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 87505-6429

APPLICATION FOR DOWNHOLE COMMINGLING

Form C-107-A
New 3 12-96

APPROVAL PROCESS:
X Administrative ___ Hearing

EXISTING WELLBORE
X YES ___ NO

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

Rincon Unit (Lease) 168 (Well No.) A-36-27N-7W (Unit Ltr. - Sec - Twp - Rge) Rio Arriba (County)

OGRID NO. 023708 Property Code 011510 API NO. 30-039-82377 Spacing Unit Lease Types: (check 1 or more) Federal ___, State X, 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 5263-5354		7262-7462
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: Estimated Current Gas & Oil - Flowing: Measured Current All Gas Zones: Estimated Or Measured Original	a. (Current) 761 b. (Original)	a. b.	a. 516 b.
6. Oil Gravity (°API) or Gas BTU Content	1200 BTU		1141 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 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 andoil/gas/ water rates of recent test (within 60 days)	Date: Rates:	Date: Rates:	Date: September 1997 Rates: 0 BOPD 144 MCFD 0 BWPD
8. Fixed Percentage Allocation Formula -% for each zone	Oil: % Gas: %	Oil: % Gas: %	Oil: % Gas: %

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DEC - 1 1997
OIL CON. DIV.
DIST. 3

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? X 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? X Yes ___ No

11. Will cross-flow occur? ___ Yes X 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? X Yes ___ No

13. Will the value of production be decreased by commingling? ___ Yes X 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. X 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

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District IV
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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	2Pool Code	3Pool Name
30-039-82377	71599	Basin Dakota

4Property Code	5Property Name	6Well Number
011510	Rincon Unit	168

7OGRID No.	8Operator Name	9Elevation
023708	Spirit Energy 76/A Business Unit of UNOCAL	6586

10Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West Line	County
A	36	27-N	7-W		1190	North	1190	East	Rio Arriba

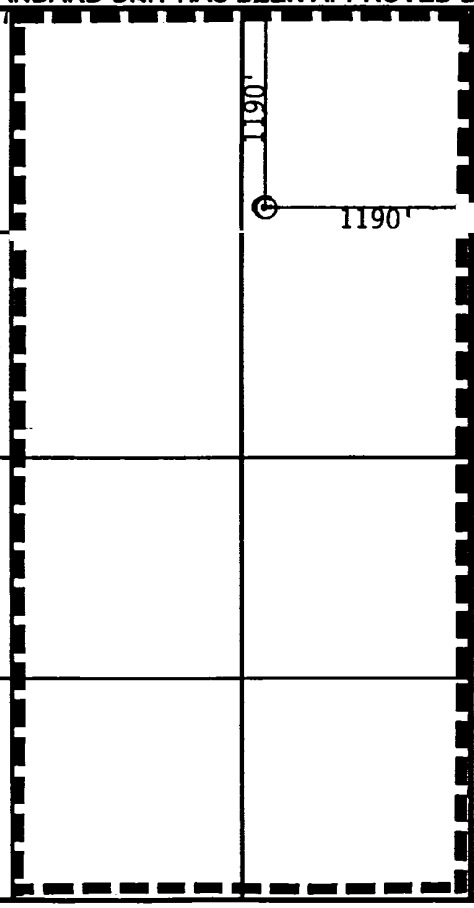
11Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West Line	County

12Dedicated Acres	13Joint or Infill	14Consolidation Code	15Order No.
320.00	Y	U	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

16



17OPERATOR CERTIFICATION

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

Signature: Heather Dahlgren

Printed Name: Heather Dahlgren

Title: Engineering Technician

Date: November 28, 1997

18SURVEYOR 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 Surveyer:

Certificate Number

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WELL LOCATION AND ACREAGE DEDICATION PLAT

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30-039-82377	72319	Blanco Mesaverde

4Property Code	5Property Name	6Well Number
011510	Rincon Unit	168

7OGRID No.	8Operator Name	9Elevation
023708	Spirit Energy 76/A Business Unit of UNOCAL	6586

