

SPiRiT ENERGY 76

New Name. Same Spirit.

A Business Unit of Unocal

DHC 12/22/97

DEC - 2 1997

November 28, 1997

New Mexico Oil Conservation Division

Attn.: Mr. William J. LeMay

2040 S. Pacheco Street

Santa Fe, NM 87505

Dear Mr. LeMay,

Union Oil Company of California d.b.a. UNOCAL requests approval to down-hole commingle hydrocarbon production from the Blanco Mesa Verde and Basin Dakota formations in the following Rincon Unit wells, Rio Arriba County, New Mexico.

Well	Legal Location
139	1650' FSL, 1650' FWL, SW Sec 25, T27N, R7W
168	1190' FNL, 1190' FEL, NE Sec 36, T27N, R7W
181	1550' FNL, 1750' FEL, NE Sec 22, T27N, R6W

Forms C-107-A with supporting data for each well are attached.

Mesaverde reserves would be developed most economically if these wells were granted downhole commingling approval. Approval prior to completion is being sought because production casing size will not support running dual production strings. Drilling a replacement well of larger casing size or a stand alone Mesa Verde well is not economical at this time.

A list of twenty-six bottom hole pressure measurements from new and mature completions, taken in 1993 and 1994, are submitted as reference cases. Calculated bottom hole pressures from 7-day surface shut-in pressures were used to determine current Dakota bottom hole pressures. No permanent loss of reserves due to cross flow should occur in these wells. Formation damage due to incompatible fluids has not been observed for existing downhole commingled completions on the Rincon Unit.

To date, thirty-four exceptions to rule 303-A have been granted for the Rincon Unit. In 1996, Unocal added and downhole commingled a Mesaverde completion with a mature Dakota in the Rincon Unit Well No. 183. The method for allocating production is based on the allocation formula approved by NMOCD Order DHC-1376 issued October 16th, 1996. This method accounts for approximately twelve months of "flush production" typically associated with new completions in the Rincon Unit. A fixed percentage allocation is determined after 12 months. Production forecasts for the existing Dakota formations are based on decline curve analysis. The projected Mesaverde production is the average of six Mesaverde wells completed since 1992 that have separately metered volumes.

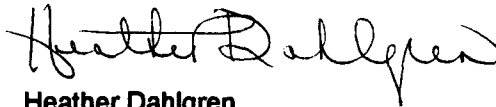
New Mexico Oil Conservation Division
November 28, 1997
Page 2

UNOCAL is confident that production will not be wasted and the proposed method of completion will efficiently drain Dakota and Mesa Verde acreage for these wellbores.

If you have any questions regarding this proposal please contact Tom Baiar at 915/685-6836.

Sincerely,

Spirit Energy 76
A Business Unit of UNOCAL

A handwritten signature in black ink, appearing to read "Heather Dahlgren". The signature is fluid and cursive, with the first name "Heather" and last name "Dahlgren" clearly distinguishable.

Heather Dahlgren
Engineering Technician

TEB:ss

Att.

cc: New Mexico Oil Conservation Division/Aztec,NM

SPiRiT ENERGY 76

New Name. Same Spirit.

A Business Unit of Unocal

Certified Receipt No. Z740626190

November 11, 1997

New Mexico Oil Conservation Division
Attn.: Mr. Frank Chavez
1000 Rio Brazos Road
Aztec, NM 87410

Dear Mr. Chavez:

Union Oil Company of California d.b.a. UNOCAL requests approval to down-hole commingle hydrocarbon production from the Blanco Mesa Verde and Basin Dakota formations in the following Rincon Unit well, Rio Arriba County, New Mexico.

<u>Well</u>	<u>Legal Location</u>
181	1550' FNL, 1750' FEL, NE Sec 22, T27N, R6W

a UNOCAL operated well located on Federal acreage.

This well was drilled and completed with 4-1/2" casing, in September 1962, in the Dakota formation. The Dakota is currently producing 68 Mcfd gas and a trace of oil. UNOCAL proposes to perforate, stimulate with a hydraulic fracture and isolate and test (with a production packer and 2-3/8" tubing) oil, gas and water production from the Mesa Verde formation. If production from the Mesa Verde is economic, the Mesa Verde would be downhole commingled with the Dakota. Allocation factors will be calculated from the Mesa Verde test and the Dakota's historical production.

Mesa Verde reserves in this acreage would be developed most economically if this well were granted downhole commingle approval. Approval prior to completion is being sought because production casing size will not support running dual production strings. Drilling a replacement well of larger casing size or a stand alone Mesa Verde well is not economical at this time.

One week shut-in surface pressures from off-set Mesa Verde wells were obtained in April, 1995 as follows:

<u>WELL</u>	<u>Location</u>	<u>SICP (psig)</u>
29 MV	NE, S22, T27N, R6W	492 (To be P & A'd)
29A MV	NW, S22, T27N, R6W	232
33 MV	SW, S22, T27N, R6W	332
181 DK	NE, S22, T27N, R6W	322

1004 North Big Spring • Post Office Box 3100 • Midland, Texas 79702

New Mexico Oil Conservation Division
November 11, 1997
Page 2

UNOCAL is confident that production will not be wasted and the proposed method of completion will efficiently drain Dakota and Mesa Verde acreage around this wellbore.

Attachments:

- 1) Current well bore schematic.
- 2) Oil and gas production curves.
- 3) Lease map showing well locations for offset pressure data and offset lease operators.
- 4) Where applicable, letters to offset operators stating UNOCAL's proposal.

If you have any questions regarding this proposal please contact me at 915/685-6836.

Sincerely,

Spirit Energy 76
A Business Unit of UNOCAL



Thomas E. Baier
Petroleum Engineer

TEB:had:ss

Att.

cc: New Mexico Oil Conservation Division/Santa Fe, NM

WELL: **RINCON UNIT #181**

LOCATION: **1550' FNL 1750' FEL Sec. 22 T27N R6W SW NE**

COUNTY: **Rio Arriba**

STATE: **NM**

PRODUCING FORMATION: **Dakota**

CURRENT

SPUD DATE: **8/14/62**

COMPL DATE: **9/14/62**

RECOMPL DATE: **-----**

Elevation = **6570'**

KB = **10'**

Updated: **8/1/97**

9-5/8", 32.3# H-40 @ 335'
Cmt w/ 210 sxs, Circ. to Surface

244 Jts., 2-3/8" 8rd, 4.7# J-55 FHD @ 7645'

Installed plunger lift (4-88)

Tbg. Stop set @ 7594' (2-97)

DV Tool
@ 3407'

DV Tool
@ 5660'

PBTD
@ 7660'

Dakota perfs: 7460-7649

7460-64, 7480-84, 7542-46, 7576-80, 7595-99

7643-49 w/ 2 spf

Frac w/ 74,500 gal wtr, 72,000# sand

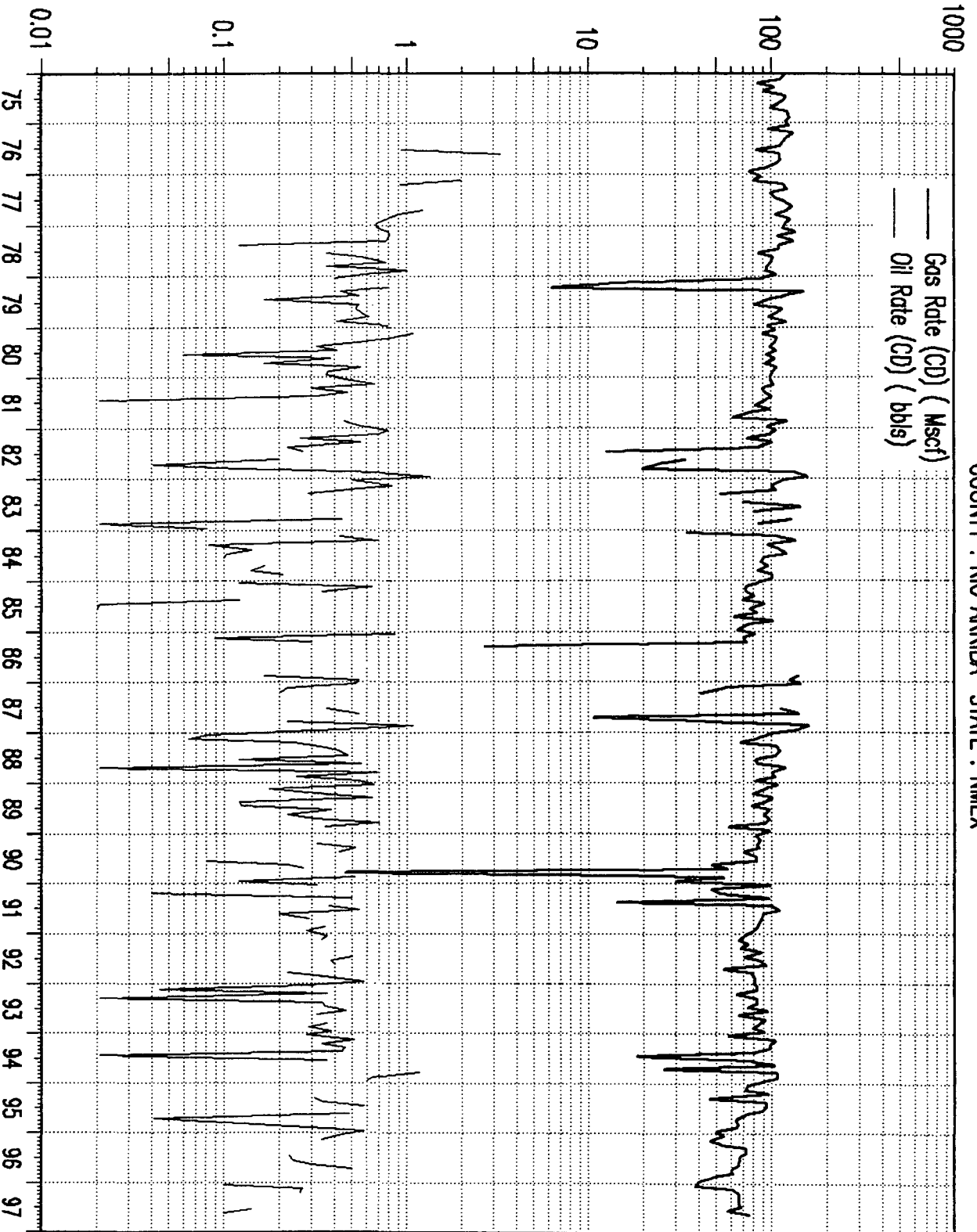
4-1/2", 11.6 & 10.5#, J-55 @ 7705'

