P.A.
LAWYERS

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NANCY A. RATH

JACK M. CAMPBELL
OF COUNSEL



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TELEPHONE: (505) 988-4421
TELECOPIER: (505) 983-6043

December 27, 1994

HAND-DELIVERED

William J. LeMay, Director
Oil Conservation Division
New Mexico Department of Energy,
Minerals and Natural Resources
2040 South Pacheco Street
Santa Fe, New Mexico 87505

Re: Application of ARCO Permian, a Unit of Atlantic Richfield, for
Administrative Approval of Horizontal Drainhole, Empire Abo Unit Area,
Eddy County, New Mexico

Dear Mr. LeMay:

ARCO Permian, a Unit of Atlantic Richfield ("ARCO"), pursuant to the provisions of Rule 6(b) of the Special Rules and Regulations for the Empire-Abo Unit Pressure Maintenance Project promulgated by Order No. R-4549, as amended, hereby makes application for a horizontal drainhole for its Empire Abo K-16 Well located 1980 feet from the South line and 660 feet from the East line of Section 2, Township 18 South, Range 27 East, N.M.P.M., Eddy County, New Mexico. This well is necessary to complete an efficient production pattern in the ARCO Empire-Abo Unit Area.

ARCO proposes to reenter the subject well, kick-off at a depth of approximately 6025 feet, use a short radius tool, and drill in a southerly direction until 800 feet of horizontal drainhole is drilled in the Abo formation.

In accordance with the provisions of Rule 6(b) of the Special Rules and Regulations for the Empire-Abo Unit Pressure Maintenance Project, attached hereto are the following:

1. Plats identifying the lands committed to the unit agreement and those lands not committed to said agreement showing the location of the proposed well, all wells within the unit area, and the two offset operators, and

William J. LeMay, Director
December 27, 1994
Page 2

2. Schematic drawings of the proposed well which fully describes the casing, tubing, perforated or openhole interval, kick-off point, and proposed trajectory of the drainhole section.

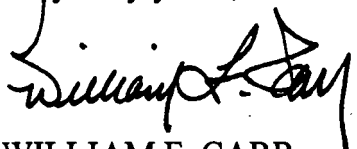
This well will be located more than 330 feet from the outer boundary of the unit and the boundary of any tract not committed to the unit.

All offset operators to the proposed horizontal drainhole have been furnished a complete copy of the application by certified mail, return receipt requested; have been advised that this application was filed on this date; and have been advised that if no objection to this application is received by the Division Director within twenty (20) days of this date, this application may be approved.

This application is being filed in triplicate with the Division's Santa Fe office and one copy has been mailed to the Oil Conservation Division District II office in Artesia.

Your consideration of this application is appreciated.

Very truly yours,



WILLIAM F. CARR

Attorney for ARCO Permian, a Unit of Atlantic Richfield

WFC:mlh

Enclosures

cc: Oil Conservation Division
District II
Post Office Drawer DD
Artesia, New Mexico 88210

Gary Smallwood
ARCO Permian, a Unit of Atlantic Richfield
Post Office Box 1610
Midland, TX 79702