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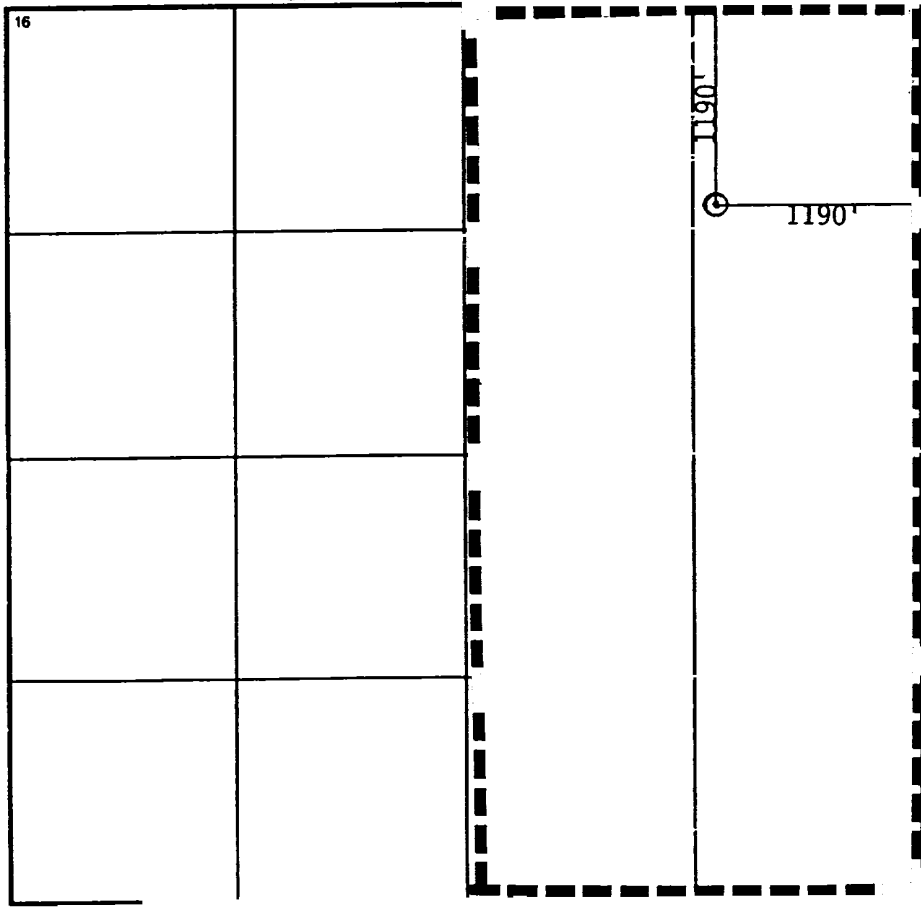

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Date of Survey

Signature and Seal of Professional Surveyer:

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	9/1793
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

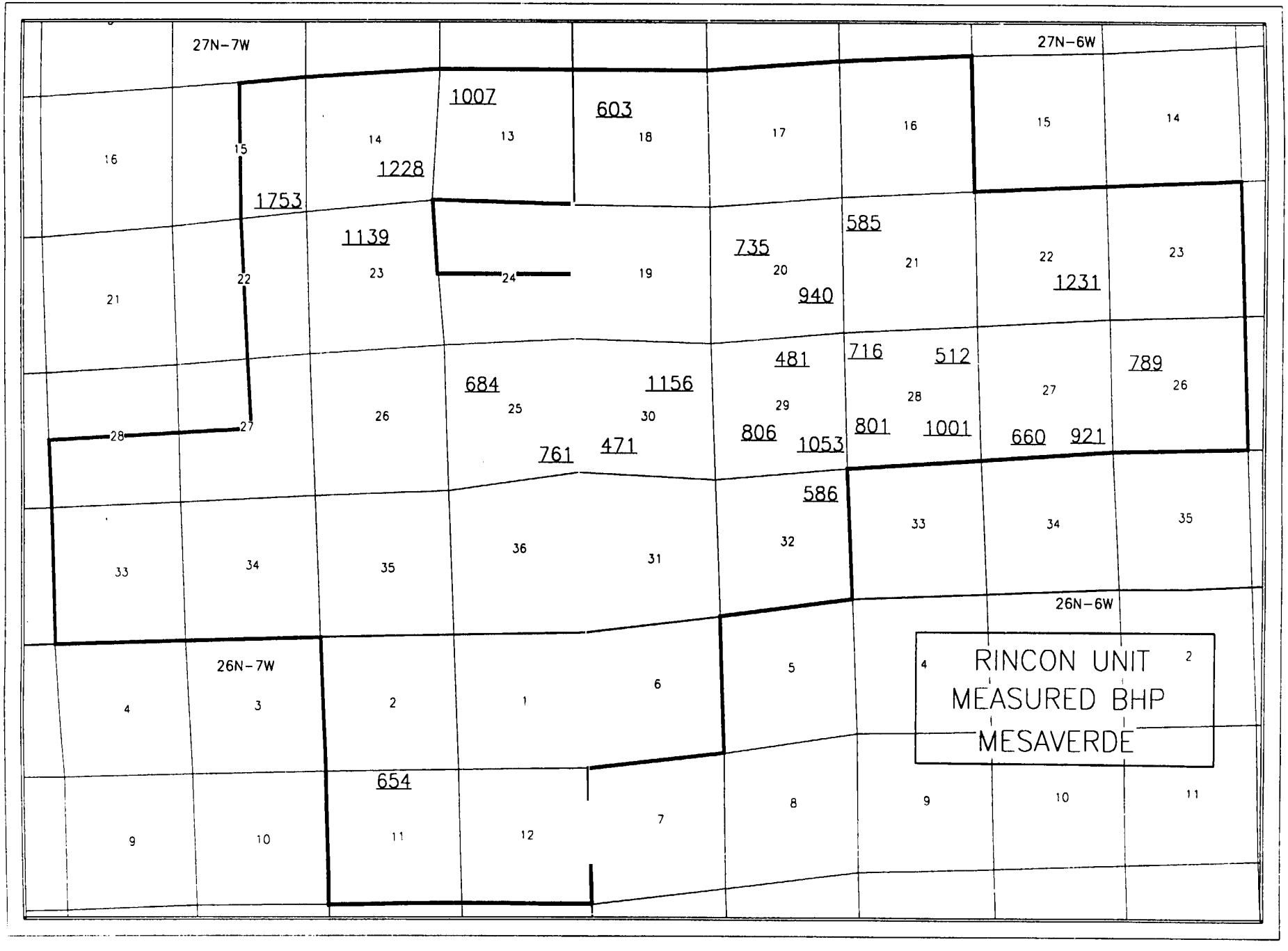
(Measured - 7 day SI)