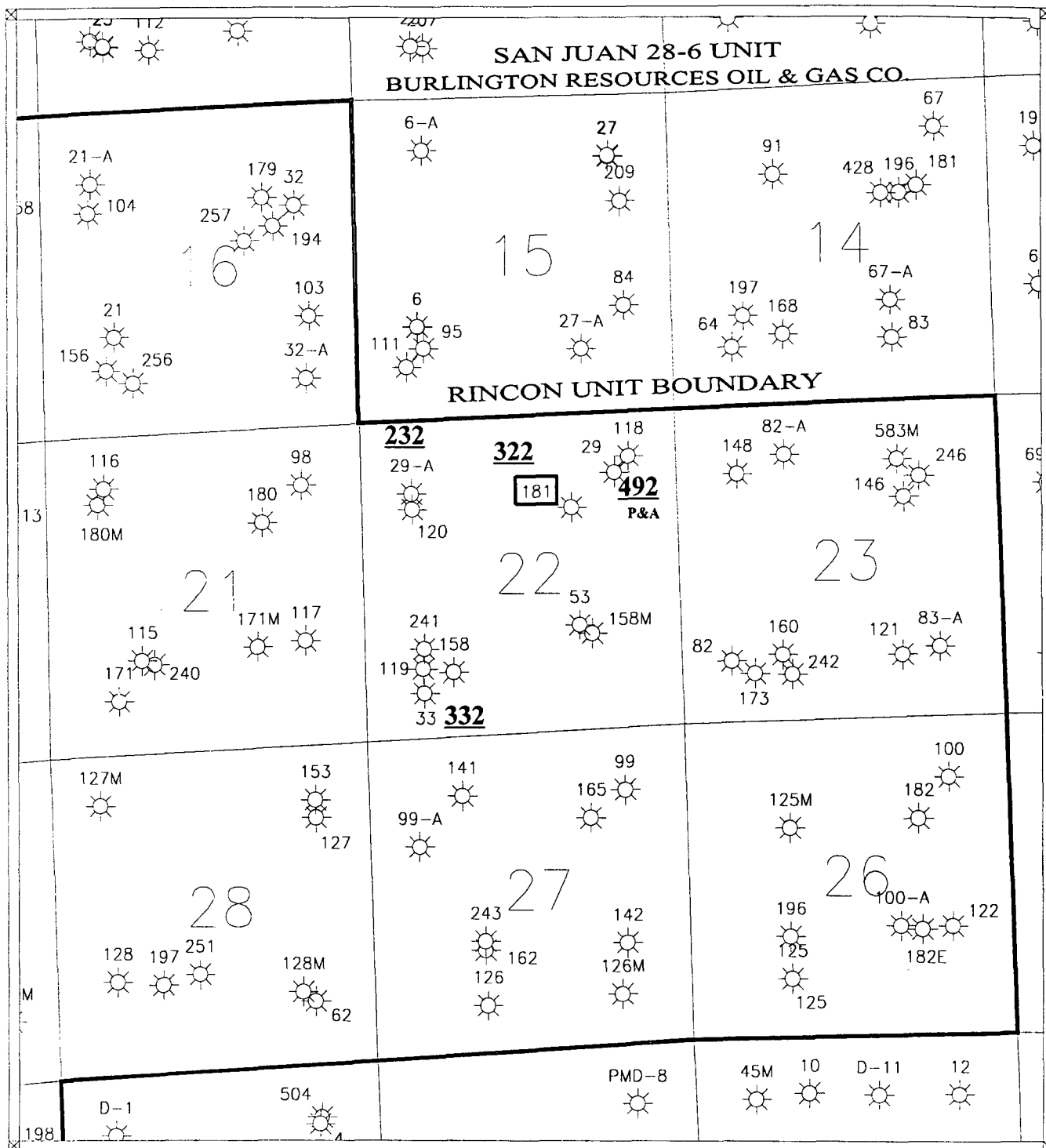
TD = 7709' Cmt w/ 130 sxs 1st stg circ, 210 sxs 2nd stg circ, 210 sxs 3rd stg circ.

WELL: RINCON UNIT 181:DK

LOCATION : N027 W006 22 SWNE

COUNTY : RIO ARriba STATE : NMEX





Scale 1:30000.

1000. 0. 1000. 2000. 3000. 4000. 5000. feet



0.1 0. 0.1 0.2 0.3 0.4 0.5 miles



SPIRIT ENERGY AN OIL FIELD SERVICES COMPANY		
OFFSET PRESSURE DATA & LEASE MAP RINCON UNIT NO. 181 OPERATOR: UNION OIL CO. OF CALIFORNIA		
Scale: 1:30000.		
Sandra M. Thoma	11/12/97	T-RU-181.GPF

DISTRICT I
P.O. Box 1980, Hobbs, NM 88241-1980

DISTRICT II
811 South First St., Artesia, NM 88210-2635

DISTRICT III
1000 Rio Grande Rd., Aztec, NM 87410-1693

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

2040 S. Pacheco
Santa Fe, New Mexico 87505-8429

Form C-107-A
New 3 12-96

APPROVAL PROCESS:

☒ Administrative ☐ Hearing

EXISTING WELLBORE

☒ YES ☐ NO

APPLICATION FOR DOWNHOLE COMMINGLING

Union Oil Company of California P.O. Box 3100 Midland, Texas 79702
Operator Address

Rincon Unit 181 G Sec. 22, 27N-6W Rio Arriba
Lease Well No. Unit Tr. Sec. Twp. Rge. County

OGRID NO. 023708 Property Code 011510 API NO. 30-039-06990
Spacing Unit Lease Types: (check 1 or more) Federal ☒ State ☐ Land Use Fee ☐

The following facts are submitted in support of downhole commingling:	Upper Zone	Intermediate Zone	Lower Zone
1. Pool Name and Pool Code	Blanco Mesaverde 72319		Basin Dakota 71599
2. Top and Bottom of Pay Section (Perforations)	4933 - 5056 Proposed		7460 - 7649
3. Type of production (Oil or Gas)	Gas		Gas
4. Method of Production (Flowing or Artificial Lift)	Flowing		Flowing
5. Bottomhole Pressure	a. (Current) 552	a.	a. 379
Oil Zones - Artificial Lift: Gas & Oil - Flowing: All Gas Zones: Estimated Current Measured Current Estimated Or Measured Original	b. (Original)	b.	b.
6. Oil Gravity ([°] API) or Gas BTU Content	1200 BTU		1153 BTU
7. Producing or Shut-In?			Producing
Production Marginal? (yes or no)	Yes		Yes
* If Shut-In, give date and oil/gas/water rates of last production	Date: Rates:	Date: Rates:	Date: Rates:
Note: For new zones with no production history, applicant shall be required to attach production estimates and supporting data			
* If Producing, give date and oil/gas/water rates of recent test (within 60 days)	Date: Rates:	Date: Rates:	Date: September 1997 Rates: .3 BOPD 119 MCFD 0 BWPD
8. Fixed Percentage Allocation Formula - % for each zone	Oil: % Gas: %	Oil: % Gas: %	Oil: % Gas: %

9. If allocation formula is based upon something other than current or past production, or is based upon some other method, submit attachments with supporting data and/or explaining method and providing rate projections or other required data.
10. Are all working, overriding, and royalty interests identical in all commingled zones? ☒ Yes ☐ No
If not, have all working, overriding, and royalty interests been notified by certified mail? ☒ Yes ☐ No
Have all offset operators been given written notice of the proposed downhole commingling? ☒ Yes ☐ No
11. Will cross-flow occur? ☐ Yes ☒ No If yes, are fluids compatible, will the formations not be damaged, will any cross-flowed production be recovered, and will the allocation formula be reliable. ☐ Yes ☐ No (If No, attach explanation)
12. Are all produced fluids from all commingled zones compatible with each other? ☒ Yes ☐ No
13. Will the value of production be decreased by commingling? ☐ Yes ☒ No (If Yes, attach explanation)
14. If this well is on, or communitized with, state or federal lands, either the Commissioner of Public Lands or the United States Bureau of Land Management has been notified in writing of this application. ☒ Yes ☐ No
15. NMOCD Reference Cases for Rule 303(D) Exceptions: ORDER NO(S). See Attached
16. ATTACHMENTS:
- C-102 for each zone to be commingled showing its spacing unit and acreage dedication.
 - Production curve for each zone for at least one year. (If not available, attach explanation.)
 - For zones with no production history, estimated production rates and supporting data.
 - Data to support allocation method or formula.
 - Notification list of all offset operators.
 - Notification list of working, overriding, and royalty interests for uncommon interest cases.
 - Any additional statements, data, or documents required to support commingling.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Heather Dahlgren TITLE Engineering Tech DATE 11/25/97

TYPE OR PRINT NAME Heather Dahlgren TELEPHONE NO. (915) 685-7665

District I
PO Box 1980, Hobbs, NM 88241-1980

District II
811 South First, Artesia, NM 88210

District III
1000 Rio Brazos Rd., Aztec, NM 87410

District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

Form C-102
Revised October 18, 1994
Instructions on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1API Number 30-039-06990	2Pool Code 71599	3Pool Name Basin Dakota
4Property Code 011510	5Property Name Rincon Unit	6Well Number 181
7OGRID No. 023708	8Operator Name Spirit Energy 76/A Business Unit of UNOCAL	9Elevation 6570

10Surface Location

UL or lot no. G	Section 22	Township 27-N	Range 6-W	Lot Idn	Feet from the 1550	North/South line North	Feet from the 1750	East/West Line East	County Rio Arriba
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11Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West Line	County
12Dedicated Acres 320.00	13Joint or Infill Y	14Consolidation Code U	15Order No. Unitized						

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

				17 OPERATOR CERTIFICATION <i>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief</i> Signature: <u>Heather Dahlgren</u> Printed Name: <u>Heather Dahlgren</u> Title: <u>Engineering Technician</u> Date: <u>November 28, 1997</u>	
				18 SURVEYOR CERTIFICATION <i>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</i> Date of Survey: _____ Signature and Seal of Professional Surveyor: _____ Certificate Number: _____	

District I
PO Box 1980, Hobbs, NM 88241-1980

District II
811 South First, Artesia, NM 88210

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Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

Form C-102
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☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-039-06990	² Pool Code 72319	³ Pool Name Blanco Mesaverde
⁴ Property Code 011510	⁵ Property Name Rincon Unit	⁶ Well Number 181
⁷ OGRID No. 023708	⁸ Operator Name Spirit Energy 76/A Business Unit of UNOCAL	⁹ Elevation 6570

¹⁰Surface Location

UL or lot no. G	Section 22	Township 27-N	Range 6-W	Lot Idn	Feet from the 1550	North/South line North	Feet from the 1750	East/West Line East	County Rio Arriba
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¹¹Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West Line	County
¹² Dedicated Acres 320.00	¹³ Joint or Infill Y	¹⁴ Consolidation Code U	¹⁵ Order No. Unitized						

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OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

	¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief Signature: <u>Heather Dahlgren</u> Printed Name: <u>Heather Dahlgren</u> Title: <u>Engineering Technician</u> Date: <u>November 28, 1997</u>
	¹⁸ SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. Date of Survey: _____ Signature and Seal of Professional Surveyor: _____ Certificate Number: _____