EMPIRE ABO POOL

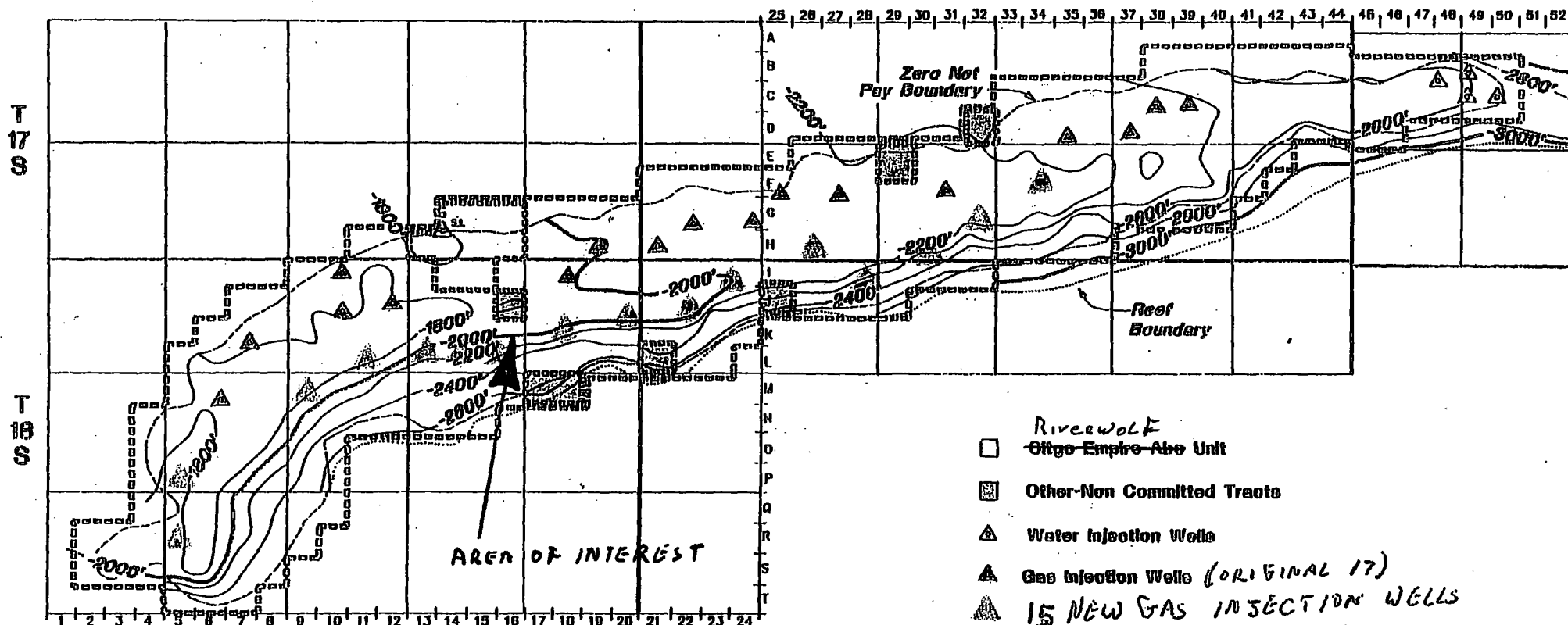
Eddy County, New Mexico

Top Of Reef

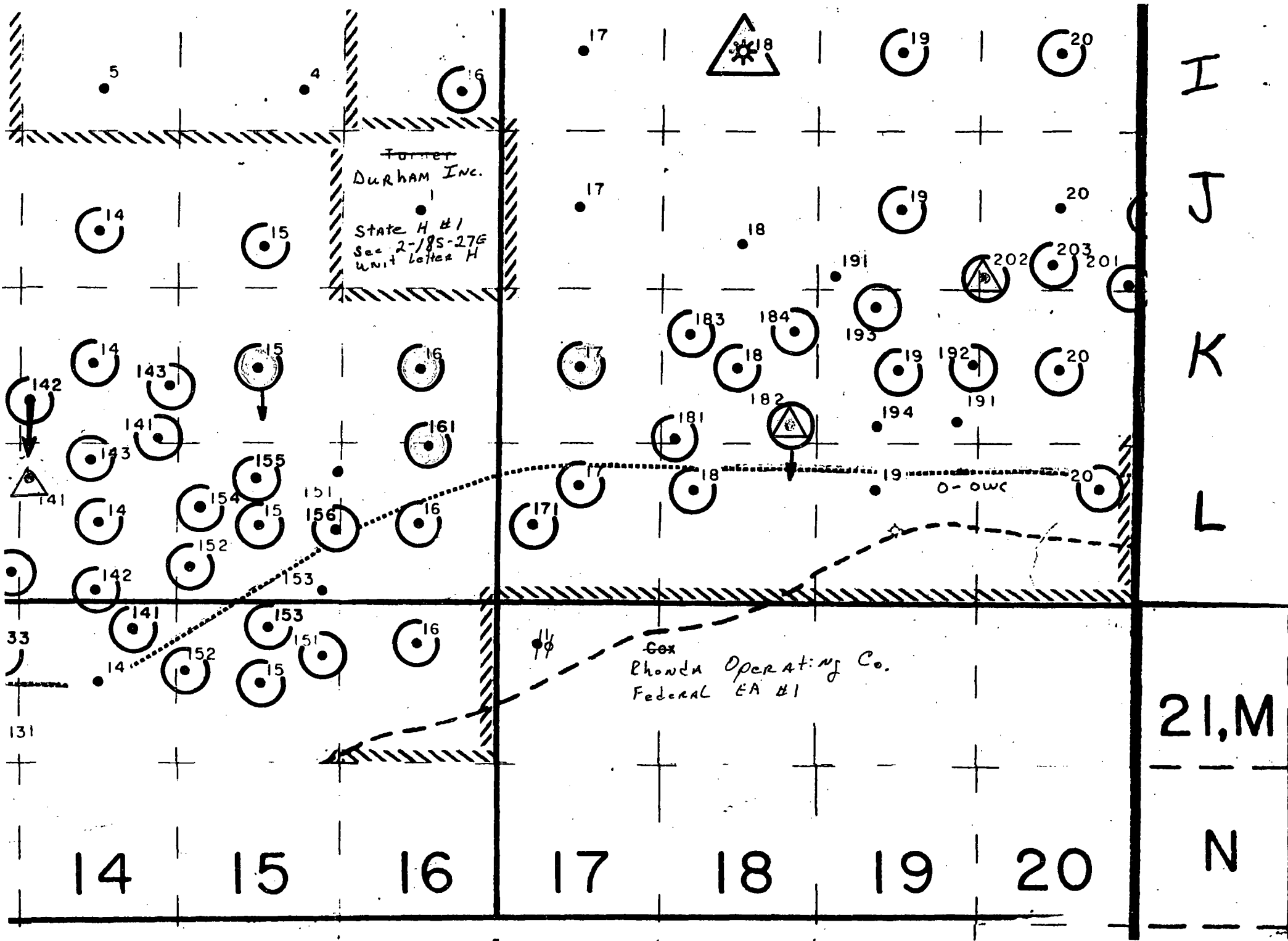
R 27 E

R 28 E

R 29 E



West-East Front Elevation



EMPIRE ABO K-16

Present Status

Drilled 1959

8-5/8" 24# J-55 set @ 1387'
cmt'd w/750 sx, TOC surface, circ

5-1/2" 14# J55 SA 6101'
cmt'd w/400 sx, TOC 2700', add'l 525 sx, circ to surf
TD @ 6101', PBD 6089'

original 5-1/2" TOC @ 2700';
perf @ 2600' pumped 300 sx TOC 1239';
perf @ 1239' pumped 225 sx TOC surface
(12/11/68)