	WELL	MV BHP (PSI)	DK BHP ADJ TO MV DATUM (PSI)	% DIFF
•	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


27N-7W
27N-6W
26N-7W
26N-6W
1007
603
1228
1753
1139
735
585
940
1231
481
716
512
789
684
1156
761
471
806
1053
801
1001
660
921
586
654
RINCON UNIT
MEASURED BHP
MESAVERDE

GAS ANALYSIS

WELL NAME	ZONE	TEST DATE	NITROGEN	CO2	METHANE	ETHANE	PROPANE	I-BUTANE	N-BUTANE	I-PENTANE	N-PENTANE	HEXANE+	BTU'S	GPM	SPEC GRAV
RINCON #1E	DK	11/23/94	0.310	1.150	86.570	6.980	2.760	0.500	0.730	0.270	0.20	0.530	1159.0	3.424	0.670
	MV	11/23/94	0.310	1.150	86.570	6.980	2.760	0.500	0.730	0.270	0.20	0.530	1159.0	3.424	0.670
RINCON #125M	DK	08/10/94	0.260	1.160	85.010	7.670	3.260	0.630	0.650	0.350	0.23	0.590	1184.0	3.690	0.685
	MV	08/10/94	0.260	1.160	85.010	7.670	3.260	0.630	0.650	0.350	0.23	0.590	1184.0	3.690	0.685
RINCON #126	DK	11/17/94	0.210	1.320	87.650	6.430	2.000	0.510	0.520	0.280	0.16	0.620	1141.0	3.034	0.660
	MV	11/18/94	0.460	1.070	83.080	8.230	4.220	0.790	1.090	0.370	0.24	0.460	1207.0	4.390	0.701
RINCON #126M	DK	12/07/93	0.290	1.050	87.640	6.480	2.770	0.540	0.680	0.270	0.17	0.230	1140.4	3.139	0.656
	MV	12/07/93	0.290	1.050	87.640	6.480	2.770	0.540	0.680	0.270	0.17	0.230	1140.4	3.139	0.656
RINCON #127	DK	09/15/93	0.280	1.160	84.870	8.010	2.940	0.680	0.800	0.430	0.25	0.660	1162.1	3.927	0.686
	MV	05/13/82	0.390	1.020	81.780	10.520	4.220	0.800	0.840	0.260	0.19	0.160	1186.0	4.079	0.694
RINCON #127M	DK	11/17/94	0.300	1.240	84.650	8.010	3.050	0.600	0.800	0.340	0.23	0.580	1180.0	3.892	0.684
	MV	11/17/94	0.300	1.240	84.650	8.010	3.050	0.600	0.800	0.340	0.23	0.580	1180.0	3.892	0.684
RINCON #128	DK	11/18/94	0.830	1.880	84.060	8.480	3.880	0.640	0.880	0.370	0.26	0.800	1192.0	4.128	0692
	MV	11/18/94	0.450	0.760	79.710	10.320	5.030	0.880	1.390	0.470	0.35	0.820	1260.0	5.443	0.730
RINCON #129	DK	04/15/94	0.260	1.000	86.830	7.120	2.350	0.620	0.650	0.280	0.19	0.490	1151.0	3.317	0.666
	MV	03/29/94	0.550	0.690	79.100	11.220	5.500	0.840	1.060	0.430	0.35	0.860	1259.0	5.588	0.727
RINCON #129M	DK	10/23/94	0.270	1.190	81.230	9.850	4.130	0.780	1.120	0.480	0.31	0.660	1232.0	4.949	0.717
	MV	10/23/94	0.270	1.190	81.230	9.850	4.130	0.780	1.120	0.480	0.31	0.660	1232.0	4.949	0.717
RINCON #130	DK	04/15/94	0.200	1.160	81.380	10.020	4.020	0.740	1.190	0.470	0.33	0.470	1226.0	4.902	0.712
	MV	04/15/94	0.580	0.730	79.680	10.230	5.830	1.020	1.470	0.480	0.34	0.740	1281.0	5.763	0.744
RINCON #135	DK	04/13/94	0.430	1.240	84.220	8.530	2.970	0.630	0.780	0.340	0.22	0.640	1184.0	4.036	0.686
	MV	04/13/94	0.330	1.210	84.030	8.690	3.110	0.640	0.820	0.350	0.22	0.600	1188.0	4.120	0.690
RINCON #136E	DK	06/15/93	0.220	1.080	83.600	9.320	3.440	0.560	0.890	0.330	0.22	0.340	1189.0	4.254	.0687
	MV	12/12/92	0.219	1.072	84.804	8.487	3.185	0.484	0.824	0.307	0.24	0.376	1177.1	3.930	0.678
RINCON #137	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	3.886	0.678
	MV	11/11/94	0.440	0.600	77.270	12.180	5.690	0.940	1.600	0.480	0.32	0.490	1298.0	5.136	0.744
RINCON #149	DK	11/18/94	0.380	1.200	86.310	8.080	1.600	0.660	0.690	0.250	0.19	0.450	1134.0	2.905	0.655
	MV	11/30/94	0.380	1.160	84.630	7.900	3.110	0.610	0.950	0.390	0.27	0.680	1186.0	3.964	0.688
RINCON #161M	DK	10/07/94	0.230	1.010	82.500	9.610	3.930	0.660	1.020	0.370	0.26	0.410	1210.0	4.000	0.699
	MV	10/07/94	0.230	1.010	82.500	9.610	3.930	0.660	1.020	0.370	0.26	0.410	1210.0	4.000	0.699
RINCON #168M	DK	12/08/93	0.290	1.040	86.780	7.010	2.600	0.550	0.710	0.300	0.19	0.330	1152.0	3.371	0.683
	MV	12/08/93	0.290	1.040	86.780	7.010	2.600	0.550	0.710	0.300	0.19	0.330	1152.0	3.371	0.683
RINCON #169M	DK	11/10/94	0.240	1.090	83.010	9.160	3.690	0.710	0.930	0.380	0.24	0.650	1207.0	4.458	0.698
	MV	11/10/94	0.240	1.090	83.010	9.160	3.690	0.710	0.930	0.380	0.24	0.650	1207.0	4.458	0.698
RINCON #167M	DK	10/14/94	0.230	1.010	86.060	7.620	2.690	0.540	0.770	0.280	0.19	0.410	1165.0	3.605	0.671
	MV	10/14/94	0.230	1.010	86.060	7.620	2.690	0.540	0.770	0.280	0.19	0.410	1165.0	3.605	0.671
RINCON #170M	DK	10/31/94	0.330	1.120	83.640	8.800	3.640	0.670	0.890	0.340	0.21	0.360	1190.0	4.214	0.689
	MV	10/31/94	0.330	1.120	83.640	8.800	3.640	0.670	0.890	0.340	0.21	0.360	1190.0	4.214	0.689
RINCON #175M	DK	11/28/94	0.360	1.140	82.250	9.290	3.660	0.710	1.040	0.410	0.28	0.640	1217.0	4.644	0.707
	MV	11/28/94	0.360	1.140	82.250	9.290	3.660	0.710	1.040	0.410	0.28	0.640	1217.0	4.644	0.707
RINCON #180M	DK	09/26/94	0.270	1.170	85.810	7.490	2.830	0.600	0.740	0.310	0.19	0.590	1171.0	3.652	0.677
	MV	09/26/94	0.270	1.170	85.810	7.490	2.830	0.600	0.740	0.310	0.19	0.590	1171.0	3.652	0.677
RINCON #184M	DK	12/30/93	0.280	1.010	81.930	9.580	4.090	0.680	1.060	0.400	0.29	0.710	1228.0	4.807	0.711
	MV	12/30/93	0.280	1.010	81.930	9.580	4.090	0.680	1.060	0.400	0.29	0.710	1228.0	4.807	0.711