NMOCD Reference Cases for Rule 303(D) Exceptions

Unocal, Rincon Unit, Rio Arriba County, New Mexico

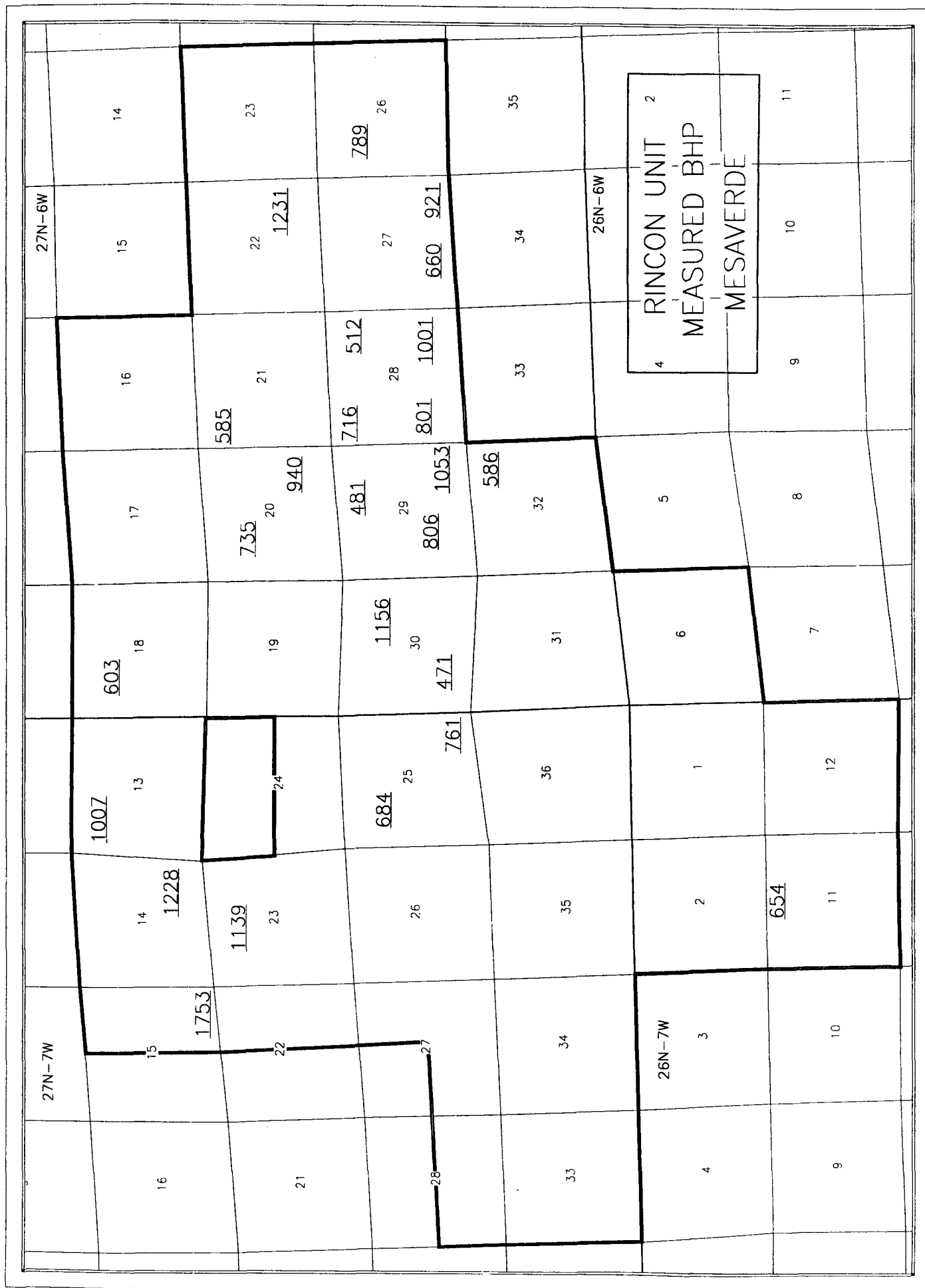
Rincon Unit Well	Legal Description	NMOCD Order No.	Issue Date
302	C S 11 T 26 N R 7 W	DHC-1050	11/3/94
134	B S 12 T 26 N R 7 W	DHC-1190	3/7/96
159M	F S 18 T 27 N R 6 W	DHC-904	6/18/93
174M	F S 19 T 27 N R 6 W	DHC-966	1/31/94
170	M S 20 T 27 N R 6 W	DHC-1192	3/7/96
170M	I S 20 T 27 N R 6 W	DHC-920	9/17/93
175M	F S 20 T 27 N R 6 W	DHC-864	11/24/92
171M	J S 21 T 27 N R 6 W	DHC-1101	3/7/95
180M	D S 21 T 27 N R 6 W	DHC-940	10/25/93
158M	J S 22 T 27 N R 6 W	DHC-909	4/27/93
125M	F S 26 T 27 N R 6 W	DHC-95	9/17/93
126M	P S 27 T 27 N R 6 W	DHC-914	9/17/93
127M	D S 28 T 27 N R 6 W	DHC-916	8/17/93
128M	O S 28 T 27 N R 6 W	DHC-1042	8/31/94
129M	P S 29 T 27 N R 6 W	DHC-903	6/18/93
1E	G S 30 T 27 N R 6 W	DHC-902	6/18/93
303	E S 33 T 27 N R 6 W	DHC-1086	2/3/95
186M	L S 33 T 27 N R 6 W	DHC-1176	12/21/95
167M	C S 13 T 27 N R 7 W	DHC-863	11/5/92
151M	O S 14 T 27 N R 7 W	DHC-918	9/17/93
133E	D S 14 T 27 N R 7 W	DHC-1043	8/31/94
184M	P S 15 T 27 N R 7 W	DHC-911	8/25/93
185E	J S 22 T 27 N R 7 W	DHC-1038	8/31/94
136E	D S 23 T 27 N R 7 W	DHC-912	9/17/93
178E	I S 23 T 27 N R 7 W	DHC-1040	8/31/94
138E	P S 25 T 27 N R 7 W	DHC-1044	8/31/94
139E	F S 25 T 27 N R 7 W	DHC-1041	8/31/94
203	M S 27 T 27 N R 7 W	DHC-1261	5/23/96
149M	F S 30 T 27 N R 7 W	DHC-1037	8/31/94
229E	M S 34 T 27 N R 7 W	DHC-1124	5/16/95
187E	P S 35 T 27 N R 7 W	DHC-1176	12/21/95
131E	C S 36 T 27 N R 7 W	DHC-1039	8/31/94
168E	I S 36 T 27 N R 7 W	DHC-1191	3/7/96
183	K S 31 T 27 N R 6 W	DHC-1376	10/16/96

RINCON UNIT DK/MV COMMINGLE BOTTOMHOLE PRESSURE DATA
(Measured - 7 day SI)

	<u>WELL</u>	<u>MV BHP (PSI)</u>	<u>DK BHP ADJ TO MV DATUM (PSI)</u>	<u>% DIFF</u>
*	1E	1156	1690	32
*	125M	789	1548	49
*	126	660	850	22
*	126M	921	1607	43
*	127	512	580	12
*	127M	716	1280	44
*	128	801	781	2
**	128M	1001	1000	0
*	129	806	836	4
*	129M	1053	935	11
*	130	586	622	6
*	135	481	736	35
*	136E	1139	2199	48
*	137	400	686	42
**	138E	684	1100	38
**	139E	761	1300	41
*	149	471	521	10
*	151M	1228	1862	34
*	158M	1231	766	38
*	159M	603	583	3
*	167M	1007	1909	47
*	170M	940	1752	46
*	175M	735	1108	34
*	180M	585	788	26
*	184M	1753	1708	3
**	302	654	1225	47

DK ZONE TAKEN AS DATUM

- * 1993 TEST DATA
- ** 1994 TEST DATA



GAS ANALYSIS

WELL NAME	ZONE	TEST DATE	NITROGEN	CO2	METHANE	ETHANE	PROPANE	I-BUTANE	N-BUTANE	I-PENTANE	N-PENTANE	HEXANE+	BTUS	GPM	SPEC GRAV
RINCON #1E	DK	11/23/94	0.310	1.150	88.570	8.980	2.780	0.500	0.730	0.270	0.20	0.530	1159.0	3.424	0.870
	MV	11/23/94	0.310	1.150	88.570	8.980	2.780	0.500	0.730	0.270	0.20	0.530	1159.0	3.424	0.870
	DK	08/10/94	0.280	1.160	85.010	7.870	3.250	0.830	0.650	0.360	0.23	0.590	1184.0	3.590	0.885
RINCON #125M	MV	08/10/94	0.280	1.160	85.010	7.870	3.250	0.830	0.650	0.360	0.23	0.590	1184.0	3.590	0.885
	DK	11/17/94	0.218	1.320	87.850	6.430	2.000	0.610	0.520	0.280	0.18	0.820	1141.0	3.034	0.860
	MV	11/18/94	0.460	1.070	83.050	6.230	4.220	0.790	1.090	0.370	0.24	0.480	1207.0	4.390	0.701
RINCON #128	DK	12/07/93	0.290	1.050	87.510	6.480	2.770	0.540	0.680	0.270	0.17	0.230	1140.4	3.139	0.858
	MV	12/07/93	0.280	1.050	87.840	6.480	2.770	0.540	0.680	0.270	0.17	0.230	1140.4	3.139	0.858
	DK	09/15/93	0.280	1.020	84.870	8.010	2.840	0.860	0.600	0.430	0.25	0.580	1182.1	3.927	0.888
RINCON #127	MV	05/13/92	0.380	1.020	81.780	10.620	4.220	0.800	0.840	0.260	0.19	0.160	1188.0	4.878	0.894
	DK	11/17/94	0.300	1.240	84.850	8.010	3.050	0.800	0.800	0.340	0.23	0.580	1180.0	3.892	0.834
	MV	11/17/94	0.300	1.240	84.850	8.010	3.050	0.800	0.800	0.340	0.23	0.580	1180.0	3.892	0.834
RINCON #127M	DK	11/18/94	0.830	1.380	84.060	8.490	3.880	0.840	0.890	0.370	0.38	0.800	1192.0	4.188	0.892
	MV	11/18/94	0.460	0.760	78.710	10.320	5.030	0.880	1.380	0.470	0.35	0.820	1260.0	5.443	0.730
	DK	04/15/94	0.280	1.000	86.830	7.120	2.350	0.820	0.850	0.280	0.18	0.480	1151.0	3.317	0.858
RINCON #129	MV	03/28/94	0.550	0.690	78.100	11.220	8.500	0.840	1.060	0.430	0.36	0.560	1259.0	6.588	0.727
	DK	10/23/94	0.270	1.160	81.230	8.850	4.130	0.780	1.120	0.480	0.31	0.890	1232.0	4.948	0.717
	MV	10/23/94	0.270	1.160	81.230	8.850	4.130	0.780	1.120	0.480	0.31	0.890	1232.0	4.948	0.717
RINCON #130	DK	04/15/94	0.580	0.730	78.650	10.230	6.830	0.830	0.820	0.350	0.22	0.600	1188.0	4.120	0.890
	MV	04/13/94	0.430	1.240	84.220	8.530	8.970	0.840	0.820	0.350	0.22	0.340	1169.0	4.254	0.887
	DK	08/15/93	0.220	1.080	83.800	8.320	3.440	0.590	0.890	0.307	0.24	0.376	1177.1	3.830	0.876
RINCON #138E	MV	12/12/92	0.218	1.072	84.804	8.487	3.185	0.484	0.824	0.307	0.24	0.410	1176.0	3.888	0.876
	DK	11/11/94	0.210	1.120	84.930	8.400	3.100	0.520	0.850	0.280	0.18	0.410	1176.0	3.888	0.876
	MV	11/11/94	0.440	0.600	77.270	12.180	5.890	0.840	1.600	0.480	0.32	0.480	1288.0	8.138	0.744
RINCON #137	DK	11/18/94	0.380	1.200	86.310	8.080	1.900	0.860	0.690	0.250	0.19	0.450	1134.0	2.905	0.855
	MV	11/30/94	0.360	1.180	84.830	7.900	3.110	0.810	0.960	0.390	0.27	0.680	1168.0	3.864	0.888
	DK	10/07/94	0.830	1.010	82.800	9.810	3.950	0.860	1.020	0.370	0.38	0.410	1210.0	4.800	0.898
RINCON #161M	MV	10/07/94	0.230	1.010	82.800	9.810	3.950	0.860	1.020	0.370	0.38	0.410	1210.0	4.800	0.898
	DK	12/08/93	0.280	1.040	86.780	7.010	8.800	0.850	0.710	0.300	0.19	0.330	1152.0	3.371	0.883
	MV	12/08/93	0.280	1.040	86.780	7.010	8.800	0.850	0.710	0.300	0.19	0.330	1152.0	3.371	0.883
RINCON #168M	DK	11/10/94	0.240	1.090	83.010	8.160	3.680	0.710	0.830	0.380	0.24	0.550	1207.0	4.458	0.898
	MV	11/10/94	0.240	1.090	83.010	8.160	3.680	0.710	0.830	0.380	0.24	0.550	1207.0	4.458	0.898
	DK	10/14/94	0.230	1.010	88.080	7.820	2.880	0.540	0.770	0.280	0.18	0.410	1185.0	3.805	0.871
RINCON #167M	MV	10/14/94	0.230	1.010	88.080	7.820	2.880	0.540	0.770	0.280	0.18	0.410	1185.0	3.805	0.871
	DK	10/31/94	0.330	1.120	83.840	8.800	3.640	0.870	0.890	0.340	0.21	0.380	1180.0	4.214	0.888
	MV	10/31/94	0.330	1.120	83.840	8.800	3.640	0.870	0.890	0.340	0.21	0.380	1180.0	4.214	0.888
RINCON #170M	DK	11/28/94	0.360	1.140	82.250	8.290	3.880	0.710	1.040	0.410	0.28	0.640	1217.0	4.844	0.707
	MV	11/28/94	0.360	1.140	82.250	8.290	3.880	0.710	1.040	0.410	0.28	0.640	1217.0	4.844	0.707
	DK	09/28/94	0.270	1.170	85.810	7.490	2.830	0.800	0.740	0.310	0.19	0.580	1171.0	3.852	0.877
RINCON #180M	MV	08/28/94	0.270	1.170	85.810	7.490	2.830	0.800	0.740	0.310	0.19	0.580	1171.0	3.852	0.877
	DK	12/30/93	0.260	1.010	81.930	9.880	4.090	0.880	1.080	0.400	0.29	0.716	1286.0	4.807	0.711
	MV	12/30/93	0.260	1.010	81.930	9.880	4.090	0.880	1.080	0.400	0.29	0.716	1286.0	4.807	0.711
RINCON #184M	DK	12/30/93	0.280	1.010	81.930	9.880	4.090	0.880	1.080	0.400	0.29	0.716	1286.0	4.807	0.711
	MV	12/30/93	0.280	1.010	81.930	9.880	4.090	0.880	1.080	0.400	0.29	0.716	1286.0	4.807	0.711
	DK	12/30/93	0.280	1.010	81.930	9.880	4.090	0.880	1.080	0.400	0.29	0.716	1286.0	4.807	0.711