2-3/8" 4.7# EUE
Rod Pumping Assembly, no TAC

Abo Perfs 5688-5742',
squeezed w/ 150sx

Abo Perfs 5883-5907',
squeezed w/ 200sx

Abo Perfs 6030-6080',
squeezed w/ 75sx
Open Abo Perfs 6072-6086'

cut

EMPIRE ABO K-16

Proposed Status

Drilled 1959

8-5/8" 24# J-55 set @ 1387'
cmt'd w/750 sx, TOC surface, circ

5-1/2" 14# J55 SA 6101'
cmt'd w/400 sx, TOC 2700'; add'l 525-sx, circ to surf
TD @ 6101', PBTD 6089'

original 5-1/2" TOC @ 2700';
perf @ 2600' pumped 300 sx TOC 1239';
perf @ 1239' pumped 225 sx TOC surface
(12/11/68)

2-3/8" 4.7# EUE
Rod Pumping Assembly, no TAC.

Abo Perfs 5688-5742',
squeezed w/ 150sx

Abo Perfs 5883-5907',
squeezed w/ 200sx

Abo Perfs 6030-6080',
squeezed w/ 75sx
Squeezed Abo Perfs 6072-6086'

cut

ARCO
EMPIRE ABO UNIT #K-16, slot #1
EDDY COUNTY, NM., EDDY COUNTY, NM.
Your ref : 45' RADIUS
Last revised : 3-Nov-94

Measured Incln. Azimuth True Vert. R E C T A N G U L A R Dogleg Vert
Depth Degrees Degrees Depth C O O R D I N A T E S Deg/100ft Sect

0.00	0.00	180.00	0.00	0.00 N	0.00 E	0.00	0.00
500.00	0.00	180.00	500.00	0.00 N	0.00 E	0.00	0.00
1000.00	0.00	180.00	1000.00	0.00 N	0.00 E	0.00	0.00
1500.00	0.00	180.00	1500.00	0.00 N	0.00 E	0.00	0.00
2000.00	0.00	180.00	2000.00	0.00 N	0.00 E	0.00	0.00
2500.00	0.00	180.00	2500.00	0.00 N	0.00 E	0.00	0.00
3000.00	0.00	180.00	3000.00	0.00 N	0.00 E	0.00	0.00
3500.00	0.00	180.00	3500.00	0.00 N	0.00 E	0.00	0.00
4000.00	0.00	180.00	4000.00	0.00 N	0.00 E	0.00	0.00
4500.00	0.00	180.00	4500.00	0.00 N	0.00 E	0.00	0.00
5000.00	0.00	180.00	5000.00	0.00 N	0.00 E	0.00	0.00
5500.00	0.00	180.00	5500.00	0.00 N	0.00 E	0.00	0.00
6000.00	0.00	180.00	6000.00	0.00 N	0.00 E	0.00	0.00
6025.00	0.00	180.00	6025.00	0.00 N	0.00 E	0.00	0.00
6095.68	90.00	180.00	6070.00	45.00 S	0.00 E	127.32	45.00
6500.00	90.00	180.00	6070.00	449.31 S	0.00 E	0.00	449.31
6850.68	90.00	180.00	6070.00	800.00 S	0.00 E	0.00	800.00

0.00 KICK OFF POINT
45.00 END OF CURVE

800.00 TD LATERAL W/ 800' VS

All data is in feet unless otherwise stated
Coordinates from structure and TVD from wellhead.
Vertical section is from wellhead on azimuth 180.00 degrees.
Declination is 0.00 degrees, Convergence is 0.00 degrees.
Calculation uses the minimum curvature method.
Presented by Baker Hughes INTEQ

ARCO
EMPIRE ABO UNIT #K-16,slot #1
EDDY COUNTY, NM.,EDDY COUNTY, NM.

PROPOSAL LISTING Page 2
Your ref : 45' RADIUS
Last revised : 3-Nov-94

Comments in wellpath
=====

MD	TVD	Rectangular Coords.		Comment
6025.00	6025.00	0.00 N	0.00 E	KICK OFF POINT
6095.68	6070.00	45.00 S	0.00 E	END OF CURVE
6850.68	6070.00	800.00 S	0.00 E	TD LATERAL W/ 800' VS

All data is in feet unless otherwise stated
Coordinates from structure and TVD from wellhead.
Bottom hole distance is 800.00 on azimuth 180.00 degrees from wellhead.
Vertical section is from wellhead on azimuth 180.00 degrees.
Declination is 0.00 degrees, Convergence is 0.00 degrees.
Calculation uses the minimum curvature method.
Presented by Baker Hughes INTEQ

ARCO

Structure : EMPIRE ABO UNIT #K-16

Field : EDDY COUNTY, NM.

Location : EDDY COUNTY, NM.