EXHIBIT 'A'

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

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

When: $Qn < Q1n$;

Then: $Q1n = Qn(Q1(n-1)/(Q1(n-1)+Q2(n-1)))$ 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:

$Q1n = Qn(Q1(24)/(Q1(24)+Q2(24)))$ 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 nth month, after n months of commingled production in Mcfd.
$Q1n$	Total production for the existing completion, for the nth month, after n months of commingled production in Mcfd.
$Q2n$	Total production for the new completion, for the nth 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	186	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	MIN IP	MAX IP
310	150	490

MONTH	11E GAS VOLUME	11E PDGAS RATE	150E GAS VOLUME	150E PDGAS RATE	187E GAS VOLUME	187E PDGAS RATE	186 GAS VOLUME	186 PDGAS RATE	231 GAS VOLUME	231 PDGAS RATE	180M GAS VOLUME	180M PDGAS RATE	WELLS ON	AVG VOL	AVG RATE	MIN RATE	MAX RATE	MON VOL**
IP		253		150		490		350		165		450	6		310			
1	9151	305	4291	390	486	486	960	192	8116	386	7207	267	6	5035	338	192	486	5065
2	4288	143	7988	258	8238	284	6283	203	8140	291	7657	365	6	7099	257	143	365	7205
3	3678	123	4969	171	4544	147	4850	173	7198	232	7652	247	6	5482	182	123	247	5647
4	2631	138	4809	155	2922	104	4769	154	5828	194	4694	168	6	4276	152	104	194	4565
5	3161	132	3883	155	3296	132	3922	131	5157	172	5852	189	6	4212	152			4707
6	2488	104	4003	129	2969	99	4332	144	3665	244	4541	151	6	3666	145			4355
7			3493	116	2882	93	3593	120	4375	141	3329	107	5	3534	115			3577
8			2989	96	2807	91	3134	157	3655	332	2576	86	5	3032	152			3286
9			2885	93	2293	92	3620	117			2608	84	4	2852	97			2895
10			2672	107	2184	70					1951	85	3	2269	87			2707
11			2652	86	2059	69					1863	62	3	2191	72			2170
12			2396	80	2259	73					1936	62	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