EXHIBIT 'A'

To allow for flush production for a period of less than 24 months:

$$Q1n = qi(e^{-D(t-0.5)})(365/12) \text{ and } Q2n = Qn - Q1n;$$

When: $Qn < Q1n$;

$$\text{Then: } Q1n = Qn(Q1(n-1)/(Q1(n-1) + Q2(n-1))) \text{ and } Q2n = Qn(Q2(n-1)/(Q1(n-1) + Q2(n-1)));$$

And to allow for flush production for a period of more than 24 months:

$$Q1n = Qn(Q1(24)/(Q1(24) + Q2(24))) \text{ and } Q2n = Qn(Q2(24)/(Q1(24) + Q2(24)));$$

Where:

qi	Average three month production rate of the existing completion prior to downhole commingling in Mcfd
D	Effective monthly decline rate of the existing completion (1/months)
Qn	Total commingled production, for the n th month, after n months of commingled production in Mcfd.
$Q1n$	Total production for the existing completion, for the n th month, after n months of commingled production in Mcfd.
$Q2n$	Total production for the new completion, for the n th month, after n months of commingled production in Mcfd.
t	Time from beginning of commingled production (months)

RINCON MESAVERDE RECOMPLETIONS
MONTHLY GAS PRODUCTION DATA - SEPARATELY METERED VOLUMES

WELL:	11E	150E	187E	188	231	180M
ZONE:	MV	MV	MV	MV	MV	MV
COMPL:	DUAL	DUAL	DUAL	SINGLE	SINGLE	DHC*
1st Deliv:	04/01/97	12/18/95	01/31/98	12/27/98	01/10/97	10/29/92
IP (MCFD):	253	150	490	350	185	450

AVG IP	310
MIN IP	150
MAX IP	490

MONTH	GAS VOLUME	PDGAS RATE	GAS VOLUME	PDGAS RATE	GAS VOLUME	PDGAS RATE	GAS VOLUME	PDGAS RATE	GAS VOLUME	PDGAS RATE	WELLS ON	AVG VOL	AVG RATE	MIN RATE	MAX RATE	MON VOL**
IP		253		150		490		350		185						
1	9151	305	4291	390	486	486	980	192	8116	386	6	5035	338	192	488	5065
2	4288	143	7988	258	8238	284	6283	203	8140	291	6	7099	257	143	365	7205
3	3678	123	4969	171	4544	147	4850	173	7198	232	6	5482	182	123	247	5647
4	2631	138	4809	155	2922	104	4769	154	5828	194	6	4276	152	104	194	4565
5	3181	132	3883	155	3296	132	3922	131	5157	172	6	4212	152			4707
6	2488	104	4003	129	2969	99	4332	144	3685	244	6	3668	145			4355
7			3493	116	2882	93	3593	120	4375	141	5	3534	115			3577
8			2989	96	2807	91	3134	157	3655	332	5	3032	152			3286
9			2885	93	2293	92	3620	117			4	2852	87			2895
10			2672	107	2184	70					3	2289	87			2707
11			2652	86	2059	69					3	2191	72			2170
12			2396	80	2259	73					3	2197	72			2222

* 180M MV produced for 12 months prior to DHC with DK

** Monthly volumes used to forecast first 12 months of Mesaverde production

1996 MV RECOMPLETION - EXAMPLE CASE FOR OIL FORECAST

WELL:	183
ZONE:	DK/MV DHC
COMPL:	12/20/96
MV 1st Deliv:	
MV IP (BOPD):	0.5

MONTH	OIL VOLUME	PDOIL RATE	WATER VOLUME	PDWAT RATE	AVG PDOIL	AVG PDWAT
1	16	0.5	17	0.5		
2	32	1.1	17	0.6		
3	26	0.8	23	0.7		
4	10	0.3	7	0.2		
5	25	0.8	17	0.5		
6	27	0.9	3	0.1		
7	22	0.7	2	0.1		
8	20	0.6	9	0.3		
9	8	0.3	3	0.1		
10	9	0.3	8	0.3		
11	4	0.7	3	0.5	0.6	0.4
12	0	0	0	0.0		
13	137	4.4	25	0.8		
14	43	1.5	33	1.2		
15	50	1.6	17	0.5		
16	44	1.5	20	0.7		
17	26	0.9	20	0.7		
18	0	0	20	0.7		
19	31	1	20	0.6		
20	24	0.8	20	0.6		
21	27	0.9	20	0.6	1.4	0.7