WELL PROFILE DATA

Point	MD	Inc	DP	TVL	Surf	Comp	Dep/100
Top of	0	0.00	120.00	0	0	0	0.00
KOP	6025	0.00	120.00	6025	0	0	0.00
End of 6025	6025	00.00	120.00	6070	-40	0	127.22
Bottom	6851	00.00	120.00	6070	-800	0	0.00



MAGNETIC DECLINATION
8 DEGREES EAST

**BAKER
HUGHES
INTEQ**

Scale 1 : 25.00

150 100 50 0 50 100 150

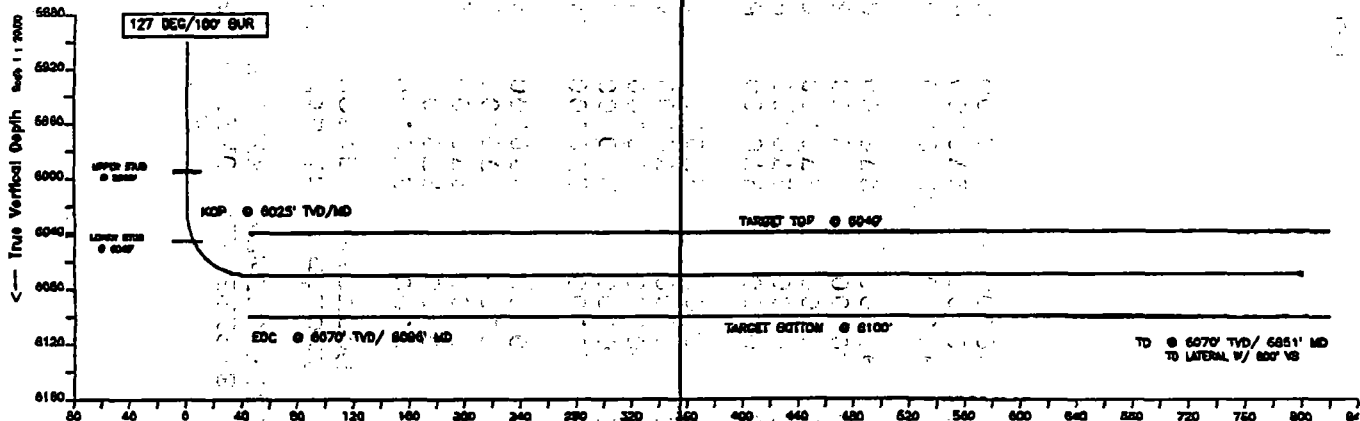
S/L @ N.0°, E.0°
KOP @ 6025' TVD/MD

EMPIRE ABO UNIT #K-16

BHL @ S. 800°, E. 0°
TD @ BHL= 6070' TVD/ 6851' MD

Scale 1 : 25.00

South -->



Scale 1 : 20.00

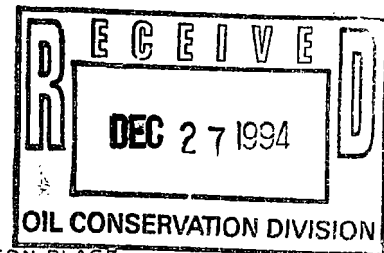
Vertical Section on 180.00 azimuth with reference 0.00 N, 0.00 E from structure

CAMPBELL, CARR, BERGE
& SHERIDAN, P.A.
LAWYERS

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WILLIAM F. CARR
BRADFORD C. BERGE
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POST OFFICE BOX 2208
SANTA FE, NEW MEXICO 87504-2208
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December 27, 1994

HAND-DELIVERED

William J. LeMay, Director
Oil Conservation Division
New Mexico Department of Energy,
Minerals and Natural Resources
2040 South Pacheco Street
Santa Fe, New Mexico 87505

Re: Application of ARCO Permian, a Unit of Atlantic Richfield, for
Administrative Approval of Horizontal Drainhole, Empire Abo Unit Area,
Eddy County, New Mexico

Dear Mr. LeMay:

ARCO Permian, a Unit of Atlantic Richfield ("ARCO"), pursuant to the provisions of Rule 6(b) of the Special Rules and Regulations for the Empire-Abo Unit Pressure Maintenance Project promulgated by Order No. R-4549, as amended, hereby makes application for a horizontal drainhole for its Empire Abo K-16 Well located 1980 feet from the South line and 660 feet from the East line of Section 2, Township 18 South, Range 27 East, N.M.P.M., Eddy County, New Mexico. This well is necessary to complete an efficient production pattern in the ARCO Empire-Abo Unit Area.

ARCO proposes to reenter the subject well, kick-off at a depth of approximately 6025 feet, use a short radius tool, and drill in a southerly direction until 800 feet of horizontal drainhole is drilled in the Abo formation.

In accordance with the provisions of Rule 6(b) of the Special Rules and Regulations for the Empire-Abo Unit Pressure Maintenance Project, attached hereto are the following:

1. Plats identifying the lands committed to the unit agreement and those lands not committed to said agreement showing the location of the proposed well, all wells within the unit area, and the two offset operators, and

William J. LeMay, Director

December 27, 1994

Page 2

2. Schematic drawings of the proposed well which fully describes the casing, tubing, perforated or openhole interval, kick-off point, and proposed trajectory of the drainhole section.

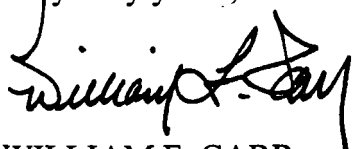
This well will be located more than 330 feet from the outer boundary of the unit and the boundary of any tract not committed to the unit.

All offset operators to the proposed horizontal drainhole have been furnished a complete copy of the application by certified mail, return receipt requested; have been advised that this application was filed on this date; and have been advised that if no objection to this application is received by the Division Director within twenty (20) days of this date, this application may be approved.

This application is being filed in triplicate with the Division's Santa Fe office and one copy has been mailed to the Oil Conservation Division District II office in Artesia.

Your consideration of this application is appreciated.