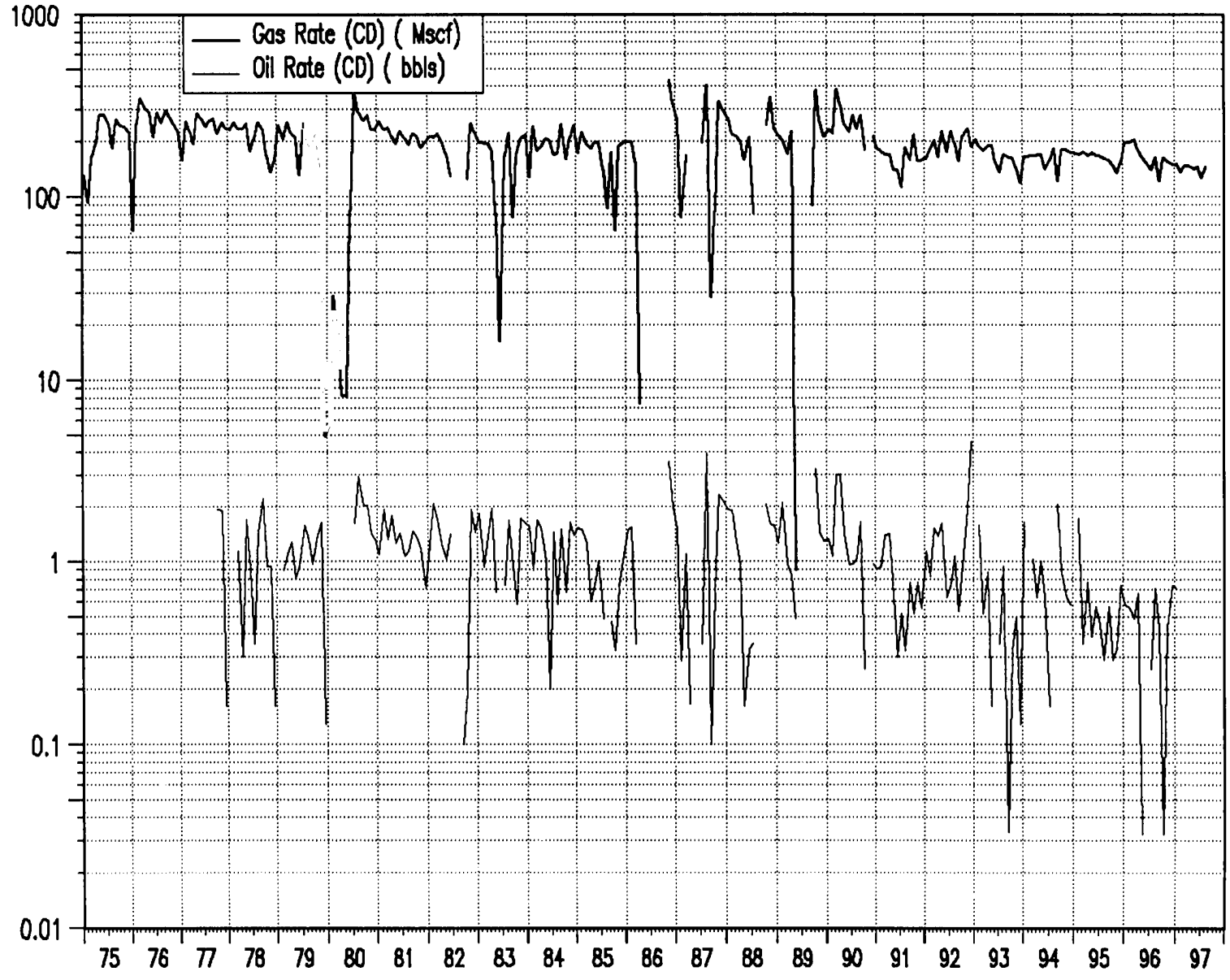
WELL:	**183**
ZONE:	DK/MV
COMPL:	DHC
MV 1st Deliv:	12/20/96
MV IP (BOPD):	0.5

MONTH	OIL VOLUME	PDOIL RATE	WATER VOLUME	PDWAT RATE	AVG PDOIL	AVG PDWAT	
1	16	0.5	17	0.5			Dakota volumes prior to commingling
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			DK/MV commingle oil / water volumes
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	