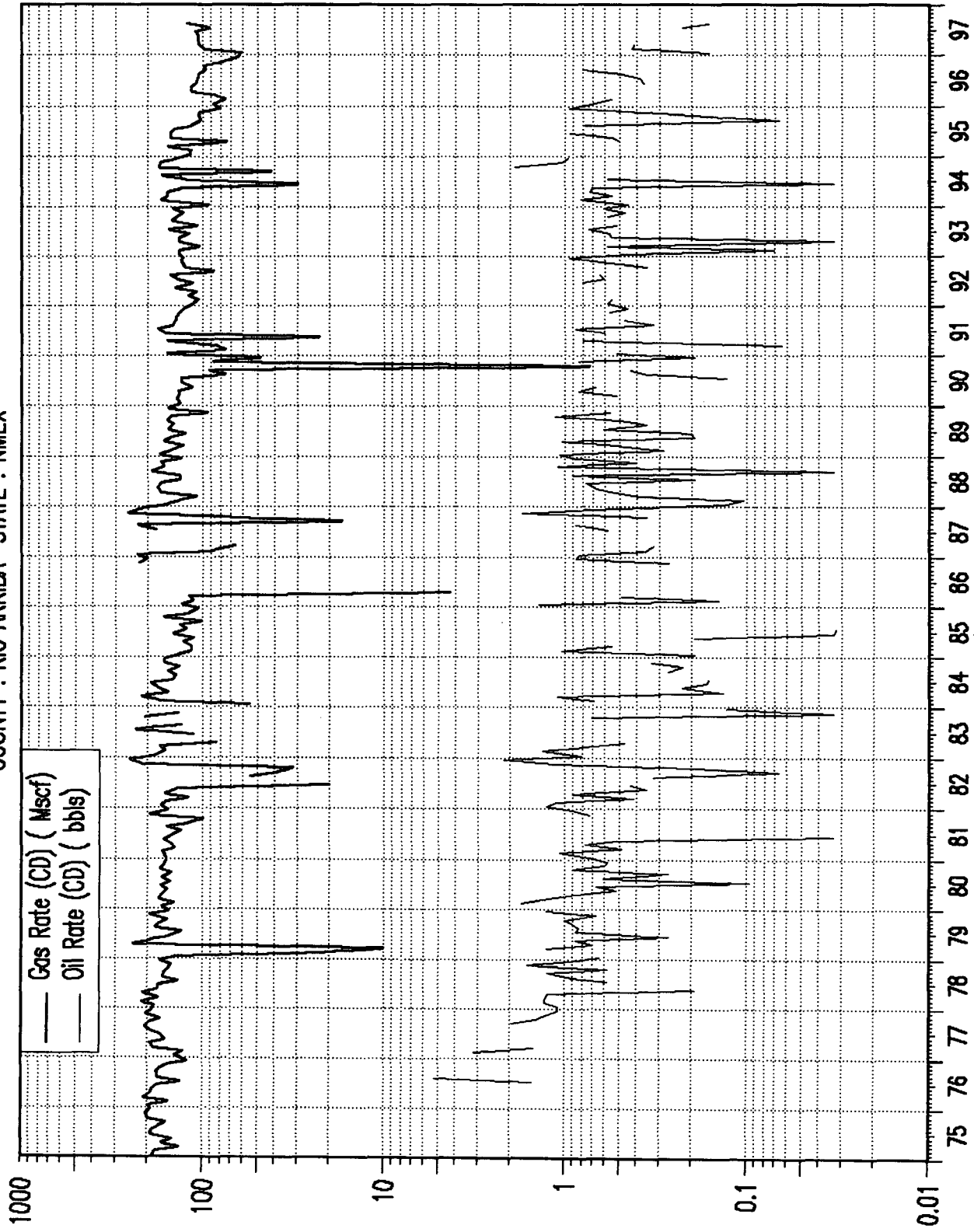
Dakota volumes prior to commingling

DK/MV commingle oil / water volumes

WELL: RINCON UNIT 181:DK

LOCATION : N027 W006 22 SWNE

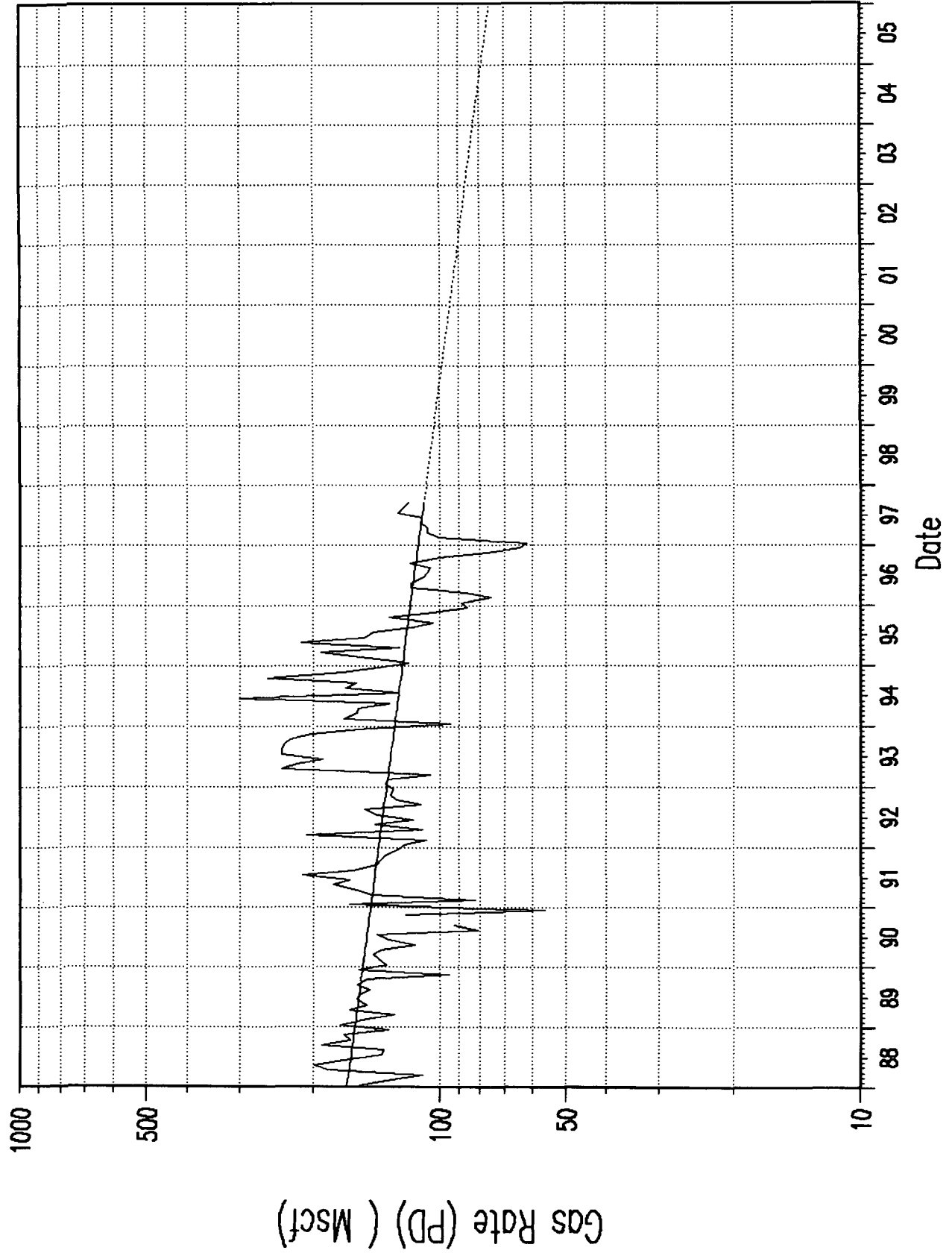
COUNTY : RIO ARriba STATE : NMEX



WELL: RINCON UNIT 181:DK
 LOCATION : N027 W006 22 SWNE
 COUNTY : RIO ARriba STATE : NMEX

DATE	DAYS ON PROD Days	OIL VOL PROD bbls	GAS VOL PROD Mscf	WATER VOL PROD bbls	OIL RATE (PD) bbls	GAS RATE (PD) Mscf	WATER RATE (PD) bbls	CUM OIL PROD bbls	CUM GAS PROD Mscf
9601	31	22	2741	12	0.7	88	0	9733	2073080
9602	29	16	2186	8	0.6	75	0	9749	2075266
9603	31	0	2682	11	0.0	87	0	9749	2077948
9604	30	25	3497	13	0.8	117	0	9774	2081445
9605	31	0	3628	11	0.0	117	0	9774	2085073
9606	30	11	3267	11	0.4	109	0	9785	2088340
9607	31	12	3318	11	0.4	107	0	9797	2091658
9608	31	15	3264	14	0.5	105	0	9812	2094922
9609	25	24	2931	14	1.0	117	1	9836	2097853
9610	31	0	3096	8	0.0	100	0	9836	2100949
9611	30	19	2319	9	0.6	77	0	9855	2103268
9612	31	0	1994	12	0.0	64	0	9855	2105262
9701	31	5	1923	3	0.2	62	0	9860	2107185
9702	28	12	2812	5	0.4	100	0	9872	2109997
9703	31	13	3316	7	0.4	107	0	9885	2113313
9704	30	0	3203	1	0.0	107	0	9885	2116516
9705	30	11	3309	1	0.4	110	0	9896	2119825
9706	30	0	3304	1	0.0	110	0	9896	2123129
9707	23	7	2885	1	0.3	125	0	9903	2126014
9708	31	5	3788	1	0.2	122	0	9908	2129802
9709	31	9	3681	1	0.3	119	0	9917	2133483

WELL: RINCON UNIT 181:DK
LOCATION : N027 W006 22 SWNE
COUNTY : RIO ARriba STATE : NMEX



WELL: RINCON UNIT 181:DK

Case Name : New
Case Analyst :
Case Comment :
Cum. Gas Production: 2129802.00 Mscf
Remaining Recoverable Gas Reserves: 664858.78 Mscf
Ultimate Recoverable Gas Reserves: 2794660.78 Mscf

Decline Equation: $Q = Q_i * \exp(-D_i * t)$ t = Elapsed Months from 7501

Qi: 292.89 Mscf
Di: 0.003647
Hyperbolic B: 0.0000
Start Date: 1997/09
Monthly Effective Decline (De): 0.003641
Yearly Effective Decline (De): 0.042825
Initial Forecast Rate: 109.00 Mscf
Economic Limit: 15.00 Mscf
Capacity Limit: 0.00 Mscf
Cumulative Produced: 2129802.00 Mscf
Schedule Forecasted Reserves: 664858.78 Mscf
Total Forecasted Reserves: 664858.78 Mscf
Total Recovered Reserves: 2794660.78 Mscf

DATE	INSTANT. DAILY RATE Mscf	AVERAGE DAILY RATE Mscf	MONTHLY FORECAST PROD. Mscf	CUM. PROD. Mscf	REMAINING RECOV. RESERVES Mscf
1997/09	108.60	108.80	3264.06	2133066.00	661594.69
1997/10	108.21	108.40	3360.54	2136426.50	658234.13
1997/11	107.81	108.01	3240.34	2139667.00	654993.81
1997/12	107.42	107.62	3336.10	2143003.00	651657.69
1998/01	107.03	107.23	3324.03	2146327.00	648333.69
1998/02	106.64	106.84	2991.40	2149318.50	645342.25
1998/03	106.25	106.44	3299.78	2152618.25	642042.50
1998/04	105.87	106.06	3181.79	2155800.00	638860.69
1998/05	105.48	105.67	3275.86	2159076.00	635584.88
1998/06	105.10	105.29	3158.64	2162234.50	632426.19
1998/07	104.71	104.90	3252.00	2165486.50	629174.19
1998/08	104.33	104.52	3240.19	2168726.75	625934.00
1998/09	103.95	104.14	3124.31	2171851.00	622809.69
1998/10	103.57	103.76	3216.59	2175067.75	619593.13
1998/11	103.20	103.39	3101.60	2178169.25	616491.50
1998/12	102.82	103.01	3193.25	2181362.50	613298.25
1999/01	102.45	102.63	3181.64	2184544.00	610116.63
1999/02	102.07	102.26	2863.26	2187407.50	607253.38
1999/03	101.70	101.89	3158.55	2190566.00	604094.81
1999/04	101.33	101.52	3045.50	2193611.50	601049.31
1999/05	100.96	101.15	3135.54	2196747.00	597913.81
1999/06	100.60	100.78	3023.35	2199770.25	594890.44
1999/07	100.23	100.41	3112.77	2202883.00	591777.69
1999/08	99.86	100.05	3101.43	2205984.50	588676.25
1999/09	99.50	99.68	2990.47	2208975.00	585685.75
1999/10	99.14	99.32	3078.93	2212054.00	582606.81

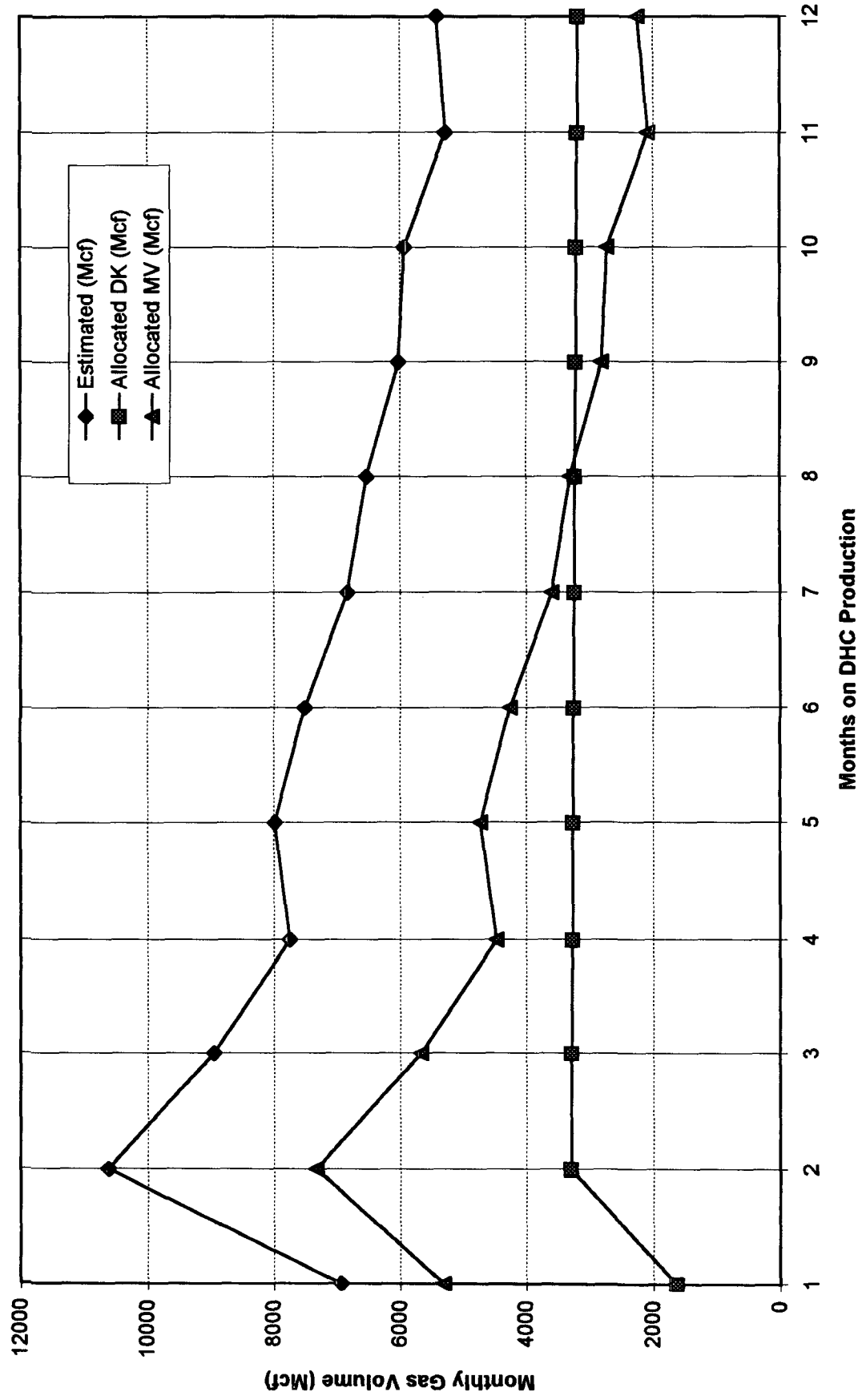
Gas Forecast

Well	RU 181		Comments
First Delivery Date (As DHC)	Estimated	16-Jan-98	
Days on First Month	Estimated	15	
Existing Completion Prior to DHC		DK	
Effective Monthly Decline		0.0036	4.3% Annual Decline
Average 3 month rate (Mcf) prior to DHC		109	Apr-June Average per Day (full months)
New Completion		MV	
Initial Test (Mcf)	Estimated	310	Avg. IP (New MV metered separately - 6)

Month	Estimated (Mcf)	DK Forecast (Mcf)	MV Forecast (Mcf)	Allocated DK (Mcf)	Allocated MV (Mcf)	Allocated MV (%)	
1	6940	1875	5065	1632	5308	76	Est. flush DK rate 125 mcfd
2	10621	3416	7205	3297	7324	69	Est. flush DK rate 122 mcfd
3	8946	3299	5647	3285	5661	63	
4	7746	3181	4565	3273	4473	58	
5	7982	3275	4707	3262	4720	59	
6	7513	3158	4355	3250	4263	57	
7	6829	3252	3577	3238	3591	53	
8	6526	3240	3286	3226	3300	51	
9	6019	3124	2895	3214	2805	47	
10	5923	3216	2707	3203	2720	46	
11	5271	3101	2170	3191	2080	39	
12	5415	3193	2222	3179	2236	41	

Chart2

RU 181



Oil Forecast

Well	RU 181
First Delivery Date (As DHC)	16-Jan-98
Days on First Month	15
Existing Completion Prior to DHC	DK
Yield (bbls/mcf)	0.002
Average 1997 rate (BOPD) prior to DHC	0.2
New Completion	MV
Initial Test (BOPD)	5

Estimated	
Estimated	
Estimated	

Month	Estimated (Bbl)	DK Forecast (Bbl)	MV Forecast (Bbl)	Est. MV (BOPD)	Allocated MV (%)	DK .003 (bbl/mcf)
1	81	6	75	5.0	93%	DK .003 (bbl/mcf)
2	72	10	62	2.2	86%	DK .003 (bbl/mcf)
3	38	7	31	1.0	82%	
4	19	4	15	0.5	77%	
5	12	4	8	0.3	64%	
6	10	4	6	0.2	58%	
7	11	4	6	0.2	59%	
8	9	4	5	0.2	52%	
9	9	4	5	0.2	51%	
10	7	4	3	0.1	41%	
11	7	4	3	0.1	41%	
12	7	4	3	0.1	40%	

RINCON UNIT NO. 181

After a 7 day SI period:

Mesaverde BHP = 552 psi 4995' (Mid perf) Calc. BHP from offset MV #29 - Apr. 1995

Dakota BHP = 379 psi 7554' (Mid perf) Calc. BHP from 7 day SITP - Sept. 1996

$$\text{Gas Gradient} = \frac{(.0135)(.65)(2559)}{(.97)(655)} = 0.035 \text{ psi/ft}$$

Adjusting to a common datum of 4995':

Mesaverde BHP = 552 psi

$$\text{Dakota BHP} = 379 - [(0.035)(7554-4995)] = 289 \text{ psi}$$

Therefore the reservoir pressures fall within the 50% requirement.