Very truly yours,



WILLIAM F. CARR

Attorney for ARCO Permian, a Unit of Atlantic Richfield

WFC:mlh

Enclosures

cc: Oil Conservation Division
District II
Post Office Drawer DD
Artesia, New Mexico 88210

Gary Smallwood
ARCO Permian, a Unit of Atlantic Richfield
Post Office Box 1610
Midland, TX 79702

EMPIRE ABO POOL

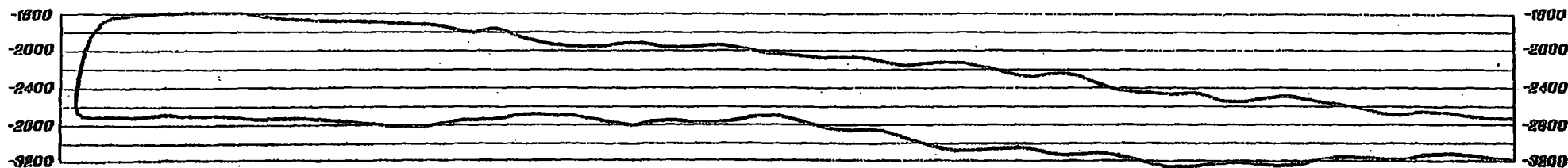
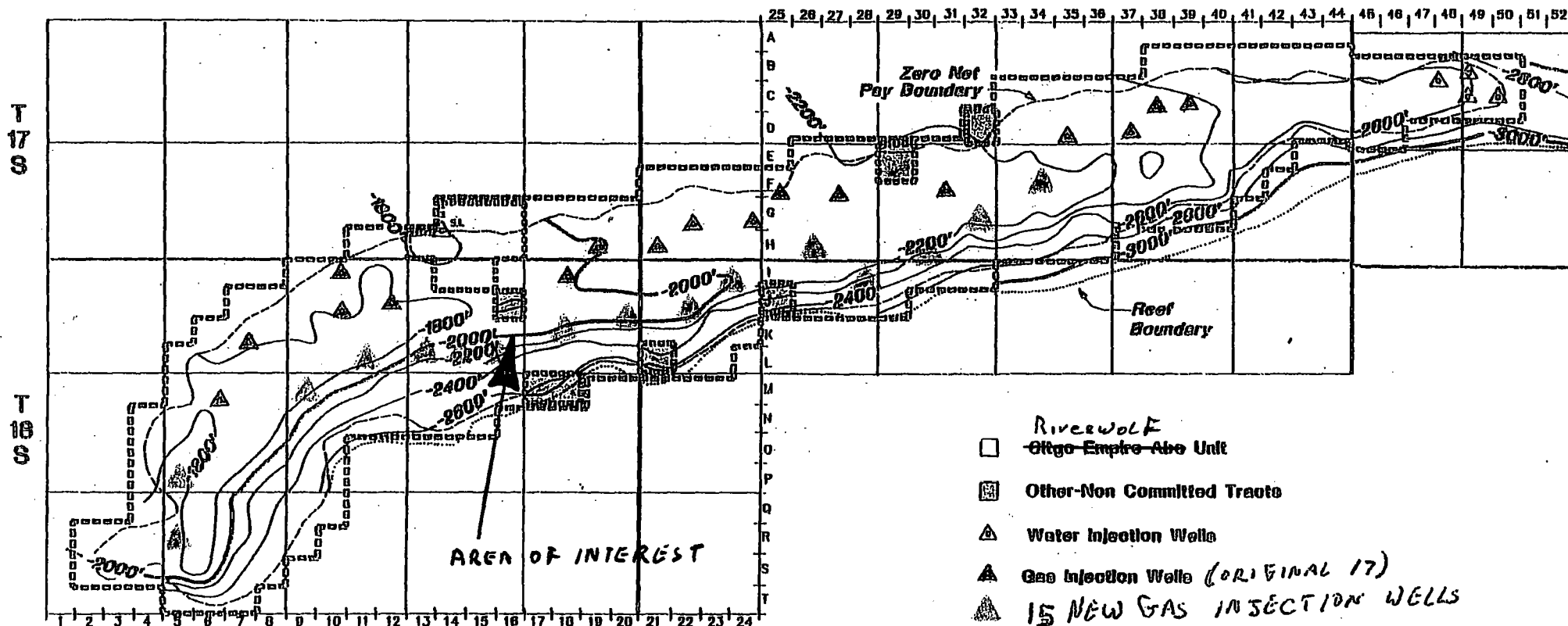
Eddy County, New Mexico