WELL: RINCON UNIT 168:DK

LOCATION : N027 W007 36 NENE

COUNTY : RIO ARRIBA STATE : NMEX



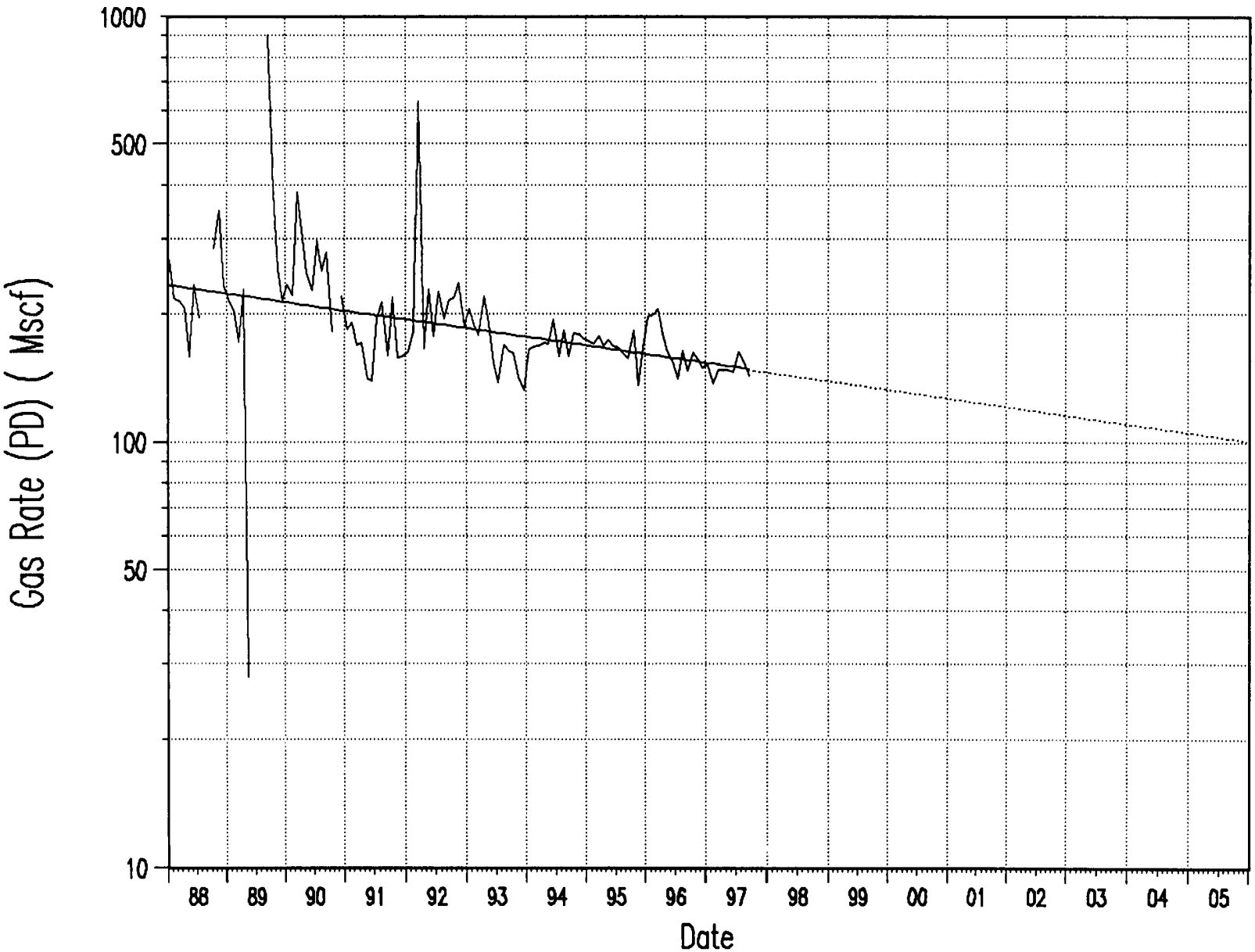
WELL: RINCON UNIT 168:DK
LOCATION : N027 W007 36 NENE
COUNTY : RIO ARRIBA STATE : NMEX

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	18	6102	12	0.6	197	0	18046	2647287
9602	29	16	5785	10	0.6	199	0	18062	2653072
9603	31	15	6387	9	0.5	206	0	18077	2659459
9604	30	20	5384	9	0.7	179	0	18097	2664843
9605	31	1	5073	14	0.0	164	0	18098	2669916
9606	30	0	4635	4	0.0	155	0	18098	2674551
9607	31	8	4378	1	0.3	141	0	18106	2678929
9608	31	22	5077	9	0.7	164	0	18128	2684006
9609	25	13	3681	3	0.5	147	0	18141	2687687
9610	31	1	5045	2	0.0	163	0	18142	2692732
9611	30	13	4689	3	0.4	156	0	18155	2697421
9612	31	23	4620	10	0.7	149	0	18178	2702041
9701	31	22	4730	11	0.7	153	0	18200	2706771
9702	28	0	3850	10	0.0	138	0	18200	2710621
9703	31	22	4584	15	0.7	148	0	18222	2715205
9704	30	0	4439	6	0.0	148	0	18222	2719644
9705	30	0	4437	6	0.0	148	0	18222	2724081
9706	30	0	4392	6	0.0	146	0	18222	2728473
9707	24	0	3925	6	0.0	164	0	18222	2732398
9708	29	0	4528	6	0.0	156	0	18222	2736926
9709	28	0	4019	6	0.0	144	0	18222	2740945

WELL: RINCON UNIT 168:DK

LOCATION : N027 W007 36 NENE

COUNTY : RIO ARRIBA STATE : NMEX



WELL: RINCON UNIT 168:DK

Case Name : New
Case Analyst :
Case Comment :
Cum. Gas Production: 2736926.00 Mscf
Remaining Recoverable Gas Reserves: 872956.51 Mscf
Ultimate Recoverable Gas Reserves: 3609882.51 Mscf

Decline Equation: Q = Qi * exp(-Di*t) t = Elapsed Months from 7501
Qi: 424.27 Mscf
Di: 0.003886
Hyperbolic B: 0.0000
Start Date: 1997/09
Monthly Effective Decline (De): 0.003879
Yearly Effective Decline (De): 0.045564
Initial Forecast Rate: 148.00 Mscf
Economic Limit: 15.00 Mscf
Capacity Limit: 0.00 Mscf
Cumulative Produced: 2736926.00 Mscf
Schedule Forecasted Reserves: 872956.51 Mscf
Total Forecasted Reserves: 872956.51 Mscf
Total Recovered Reserves: 3609882.51 Mscf