--BHPCALC--

Calculate BHP and Z-factor from surface shut-in pressure

11/23/97

WELL NAME : RINCON UNIT #181
GAS GRAVITY: 0.65 % N2 0.81
CONDENSATE (YES=1): 1 % CO2 1.33 %
RESERVOIR TEMP: 195 F % H2S 0.00 %
SURFACE TEMP: 60 F Pc = 672.72 %
DEPTH OF ZONE: 7554 Foot Tc = 368.63

SURFACE PRES	BHP	Z	BHP/Z
Psia	psia		psia
322	379	0.9696	391

Entity : RINCON UNIT (011510)
 Field : BASIN (4100)
 Reservoir: DAKOTA (604)
 Operator : UNION OIL COMPANY OF CALIFORNIA (34551)
 Location : S22 T27N R6W G RIO ARBA
 Basin : SAN JUAN (580)
 Zone : DAKOTA (602DKOT)
 District : AZTEC
 API : 30039069900000

Product: GAS
 Start : 196209
 Stop : 199703
 Status : ACTIVE
 Well # : 181
 Upper : 7460
 Lower : 7649
 Lat : 36.56287
 Lng : 107.45118

Test Information

Date	Gas MCFD	Liq Bbls	** SITP	Pressures FTP	CLP	P/Z Factor	Cond Cum at Test	Gas Cum at Test
19620927	4681	0.0	2528	370	989	3780 0.832	6912	1297494
19790726	146	0.0	732	325		1001 0.897	7414	1413170
19810706	128	0.0	756	291		1039 0.894	7858	1519838
19831102	238	0.0	845	426		1178 0.882	8022	1605145
19850710	133	0.0	749	320		1028 0.895	8423	1729216
19880831	154	0.0	617	357		830 0.913	8829	1835554
19901007	105	0.0	592	387		793 0.916	9110	1918714
19920921	150	0.0	562	328		750 0.920	9427	2001458
19940617	126	0.0	572	158		764 0.919	9826	2091729
19960913	106	0.0	322	126		419 0.953		

--BHPCALC--

Calculate BHP and Z-factor from surface shut-in pressure

11/23/97

WELL NAME : RINCON UNIT #29
GAS GRAVITY: 0.65 % N2 0.30
CONDENSATE (YES=1): 1 % CO2 1.10 %
RESERVOIR TEMP: 150 F % H2S 0.00 %
SURFACE TEMP: 60 F Pc = 672.44 %
DEPTH OF ZONE: 4929 Foot Tc = 369.82

SURFACE PRES	BHP	Z	BHP/Z
psia	psia		psia
492	552	0.9432	585

Entity : RINCON UNIT (011510)
 Field : BLANCO (5900)
 Reservoir: MESAVERDE (625)
 Operator : UNION OIL COMPANY OF CALIFORNIA (34551)
 Location : S22 T27N R6W A RIO ARBA
 Basin : SAN JUAN (580)
 Zone : MESAVERDE (604MVRD)
 District : AZTEC
 API : 30039070010000

Product: GAS
 Start : 195411
 Stop : 199703
 Status : ACTIVE
 Well # : 29
 Upper : 4810
 Lower : 5350
 Lat : 36.56441
 Lng : 107.44871

Test Information

Date	Gas MCFD	Liq Bbls	** SITP	Pressures FTP	CLP	P/Z Factor	Cond Cum at Test	Gas Cum at Test
19541116	2827	0.0	1110		1545	0.831		
19800616	23	0.0	547	355	692	0.914	4644	1539947
19820518	35	0.0	551	317	697	0.914	4644	1565387
19840726	31	0.0	567	365	712	0.920	4644	1579250
19860918	41	0.0	557	325	705	0.913	4644	1590479
19890929	42	0.0	522	304	658	0.918	4750	1620050
19910801	22	0.0	577	416	732	0.910	4815	1626646
19930801	23	0.0	532	174	672	0.916	4908	1638569
19950427	24	0.0	492	98	617	0.923	4973	1650824

1779

January 24, 1998

Supplemental Data for C-107-A, Rincon Unit Well No. 181

Union Oil Company of California d.b.a. UNOCAL requests approval to down-hole commingle hydrocarbon production from the Blanco Mesa Verde and Basin Dakota formations in the following Rincon Unit well, Rio Arriba County, New Mexico.

Well	Lease	Legal Location
181	Federal	1550' FNL, 1750' FEL, NE Sec 22, T27N, R6W

A revised C-107-A is attached.

As provided by Order No. R-9893, administrative approval may be granted without notice and hearing.

Well History: This well was drilled and completed with 4-1/2" casing, in September 1962, in the Dakota formation. Estimated Mesaverde completion date is late February, 1998.

Production History: Average Dakota production prior to commingling is 109 Mcfd with trace oil and water production. Based on actual IP's and production from recent Mesaverde recompletions on the Rincon Unit, an estimated initial rate for the first 30 days of Mesaverde production is 338 Mcfd and 4 Bopd. See attachments 1a. through 1c. the for supporting data of this estimate.

Pressure Data: Bottom hole pressures were obtained from surface shut-in casing pressures and bottom hole pressure build-up tests. Please see attachment 2a. for the bottom hole calculation, date and duration of the test for the original Dakota pressure. Current Dakota pressure was measured with a bottom hole pressure build-up test conducted July 23rd, 1997 through August 8th, 1997. The Mesaverde original pressure estimate is the average of the bottom hole pressure measurements taken on 18 new Mesaverde completions drilled in 1992 and 1994. These BHP measurements while conducted in 1993 and 1994, are representative of the pressure ranges that will be seen in a new Mesaverde completion on the Rincon Unit. Please see attachment 3. for this list of pressures. Original and current pressures have been supplied, however, for the direct Mesaverde offset to this well. See attachments 2b. and 2c. for the data on the Rincon Unit well no. 29 drilled in 1954.

Allocation of Production: Unocal proposes to use an allocation method based on an established Dakota annual decline rate of 4.3%. Dakota production will be extrapolated monthly using Bureau of Land Management recommended allocation methods with the remainder of the commingled production being allocated to the Mesaverde formation. See attachments 4a. and 4b. for the Dakota forecast. Tabular data has been provided for the first five years of the Dakota forecast. Please note that initial flush production volumes have been added to the Dakota forecast due to the anticipated extended shut-in period. We anticipate being able to convert to a fixed allocation factor within 12 to 24 months of commingled production. Unocal also proposes to use a yield factor for allocating liquid production. This factor represents the average yield for oil and water production over the last two years of actual production. Please see attachment 5. for 24 months of forecasted gas and liquid volumes.

DISTRICT I

P.O. Box 1980, Hobbs, NM 88241-1980

DISTRICT II

811 South First St., Artesia, NM 88210-2835

DISTRICT III

1000 Rio Brazos Rd, Aztec, NM 87410-1693

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

2040 S. Pacheco
Santa Fe, New Mexico 87505-6429Form C-107-A
New 3-12-96

APPROVAL PROCESS:

☒ Administrative ☐ Hearing

EXISTING WELLBORE

☒ YES ☐ NO

APPLICATION FOR DOWNHOLE COMMINGLING

UNION OIL COMPANY OF CALIFORNIA 1004 N. BIG SPRING, MIDLAND TX 79702
 Operator Address
 RINCON UNIT 181 G 22 T27N R6W RIO ARRIBA
 Lease Well No. Unit Ltr. - Sec - Twp - Rge County
 OGRID NO. 023708 Property Code 011510 API NO. 30-039-06990 Spacing Unit Lease Types. (check 1 or more)
 Federal ☒ State ☐ (and/or) Fee ☐

The following facts are submitted in support of downhole commingling:	Upper Zone	Intermediate Zone	Lower Zone
1. Pool Name and Pool Code	BLANCO MESAVERDE 72319		BASIN DAKOTA 71599
2. Top and Bottom of Pay Section (Perforations)	PROPOSED 5489 - 5536		7460 - 7649
3. Type of production (Oil or Gas)	GAS		GAS
4. Method of Production (Flowing or Artificial Lift)	FLOWING		FLOWING
5. Bottomhole Pressure Oil Zones - Artificial Lift: Gas & Oil - Flowing: All Gas Zones: Estimated Current Measured Current Estimated Or Measured Original	a. (Current) Estimated 942 psia b. (Original) Estimated 942 psia	a. b.	a. 8-8-97 504 psig b. 9-27-62 3168 psia
6. Oil Gravity ($^{\circ}$ API) or Gas BTU Content	1184 BTU		1113 BTU
7. Producing or Shut-In?	Not completed		PRODUCING
Production Marginal? (yes or no)	YES		YES
* If Shut-In, give date and oil/gas/water rates of last production Note: For new zones with no production history, applicant shall be required to attach production estimates and supporting data	Date: Rates:	Date: Rates:	Date: Rates:
* If Producing, give date and oil/gas/water rates of recent test (within 60 days)	Date: Rates:	Date: Rates:	Date: 10-97 Rates: 112 mcf/d, .1 bopd 0 bwpd
8. Fixed Percentage Allocation Formula - % for each zone	Oil: % Gas: %	Oil: % Gas: %	Oil: % Gas: %

9. If allocation formula is based upon something other than current or past production, or is based upon some other method, submit attachments with supporting data and/or explaining method and providing rate projections or other required data.