Top Of Reef

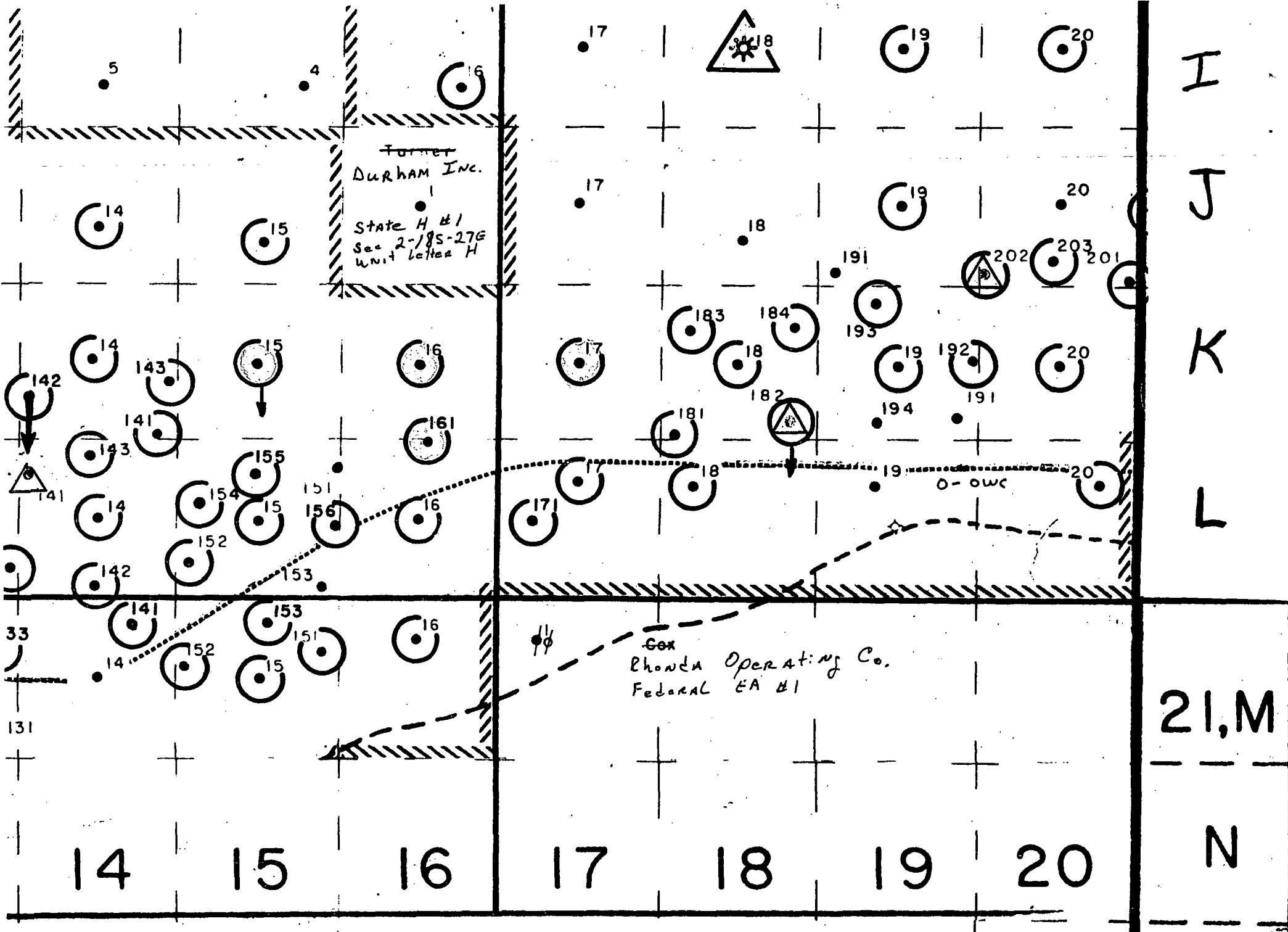
R 27 E

R 28 E

R 29 E



West-East Front Elevation



I
J
K
L

21,M

N

Turner
Durham Inc.
State H #1
Sec 2-185-276
Unit letter H

Gex
Rhonda Operating Co.
Federal EA #1

EMPIRE ABO K-16

Present Status

Drilled 1959

8-5/8" 24# J-55 set @ 1387'
cmt'd w/750 sx, TOC surface, circ

5-1/2" 14# J55 SA 6101'
cmt'd w/400 sx, TOC 2700', add'l 525 sx, circ to surf
TD @ 6101', PBTD 6089'

original 5-1/2" TOC @ 2700';
perf @ 2600' pumped 300 sx TOC 1239';
perf @ 1239' pumped 225 sx TOC surface
(12/11/68)

2-3/8" 4.7# EUE
Rod Pumping Assembly, no TAC

Abo Perfs 5688-5742',
squeezed w/ 150sx

Abo Perfs 5883-5907',
squeezed w/ 200sx

Abo Perfs 6030-6080',
squeezed w/ 75sx
Open Abo Perfs 6072-6086'

Cut

EMPIRE ABO K-16

Proposed Status

Drilled 1959

8-5/8" 24# J-55 set @ 1387'
cmt'd w/750 sx, TOC surface, circ

5-1/2" 14# J55 SA 6101'
cmt'd w/400 sx, TOC 2700', add'l 525 sx, circ to surf
TD @ 6101', PBTD 6089'

original 5-1/2" TOC @ 2700';
perf @ 2600' pumped 300 sx TOC 1239';
perf @ 1239' pumped 225 sx TOC surface
(12/11/68)

2-3/8" 4.7# EUE
Rod Pumping Assembly, no TAC

Abo Perfs 5688-5742',
squeezed w/ 150sx

Abo Perfs 5883-5907',
squeezed w/ 200sx

Abo Perfs 6030-6080',
squeezed w/ 75sx
Squeezed Abo Perfs 6072-6086'

cut

ARCO
EMPIRE ABO UNIT #K-16, slot #1
EDDY COUNTY, NM., EDDY COUNTY, NM.