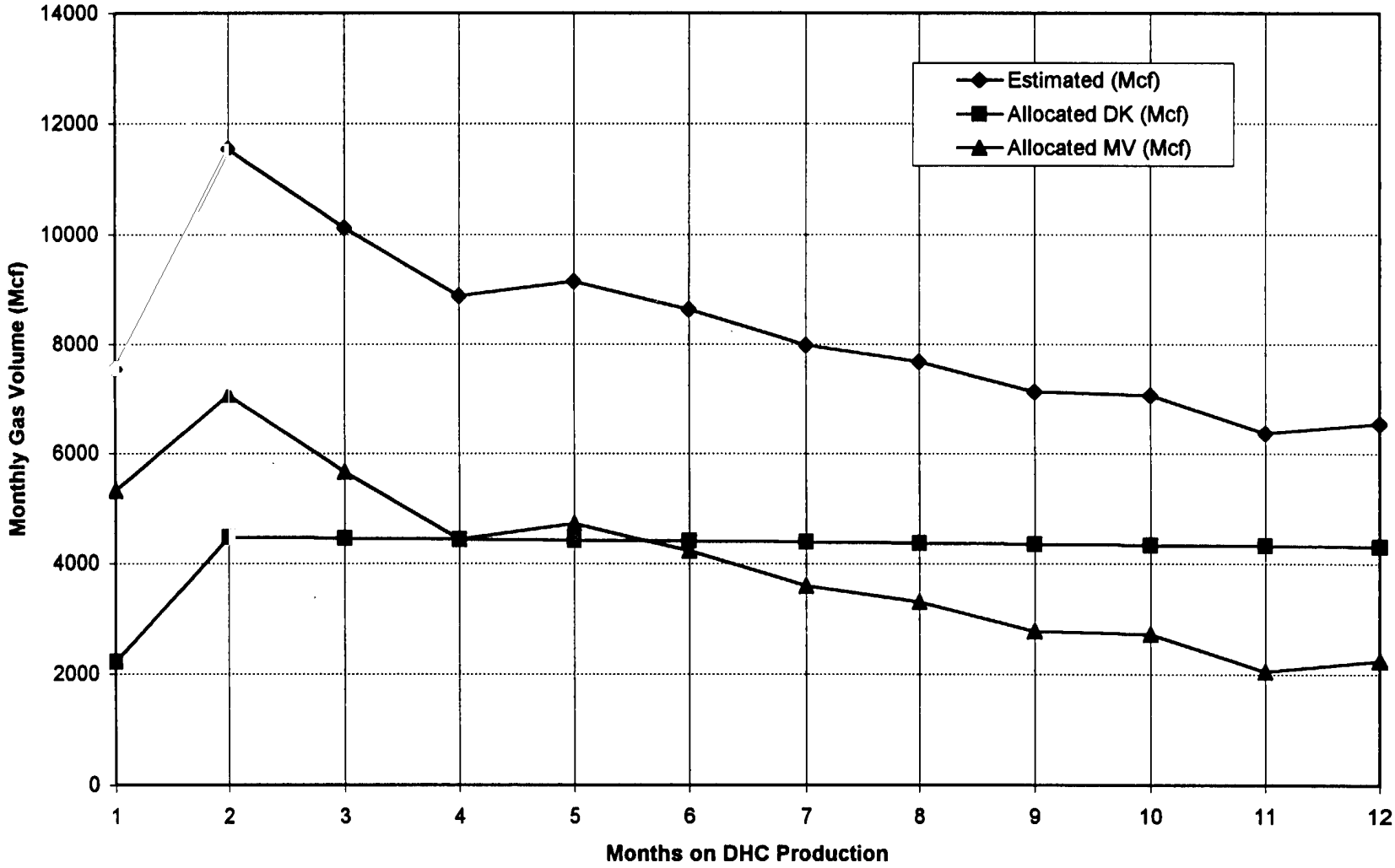
DATE	INSTANT. DAILY RATE Mscf	AVERAGE DAILY RATE Mscf	MONTHLY FORECAST PROD. Mscf	CUM. PROD. Mscf	REMAINING RECOV. RESERVES Mscf
1997/09	147.43	147.71	4431.43	2741357.50	868525.06
1997/10	146.85	147.14	4561.25	2745918.75	863963.81
1997/11	146.28	146.57	4397.15	2750315.75	859566.69
1997/12	145.72	146.00	4525.95	2754841.75	855040.69
1998/01	145.15	145.43	4508.43	2759350.25	850532.31
1998/02	144.59	144.87	4056.41	2763406.50	846475.88
1998/03	144.03	144.31	4473.62	2767880.25	842002.25
1998/04	143.47	143.75	4312.46	2772192.75	837689.81
1998/05	142.91	143.19	4438.93	2776631.50	833250.88
1998/06	142.36	142.63	4279.01	2780910.75	828971.88
1998/07	141.81	142.08	4404.60	2785315.25	824567.25
1998/08	141.26	141.53	4387.44	2789702.75	820179.81
1998/09	140.71	140.98	4229.54	2793932.25	815950.31
1998/10	140.16	140.43	4353.48	2798285.75	811596.81
1998/11	139.62	139.89	4196.67	2802482.25	807400.13
1998/12	139.08	139.35	4319.77	2806802.00	803080.38
1999/01	138.54	138.81	4303.09	2811105.25	798777.31
1999/02	138.00	138.27	3871.60	2814976.75	794905.69
1999/03	137.47	137.73	4269.62	2819246.50	790636.06
1999/04	136.93	137.20	4115.98	2823362.50	786520.06
1999/05	136.40	136.67	4236.75	2827599.25	782283.31
1999/06	135.87	136.14	4084.07	2831683.25	778199.25
1999/07	135.35	135.61	4203.88	2835887.00	773995.38
1999/08	134.82	135.08	4187.58	2840074.75	769807.81
1999/09	134.30	134.56	4036.72	2844111.50	765771.06
1999/10	133.78	134.04	4155.20	2848266.50	761615.88