10. Are all working, overriding, and royalty interests identical in all commingled zones? Yes ☒ No ☐
 If not, have all working, overriding, and royalty interests been notified by certified mail? R-9893 Yes ☐ No ☐
 Have all offset operators been given written notice of the proposed downhole commingling? ☒ Yes ☐ No

11. Will cross-flow occur? Yes ☐ No ☒ If yes, are fluids compatible, will the formations not be damaged, will any cross-flowed production be recovered, and will the allocation formula be reliable. Yes ☐ No ☐ (If No, attach explanation)

12. Are all produced fluids from all commingled zones compatible with each other? ☒ Yes ☐ No

13. Will the value of production be decreased by commingling? Yes ☐ No ☒ (If Yes, attach explanation)

14. If this well is on, or communitized with, state or federal lands, either the Commissioner of Public Lands or the United States Bureau of Land Management has been notified in writing of this application. ☒ Yes ☐ No

15. NMOCD Reference Cases for Rule 303(D) Exceptions: ORDER NO(S). SEE ATTACHED

16. ATTACHMENTS:

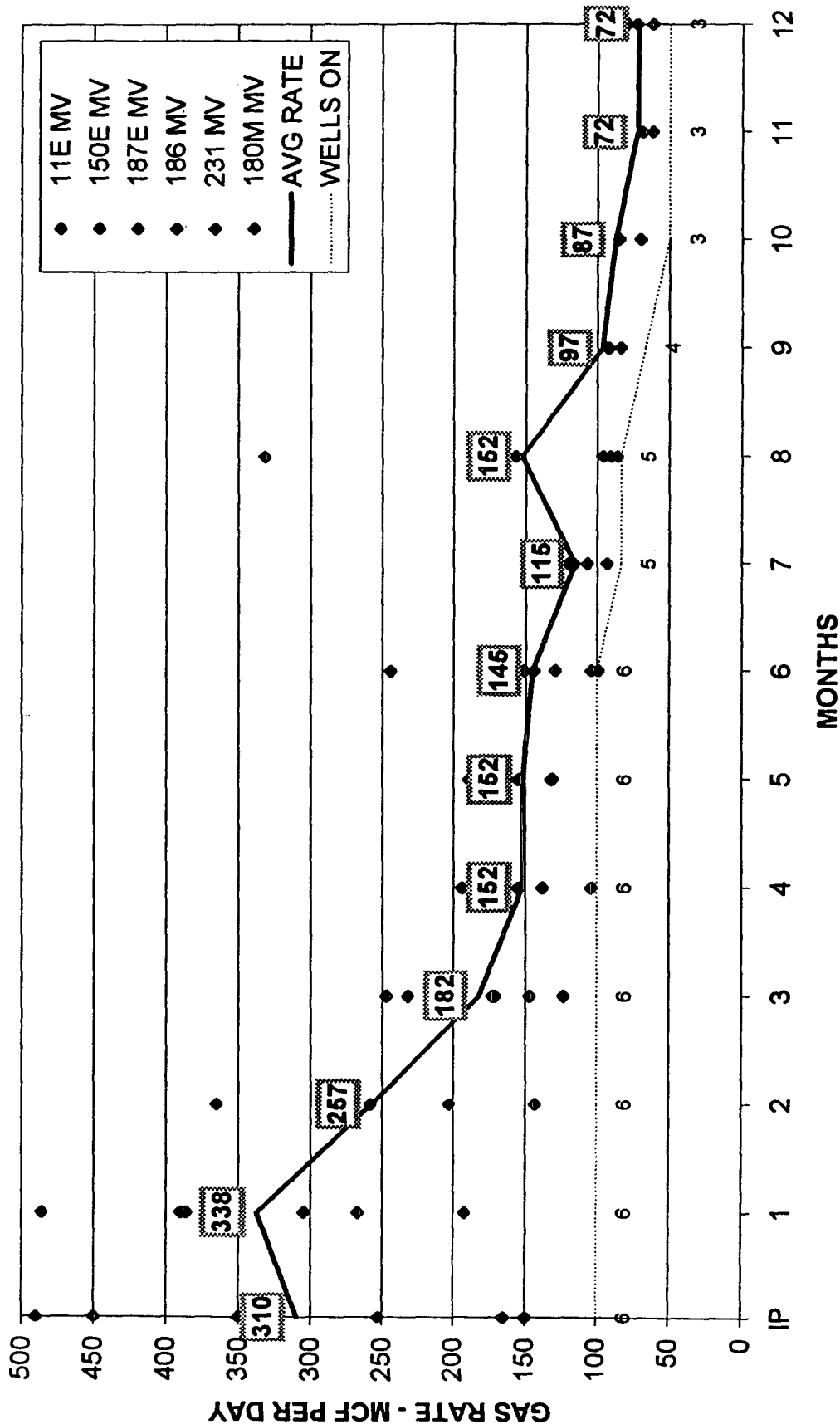
- * C-102 for each zone to be commingled showing its spacing unit and acreage dedication.
- * Production curve for each zone for at least one year. (If not available, attach explanation.)
- * For zones with no production history, estimated production rates and supporting data.
- * Data to support allocation method or formula.
- * Notification list of all offset operators.
- * Notification list of working, overriding, and royalty interests for uncommon interest cases.
- * Any additional statements, data, or documents required to support commingling.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Heather Dahlgren TITLE Eng. Technician DATE 1-24-98

TYPE OR PRINT NAME Heather Dahlgren TELEPHONE NO. (915) 685 7665

RINCON MESAVERDE RECOMPLETIONS SEPARATELY METERED VOLUMES



RINCON MESAVERDE RECOMPLETIONS
MONTHLY GAS PRODUCTION DATA - SEPARATELY METERED VOLUMES

WELL:	11E	160E	187E	188	231	180M
ZONE:	MV	MV	MV	MV	MV	MV
COMPL:	DUAL	DUAL	DUAL	SINGLE	SINGLE	DHC*
1st Deliv:	04/01/97	12/18/95	01/31/96	12/27/96	01/10/97	10/29/92
IP (MCFD):	253	150	490	350	165	450

AVG IP	310	MIN IP	150	MAX IP	490
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MONTH	GAS VOLUME	PDGAS RATE	GAS VOLUME	PDGAS RATE	GAS VOLUME	PDGAS RATE	GAS VOLUME	PDGAS RATE	GAS VOLUME	PDGAS RATE	WELLS ON	AVG VOL	AVG RATE	MIN RATE	MAX RATE	MON VOL**
IP																
1	9151	305	4291	390	486	486	980	192	8116	386	6	5035	338	192	486	5065
2	4288	143	7888	258	8238	284	6283	203	8140	291	6	7089	257	143	385	7205
3	3678	123	4969	171	4544	147	4850	173	7198	232	6	5482	182	123	247	5947
4	2831	138	4809	155	2922	104	4769	154	5828	194	6	4276	152	104	194	4565
5	3161	132	3883	155	3296	132	3922	131	5157	172	6	4212	152			4707
6	2488	104	4003	128	2869	99	4332	144	3665	244	6	3666	145			4355
7			3493	116	2882	93	3593	120	4375	141	5	3534	115			3577
8			2989	96	2807	81	3134	157	3655	332	5	3032	152			3286
9			2885	83	2283	92	3620	117			4	2852	87			2895
10			2672	107	2184	70					3	2269	87			2707
11			2652	86	2059	69					3	2191	72			2170
12			2396	80	2259	73					3	2187	72			2222

* 180M MV produced for 12 months prior to DHC with DK

** Monthly volumes used to forecast first 12 months of Mesa Verde production

1996 MV RECOMPLETION - EXAMPLE CASE FOR OIL FORECAST

WELL:	183
ZONE:	DK/MV
COMPL:	DHC
MV 1st Deliv:	12/20/96
MV IP (BOPD):	0.5

MONTH	OIL VOLUME	PDOIL RATE	WATER VOLUME	PDWAT RATE	AVG PDOIL	AVG PDWAT
1	16	0.5	17	0.5		
2	32	1.1	17	0.6		
3	26	0.8	23	0.7		
4	10	0.3	7	0.2		
5	25	0.8	17	0.5		
6	27	0.9	3	0.1		
7	22	0.7	2	0.1		
8	20	0.6	9	0.3		
9	8	0.3	3	0.1		
10	9	0.3	8	0.3		
11	4	0.7	3	0.5	0.6	0.4
12	0	0	0	0.0		
13	137	4.4	25	0.8		
14	43	1.5	33	1.2		
15	50	1.6	17	0.5		
16	44	1.5	20	0.7		
17	26	0.9	20	0.7		
18	0	0	20	0.7		
19	31	1	20	0.6		
20	24	0.8	20	0.6		
21	27	0.9	20	0.6	1.4	0.7

Dakota volumes prior to commingling

DK/MV commingle oil / water volumes

--BHPCALC--

Calculated BHP and Z-factor from surface shut-in pressure

TEST DATE: 09/27/62

WELL NAME : Rincon Unit 181 DK (Original Pressure)

GAS GRAVITY:	0.65	% N2	0.81
CONDENSATE (YES=1):	1	% CO2	1.33 %
RESERVOIR TEMP:	195 F	% H2S	0.00 %
SURFACE TEMP:	60 F	Pc =	672.72 %
DEPTH OF ZONE:	7554 Foot	Tc =	368.63

SURFACE PRES	BHP	Z	BHP/Z
psia	psia		psia
2617	3,168	0.9069	3,493

Initial pressure obtained after 13 day shut-in following completion of well.

ATTACHMENT 2a.

--BHPCALC--

Calculated BHP and Z-factor from surface shut-in pressure

TEST DATE: 07/29/97

WELL NAME : Rincon Unit 29 MV (Current Pressure)

GAS GRAVITY: 0.69 % N2 0.28
CONDENSATE (YES=1): 1 % CO2 1.10 %
RESERVOIR TEMP: 140 F % H2S 0.00 %
SURFACE TEMP: 60 F Pc = 670.05 %
DEPTH OF ZONE: 5179 Foot Tc = 378.61

SURFACE PRES	BHP	Z	BHP/Z
psia	psia		psia
400	454	0.9454	481

Current pressure of 181 direct offset, obtained after 7 day shut-in during El Paso plant shut down for maintenance.

ATTACHMENT 2b.

--BHPCALC--

Calculated BHP and Z-factor from surface shut-in pressure

TEST DATE: 11/16/54

WELL NAME : Rincon Unit 29 MV (Initial Pressure)

GAS GRAVITY: 0.69 % N2 0.28
CONDENSATE (YES=1): 1 % CO2 1.10 %
RESERVOIR TEMP: 140 F % H2S 0.00 %
SURFACE TEMP: 60 F Pc = 670.05 %
DEPTH OF ZONE: 5179 Foot Tc = 378.61

SURFACE PRES	BHP	Z	BHP/Z
psia	psia		psia
1110	1,282	0.8623	1,487

16 day shut-in surface casing pressure following completion.

ATTACHMENT 2c.

RINCON UNIT DK/MV COMMINGLE BOTTOMHOLE PRESSURE DATA
(Measured - 7 day SI)

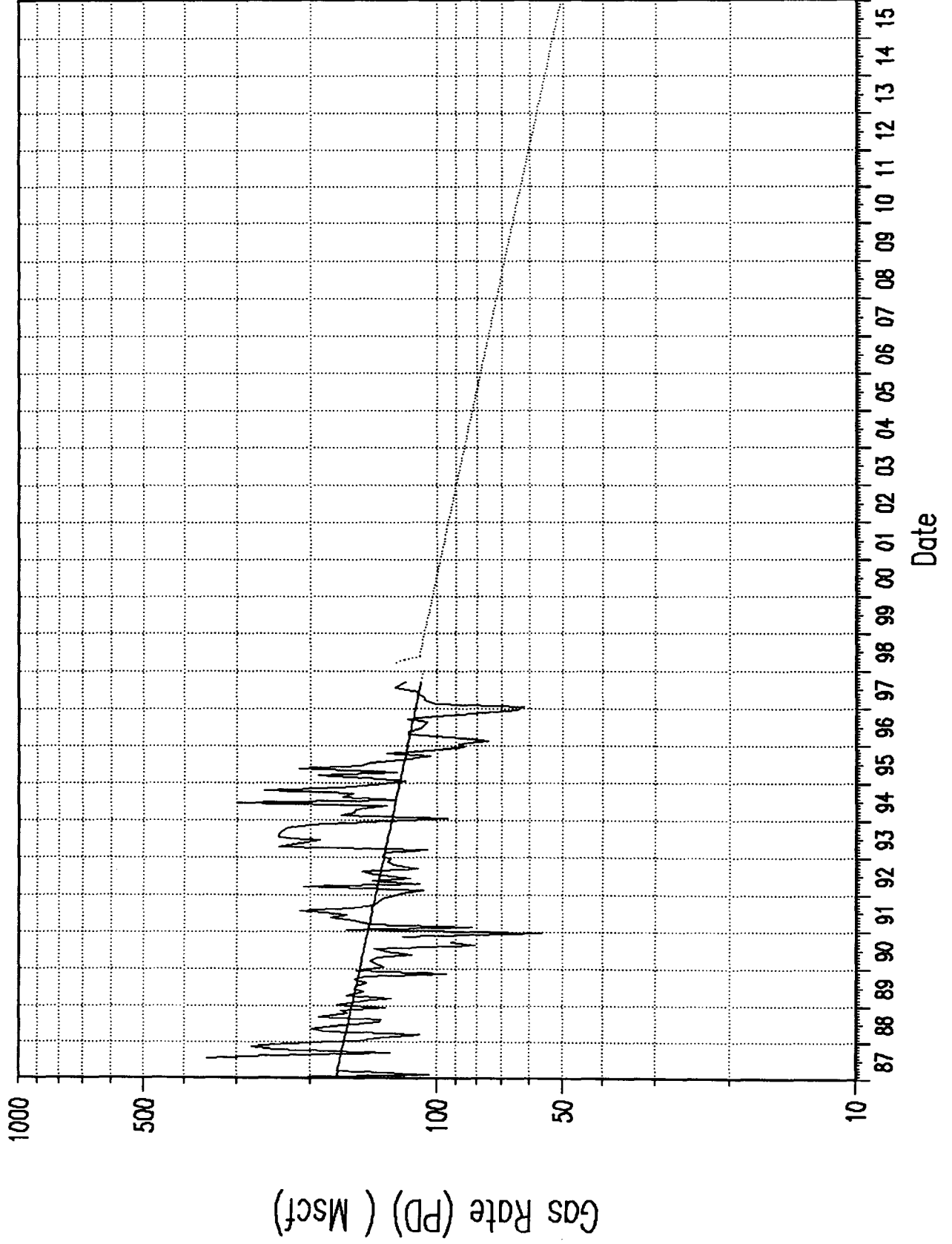
	<u>WELL</u>	<u>MV BHP (PSI)</u>	<u>DK BHP ADJ. TO MV DATUM (PSI)</u>	<u>% DIFF</u>
*	1E	1156	1690	32
*	125M	789	1548	49
*	126	660	850	22
*	126M	921	1607	43
*	127	512	580	12
*	127M	716	1280	44
*	128	801	781	2
**	128M	1001	1000	0
*	129	806	836	4
*	129M	1053	935	11
*	130	586	622	6
*	135	481	736	35
*	136E	1139	2199	48
*	137	400	686	42
**	138E	684	1100	38
**	139E	761	1300	41
*	149	471	521	10
*	151M	1228	1862	34
*	158M	1231	766	38
*	159M	603	583	3
*	167M	1007	1909	47
*	170M	940	1752	46
*	175M	735	1108	34
*	180M	585	788	26
*	184M	1753	1708	3
**	302	654	1225	47
AVG. NEW COMPLETIONS:		942	1353	
AVG. EXISTING COMPLETIONS:		524	624	