PROPOSAL LISTING Page 1
Your ref : 45' RADIUS
Last revised : 3-Nov-94

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert. Depth	R E C T A N G U L A R C O O R D I N A T E S		Dogleg Deg/100Ft	Vert Sect
0.00	0.00	180.00	0.00	0.00 N	0.00 E	0.00	0.00
500.00	0.00	180.00	500.00	0.00 N	0.00 E	0.00	0.00
1000.00	0.00	180.00	1000.00	0.00 N	0.00 E	0.00	0.00
1500.00	0.00	180.00	1500.00	0.00 N	0.00 E	0.00	0.00
2000.00	0.00	180.00	2000.00	0.00 N	0.00 E	0.00	0.00
2500.00	0.00	180.00	2500.00	0.00 N	0.00 E	0.00	0.00
3000.00	0.00	180.00	3000.00	0.00 N	0.00 E	0.00	0.00
3500.00	0.00	180.00	3500.00	0.00 N	0.00 E	0.00	0.00
4000.00	0.00	180.00	4000.00	0.00 N	0.00 E	0.00	0.00
4500.00	0.00	180.00	4500.00	0.00 N	0.00 E	0.00	0.00
5000.00	0.00	180.00	5000.00	0.00 N	0.00 E	0.00	0.00
5500.00	0.00	180.00	5500.00	0.00 N	0.00 E	0.00	0.00
6000.00	0.00	180.00	6000.00	0.00 N	0.00 E	0.00	0.00
6025.00	0.00	180.00	6025.00	0.00 N	0.00 E	0.00	0.00 KICK OFF POINT
6095.68	90.00	180.00	6070.00	45.00 S	0.00 E	127.32	45.00 END OF CURVE
6500.00	90.00	180.00	6070.00	449.31 S	0.00 E	0.00	449.31
6850.68	90.00	180.00	6070.00	800.00 S	0.00 E	0.00	800.00 TD LATERAL W/ 800' VS

All data is in feet unless otherwise stated
Coordinates from structure and TVD from wellhead.
Vertical section is from wellhead on azimuth 180.00 degrees.
Declination is 0.00 degrees, Convergence is 0.00 degrees.
Calculation uses the minimum curvature method.
Presented by Baker Hughes INTEQ

ARCO
EMPIRE ABO UNIT #K-16,slot #1
EDDY COUNTY, NM.,EDDY COUNTY, NM.

PROPOSAL LISTING Page 2
Your ref : 45' RADIUS
Last revised : 3-Nov-94

Comments in wellpath
=====

MD	TVD	Rectangular Coords.		Comment
6025.00	6025.00	0.00 N	0.00 E	KICK OFF POINT
6095.68	6070.00	45.00 S	0.00 E	END OF CURVE
6850.68	6070.00	800.00 S	0.00 E	TD LATERAL W/ 800' VS

All data is in feet unless otherwise stated
Coordinates from structure and TVD from wellhead.
Bottom hole distance is 800.00 on azimuth 180.00 degrees from wellhead.
Vertical section is from wellhead on azimuth 180.00 degrees.
Declination is 0.00 degrees, Convergence is 0.00 degrees.
Calculation uses the minimum curvature method.
Presented by Baker Hughes INTEQ

ARCO

Structure : EMPIRE ABO UNIT #K-16

Field : EDDY COUNTY, NM.

Location : EDDY COUNTY, NM.

WELL PROFILE DATA

Point	MD	Inc	DP	TVD	Depth	Gain	Log/100
Top of well	0	0.00	120.00	0	0	0	0.00
KOP	6025	0.00	120.00	6025	0	0	0.00
End of well	6086	80.00	180.00	6070	-40	0	127.32
Target	6051	80.00	180.00	6070	-500	0	0.00

MAGNETIC DECLINATION
8 DEGREES EAST

BAKER
HUGHES
INTEQ

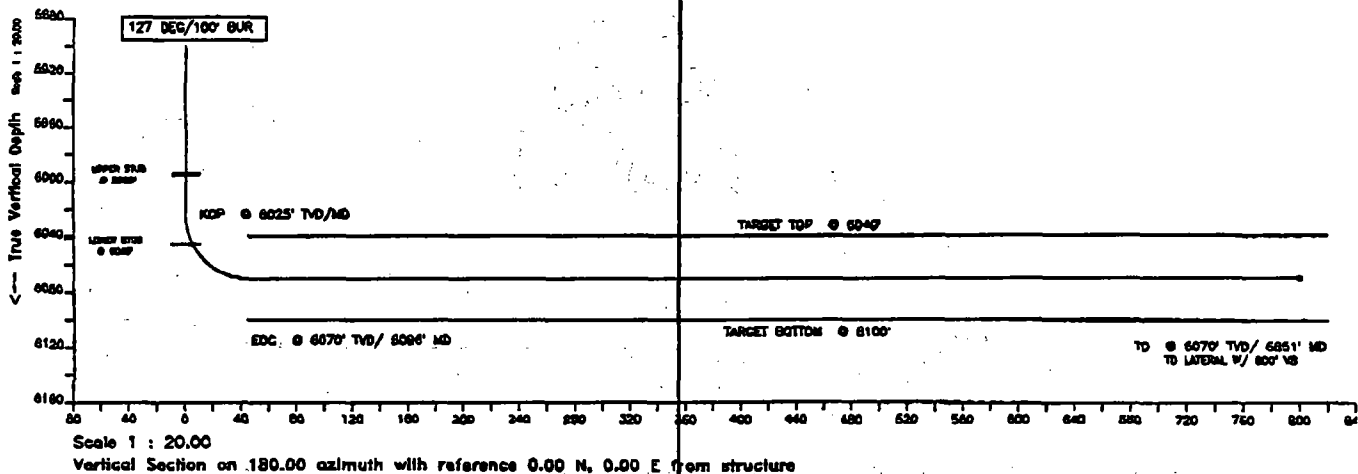
Scale 1 : 25.00
120 100 50 0 50 100 120
West EastS/L @ N.0°, E.0°
KOP @ 6025' TVD/MD