Gas Forecast

Well		RU 168	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		0.0039	4.5% Annual Decline
Average 3 month rate (Mcfd) prior to DHC		148	Apr-June Average per Day (full months)
New Completion		MV	
Initial Test (Mcfd)	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	7540	2475	5065	2216	5324	71	Est. flush DK rate 165 mcfd
2	11545	4340	7205	4476	7069	61	Est. flush DK rate 155 mcfd
3	10121	4474	5647	4458	5663	56	
4	8877	4312	4565	4441	4436	50	
5	9146	4439	4707	4424	4722	52	
6	8634	4279	4355	4407	4227	49	
7	7982	4405	3577	4390	3592	45	
8	7673	4387	3286	4373	3300	43	
9	7125	4230	2895	4356	2769	39	
10	7060	4353	2707	4339	2721	39	
11	6367	4197	2170	4322	2045	32	
12	6542	4320	2222	4305	2237	34	

RU 168


14000
12000
10000
8000
6000
4000
2000
0
Monthly Gas Volume (Mcf)
1
2
3
4
5
6
7
8
9
10
11
12
Months on DHC Production
Estimated (Mcf)
Allocated DK (Mcf)
Allocated MV (Mcf)

Oil Forecast

Well		RU 168
First Delivery Date (As DHC)	Estimated	16-Jan-98
Days on First Month	Estimated	15
Existing Completion Prior to DHC		DK
Yield (bbls/mcf)		0.0019
Average 1997 rate (BOPD) prior to DHC		0.2
New Completion		MV
Initial Test (BOPD)	Estimated	5

Month	Estimated (Bbl)	DK Forecast (Bbl)	MV Forecast (Bbl)	Est. MV (BOPD)	Allocated MV (%)	
1	82	7	75	5.0	91%	DK .003 (bbl/mcf)
2	75	13	62	2.2	83%	DK .003 (bbl/mcf)
3	40	9	31	1.0	78%	
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. 168

After a 7 day SI period:

Mesaverde BHP =	761 psi	5308' (Mid perf)	Measured MV BHP from offset well #139E
Dakota BHP =	516 psi	7362' (Mid perf)	Calc BHP from 7 day SITP - Sept. 1996

$$\text{Gas Gradient} = \frac{(.0134)(.66)(2054)}{(.96)(655)} = 0.03 \text{ psi/ft}$$

Adjusting to a common datum of 5308':

Mesaverde BHP =	761 psi	
Dakota BHP =	516 - [(0.03)(7362-5308)]	= 454 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 #168				
GAS GRAVITY:	0.66		% N2	0.25	
CONDENSATE (YES=1):	1		% CO2	1.32	%
RESERVOIR TEMP:	195	F	% H2S	0.00	%
SURFACE TEMP:	60	F	Pc =	672.74	%
DEPTH OF ZONE:	7362	Foot	Tc =	372.72	

SURFACE PRES	BHP	Z	BHP/Z
Psia	psia		psia
437	516	0.9578	538

P/Z Test Report - USGS(PI)

Entity : RINCON UNIT (011510)
Field : BASIN (4100)
Reservoir: DAKOTA (604)
Operator : UNION OIL COMPANY OF CALIFORNIA (34551)
Location : S36 T27N R7W A RIO ARBA
Basin : SAN JUAN (580)
Zone : DAKOTA (602DKOT)
District : AZTEC
API : 30039823770000

Product: GAS
Start : 196212
Stop : 199703
Status : ACTIVE
Well # : 168
Upper : 7370
Lower : 7462
Lat : 36.53494
Lng : 107.52143

Test Information

Date	Gas MCFD	Liq Bbls	** Pressures *** SITP	FTP	CLP	P/Z	Z Factor	Cond Cum at Test	Gas Cum at Test
19621204	4885	0.0	2550	399	1108	3804	0.832		
19790628	181	0.0	669	268		906	0.905	12184	1615412
19810713	253	0.0	670	317		907	0.905	13026	1746438
19831121	247	0.0	862	640		1202	0.880	13956	1884390
19851209	234	0.0	721	359		984	0.898	14722	2021632
19881130	419	0.0	827	395		1148	0.884	15724	2182072
19901107	293	0.0	712	119		971	0.899	16571	2322129
19920921	284	0.0	672	383		910	0.905	17157	2439328
19930407	187	0.0	462	259		608	0.934	17457	2478964
19960913	156	0.0	437	81		573	0.937	18120	2680443

SPIRIT ENERGY 76

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

Heather Dahlgren
Engineering Technician

TEB:had:ss
Att.