DK ZONE TAKEN AS DATUM

- * 1993 TEST DATA
- ** 1994 TEST DATA

ATTACHMENT 3.

WELL: RINCON UNIT 181:DK
 LOCATION : N027 W006 22 SWNE
 COUNTY : RIO ARriba STATE : NMEX



WELL: RINCON UNIT 181:DK

Cum. Gas Production:	2129802.00	Mscf
Remaining Recoverable Gas Reserves:	647756.01	Mscf
Ultimate Recoverable Gas Reserves:	2777558.01	Mscf

SCHEDULE 1

Qi:	294.10	Mscf
Di:	0.003663	
Hyperbolic B:	0.0000	
Start Date:	1997/09	
Monthly Nominal Decline (Dn):	0.003663	
Monthly Effective Decline (De):	0.003656	
Yearly Effective Decline (De):	0.043000	
Initial Forecast Rate:	109.00	Mscf
Economic Limit:	25.00	Mscf
Cumulative Produced:	2129802.00	Mscf
Total Forecasted Reserves:	16524.43	Mscf
Total Recovered Reserves:	2146326.43	Mscf

SCHEDULE 2

Qi:	16912924.35	Mscf
Di:	0.042569	
Hyperbolic B:	0.0000	
Start Date:	1998/03	
Monthly Nominal Decline (Dn):	0.042569	
Monthly Effective Decline (De):	0.041675	
Yearly Effective Decline (De):	0.400000	
Initial Forecast Rate:	128.00	Mscf
Economic Limit:	25.00	Mscf
Cumulative Produced:	2129802.00	Mscf
Total Forecasted Reserves:	24011.90	Mscf
Total Recovered Reserves:	2153813.90	Mscf

SCHEDULE 3

Qi:	305.63	Mscf
Di:	0.003663	
Hyperbolic B:	0.0000	
Start Date:	1998/05	
Monthly Nominal Decline (Dn):	0.003663	
Monthly Effective Decline (De):	0.003656	
Yearly Effective Decline (De):	0.043000	
Initial Forecast Rate:	110.00	Mscf
Economic Limit:	25.00	Mscf
Cumulative Produced:	2129802.00	Mscf
Total Forecasted Reserves:	647756.01	Mscf
Total Recovered Reserves:	2777558.01	Mscf

DATE	AVERAGE DAILY RATE Mscf	MONTHLY FORECAST PROD. Mscf	CUM. PROD. Mscf	REMAINING RECOV. RESERVES Mscf
1998/01	107.22	3323.74	2146326.50	631231.56
1998/02	0.00	0.00	2146326.50	631231.56
1998/03	125.31	3884.73	2150211.25	627346.81
1998/04	120.09	3602.74	2153814.00	623744.13
1998/05	109.80	3403.74	2157217.75	620340.38
1998/06	109.40	3281.95	2160499.50	617058.44
1998/07	109.00	3378.95	2163878.50	613679.44
1998/08	108.60	3366.55	2167245.00	610312.94
1998/09	108.20	3246.01	2170491.00	607066.88
1998/10	107.81	3342.01	2173833.00	603724.88
1998/11	107.41	3222.39	2177055.50	600502.50
1998/12	107.02	3317.60	2180373.00	597184.88
1999/01	106.63	3305.46	2183678.50	593879.44
1999/02	106.24	2974.67	2186653.25	590904.75
1999/03	105.85	3281.38	2189934.50	587623.38
1999/04	105.46	3163.90	2193098.50	584459.50
1999/05	105.08	3257.36	2196355.75	581202.13
1999/06	104.69	3140.84	2199496.75	578061.31
1999/07	104.31	3233.59	2202730.25	574827.69
1999/08	103.93	3221.84	2205952.25	571605.88
1999/09	103.55	3106.47	2209058.50	568499.38
1999/10	103.17	3198.27	2212257.00	565301.13
1999/11	102.79	3083.79	2215340.75	562217.31
1999/12	102.42	3174.95	2218515.50	559042.38
2000/01	102.04	3163.34	2221679.00	555879.06
2000/02	101.67	2948.44	2224627.50	552930.63
2000/03	101.30	3140.28	2227767.75	549790.31
2000/04	100.93	3027.80	2230795.50	546762.50
2000/05	100.56	3117.36	2233912.75	543645.19
2000/06	100.19	3005.73	2236918.50	540639.44
2000/07	99.82	3094.57	2240013.25	537544.88
2000/08	99.46	3083.26	2243096.50	534461.63
2000/09	99.10	2972.93	2246069.25	531488.69
2000/10	98.74	3060.80	2249130.00	528427.88
2000/11	98.37	2951.18	2252081.25	525476.69
2000/12	98.01	3038.39	2255119.75	522438.31
2001/01	97.66	3027.34	2258147.00	519410.97
2001/02	97.30	2724.34	2260871.50	516686.63
2001/03	96.94	3005.27	2263876.75	513681.38
2001/04	96.59	2897.63	2266774.25	510783.75
2001/05	96.24	2983.30	2269757.50	507800.44
2001/06	95.88	2876.45	2272634.00	504924.00
2001/07	95.53	2961.53	2275595.50	501962.44
2001/08	95.18	2950.70	2278546.25	499011.75
2001/09	94.84	2845.08	2281391.25	496166.69
2001/10	94.49	2929.13	2284320.50	493237.56
2001/11	94.14	2824.33	2287144.75	490413.22
2001/12	93.80	2907.75	2290052.50	487505.47
2002/01	93.46	2897.16	2292949.75	484608.31
2002/02	93.11	2607.17	2295556.75	482001.13
2002/03	92.78	2876.05	2298433.00	479125.09
2002/04	92.43	2773.02	2301206.00	476352.06
2002/05	92.10	2855.00	2304061.00	473497.06
2002/06	91.76	2752.84	2306813.75	470744.25
2002/07	91.42	2834.14	2309648.00	467910.09

2002/08	91.09	2823.80	2312471.75	465086.31
2002/09	90.76	2722.72	2315194.50	462363.56
2002/10	90.43	2803.20	2317997.50	459560.38
2002/11	90.09	2702.86	2320700.50	456857.50
2002/12	89.77	2782.73	2323483.25	454074.78

RU 181 Forecast

Well	RU 181
Existing Completion Prior to DHC	DK
Annual Decline	4.30%
Monthly Decline Factor (Annual / 12)	0.3583
Average 3 month volume (Mcf) prior to DHC	3272
Average Yield (bbls/mcf) Oil	0.0033
Average Yield (bbls/mcf) Water	0.0025
Volume Prior to DHC (Mcf)	3366

Full Months Prod Apr - Jun 97
96-97 annual average
96-97 annual average

* Forecasted volumes to be adjusted for actual days on production				
Month	DK Forecast (Mcf)	DK Forecast (Bbls-Oil)	DK Forecast (Bbls-Water)	
1	3884	12.8	9.7	
2	3602	11.9	9.0	
3	3404	11.2	8.5	
4	3392	11.2	8.5	
5	3380	11.2	8.4	
6	3368	11.1	8.4	
7	3355	11.1	8.4	
8	3343	11.0	8.4	
9	3331	11.0	8.3	
10	3320	11.0	8.3	
11	3308	10.9	8.3	
12	3296	10.9	8.2	
13	3284	10.8	8.2	
14	3272	10.8	8.2	
15	3260	10.8	8.2	
16	3249	10.7	8.1	
17	3237	10.7	8.1	
18	3226	10.6	8.1	
19	3214	10.6	8.0	
20	3202	10.6	8.0	
21	3191	10.5	8.0	
22	3180	10.5	7.9	
23	3168	10.5	7.9	
24	3157	10.4	7.9	

+ DK flush volume
+ DK flush volume

SPIRIT ENERGY 76

New Name. Same Spirit.
A Business Unit of Unocal

November 11, 1997

Burlington Resources Oil & Gas Co.
P.O. Box 4289
Farmington, NM 87499-4289

Gentlemen:

Union Oil Company of California (UNOCAL) has requested from the State of New Mexico Oil Conservation Division, approval to down hole commingle production from the Blanco Mesa Verde and Basin Dakota formations in the following Rincon Unit well, Rio Arriba County, New Mexico.

Well	Legal Location
181	1550' FNL, 1750' FEL, NE Sec 22, T27N, R6W

If Burlington, as an offset operator, has an objection to this proposal, please notify NMOCD within twenty days. If you have any questions regarding this application, please contact me at 915/685-6836.

Sincerely,

Spirit Energy 76
A Business Unit of UNOCAL



Thomas E. Baiar
Petroleum Engineer

TEB:had:ss



New Name. Same Spirit.
A Business Unit of Unocal

November 28, 1997

United States Department of the Interior
Bureau of Land Management
1235 La Plata Highway
Farmington, NM 87401

Gentlemen:

Union Oil Company of California (UNOCAL) has requested from the State of New Mexico Oil Conservation Division, approval to down hole commingle production from the Blanco Mesa Verde and Basin Dakota formations in the following Rincon Unit well, Rio Arriba County, New Mexico.

Well	Legal Location
139	1650' FSL, 1650' FWL, SW Sec 25, T27N, R7W
168	1190' FNL, 1190' FEL, NE Sec 36, T27N, R7W
181	1550' FNL, 1750' FEL, NE Sec 22, T27N, R6W

Attached for Bureau of Land Management review is this proposal. If there are any objections to the proposed action, please notify NMOCD within twenty days. If you have any questions regarding this application, please contact Tom Baiar at 915/685-6836.

Sincerely,

Spirit Energy 76
A Business Unit of UNOCAL

A handwritten signature in cursive script, appearing to read "Heather Dahlgren".

Heather Dahlgren
Engineering Technician

TEB:had:ss
Att.