LUNNEY 21000 COR @ .008

BHL @ S. 800°, E. 0°
TD @ BHL- 6070' TVD/ 6851' MD

Scale 1 : 25.00

South -->



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

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

CASE NO. 6742
Order No. R-4549-E

APPLICATION OF ARCO OIL AND GAS
COMPANY FOR AN ADMINISTRATIVE
PROCEDURE, EDDY COUNTY, NEW MEXICO.

See Also Order Nos.

*R-4549
R-4549-A
R-4549-B
R-4549-C
R-4549-D
R-4549-F*

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on November 28, 1979, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 28th day of January, 1980, 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 the applicant, ARCO Oil and Gas Company, is the operator of the Empire Abo Pressure Maintenance Project, Empire-Abo Pool, Eddy County, New Mexico, which project was authorized by Division Order No. R-4549, and is governed by operating rules included in said order as amended by Orders Nos. R-4549-A through R-4549-D.
- (3) That the applicant seeks the amendment of Rule 14 of the Special Rules and Regulations for said project adopted by Order No. R-4549, as amended, to additionally provide for an administrative procedure for authorizing the drilling, for production or injection purposes, of "horizontal drainholes" within such project.
- (4) That the drilling of said horizontal drainholes within the boundaries of said project should result in the recovery of oil and gas therefrom which might not otherwise

be produced thereby preventing waste.

(5) That correlative rights will not be violated provided that no perforated or openhole portion of any horizontal drainhole shall be closer than 330 feet to the outer boundary of the Empire Abo Unit or any tract not committed to said unit nor, in the case of a well to be used for injection, closer than 1650 feet to such boundary or tract.

(6) That the application for administrative procedure should be approved by amending said Rule 14 to read in its entirety as shown on Exhibit "A" attached to this order.

IT IS THEREFORE ORDERED:

(1) That Rule 14 of the Special Rules and Regulations for the Empire Abo Pressure Maintenance Project is hereby amended to read in its entirety as shown on Exhibit "A" to this order.

(2) 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

S E A L

fd/

EXHIBIT "A"
ORDER NO. R-4549-E

RULE 14 A. The Director of the Division is hereby authorized to approve such additional producing wells and gas injection and water injection wells at orthodox and un-orthodox locations within the boundaries of the ARCO Empire Abo Unit Area as may be necessary to complete an efficient production and injection pattern, provided said wells are drilled no closer than 660 feet to the outer boundary of said unit nor closer than 10 feet to any quarter-quarter section or subdivision inner boundary and provided that no well shall be approved for gas or water injection when such well is located closer than 1650 feet to a tract which is not committed to the unit and on which is located a well producing from the same common source of supply. To obtain such approval, the project operator shall file proper application with the Division Director, which application, if it seeks authorization to convert additional wells to injection or to drill additional production or injection wells shall include the following:

(1) A plat identifying the lands committed to the unit agreement and those lands not committed to said agreement, and showing the location of the proposed well, all wells within the unit area, and offset operators.

(2) A schematic drawing of the proposed well which fully describes the casing, tubing, perforated interval, and depth.

(3) A letter stating that all offset operators to the proposed well have been furnished a complete copy of the application and the date of notification.

RULE 14 B. The Director of the Division is hereby authorized to approve the drilling of "horizontal drainholes" for the purposes of production or injection within the boundaries of the ARCO Empire Abo Unit Area as may be necessary to complete an efficient production and injection pattern, provided no perforated or openhole portion of said wells shall be closer than 330 feet to the outer boundary of said unit or to any tract not committed to such unit nor, in the case of a well to be used for injection closer than 1650 feet to such boundary or tract. To obtain such approval, the project operator shall file proper application with the Division Director, which application, if it seeks authorization to convert additional wells to injection or to drill additional production or injection wells shall include the following:

(1) A plat identifying the lands committed to the unit agreement and those lands not committed to said agreement, and showing the location of the proposed well, all wells within the unit area, and offset operators.

(2) Schematic drawings of the proposed well which fully describes the casing, tubing, perforated or open-hole interval, kick-off point, and proposed trajectory of the drainhole section.

(3) A letter stating that all offset operators to the proposed well have been furnished a complete copy of the application and the date of notification.

RULE 14 C. The Director may approve the proposed well if, within 20 days after receiving the application, no objection to the proposal is received. The Director may grant immediate approval, provided waivers of objection are received from all offset operators.

RULE 14 D. Within 20 days following completion of any horizontal drainhole the operator shall submit a report to the Division Director with sufficient detail to locate the kick-off point and the trajectory of the deviated portion of the well bore with respect to any quarter-quarter section(s) penetrated by such well and any 40-acre tract directly or diagonally offsetting such quarter-quarter section(s).

The Director may approve the final location of the horizontal drainhole by acceptance of such report.

The Director may rescind the authority for any horizontal drainhole if the perforated or openhole portion of such hole is located closer to the unit boundary or any uncommitted tract than permitted by these rules or if it should appear that such rescission is necessary to prevent waste or protect correlative rights.