



New Name. Same Spirit.
A Business Unit of Unocal

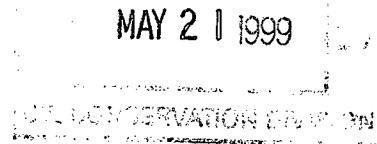
DHC 6/10/99
2353

May 19, 1999

U.S. Department of the Interior
Bureau of Land Management
Attn.: Joe Hewitt
1235 La Plata Highway
Farmington, NM 87401

Commissioner of Public Lands
State of New Mexico
Attn.: Pete Martinez
P.O. Box 1148
Santa Fe, NM 87504-1148

New Mexico Oil Conservation Division
Attn.: David Catanach
2040 S. Pacheco Street
Santa Fe, NM 87505
Cc: NMOCD, Aztec, NM



Gentlemen,

Union Oil Company of California (UNOCAL) requests approval to down hole commingle production from the Blanco Mesaverde and Basin Dakota formations in the following Rincon Unit well, Rio Arriba County, New Mexico.

Well	Lease	Legal Location
138	Federal	890' FNL, 790' FEL, NE Sec 25, T27N, R7W

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

Form C-107-A with supporting data is attached.

If you have any questions please contact Heather Dahlgren at 915/685-7665.

Sincerely,

Spirit Energy 76
A Business Unit of UNOCAL

Heather Dahlgren
Senior Engineering Technician

DISTRICT I

1625 N. French Dr., Hobbs, NM 88240

DISTRICT II

811 South First St., Artesia, NM 88210

DISTRICT III

1000 Rio Brazos Rd, Aztec, NM 87410

DISTRICT IV

2040 S. Pacheco, Santa Fe, NM 87505

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
Revised March 17, 1999

APPROVAL PROCESS:

☒ Administrative ☐ Hearing

EXISTING WELLBORE

☒ YES ☐ NO

UNION OIL COMPANY OF CALIFORNIA (UNOCAL)

1004 N. BIG SPRING, MIDLAND, TX 79702

Operator

Address

RINCON UNIT

138

A - 25 - 27N - 7W

RIO ARRIBA

Lease

Well No.

Unit Ltr. - Sec - Twp - Rge

County

Spacing Unit Lease Types: (check 1 or more)

OGRID NO. 023708

Property Code 011510

API NO. 30-039-06933

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)	TO BE DETERMINED		7462 - 7684
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: Estimated Current All Gas Zones: Measured Current Estimated Or Measured Original	a. (Current) 327 psia b. (Original) 1263 psia	a. b.	a. 390 psia b. 3006 psia
6. Oil Gravity (EAPI) or Gas BTU Content	1154 BTU		1129 BTU
7. Producing or Shut-In?	Not completed Shut-in		Producing
Production Marginal? (yes or no) * 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 * If Producing, give date and oil/gas/water rates of recent test (within 60 days)	YES Date: Rates: Date: Rates:	 Date: Rates: Date: Rates:	YES Date: Rates: Date: 2-99 Rates: 116 MCFD, .3 BOPD, .5 BWPD
8. Fixed Percentage Allocation Formula - % for each zone (total of %'s to equal 100%)	SEE ATTACHED Oil: % Gas: %	Oil: % Gas: %	SEE ATTACHED 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 (R-9893)
Have all offset operators been given written notice of the proposed downhole commingling? ☒ Yes ☐ No11. 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 ☐ No13. 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

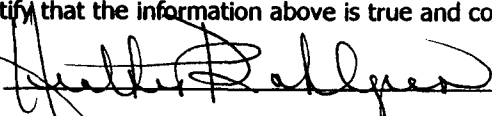
15. NMOCD Reference Cases for Rule 303(D) Exceptions: ORDER NO(S). SEE ATTACHED

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



TITLE: Senior Engineering Tech DATE: 5/19/99

TYPE OR PRINT NAME HEATHER DAHLGREN

TELEPHONE NO. (915) 685-7665

May 19, 1999

Supplemental Data for C-107-A, Rincon Unit Well No. 138

Well History: The Rincon Unit Well No. 138 was drilled and completed as a Dakota gas producer in July 1962. Mesaverde reserves would be developed most economically at this time with a downhole commingled completion. An estimated completion date for the Mesaverde is August 1999.

Production History: The average 1998 gas rate was 106 Mcfd from the Dakota with trace oil and water production. An estimated initial rate for the first 30 days of Mesaverde production is 300 Mcfd and 4 Bopd. This estimate is an average based on actual IP's and production from six recent Mesaverde completions on the Rincon Unit.

Pressure Data: Original and current bottom hole pressures were calculated from surface shut-in casing pressures. Pressure data from the offset Mesaverde well Rincon Unit #107 was used for the #138 Mesaverde completion. Current pressures are based on a three day shut-in in June of 1998. Please see attachments for the bottom hole pressure data.

Allocation of Production: Unocal proposes to use an allocation based on an established Dakota annual decline rate of 9.5%. 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. Please see attachments for the Dakota forecast. Initial flush production volumes have been added to the Dakota due to the anticipated extended shut-in during the workover. While tabular data has been provided for the first five years of the Dakota forecast, we anticipate being able to convert to a fixed allocation factor within 12 to 24 months. Unocal proposes using a yield factor for allocating liquid production. This factor is based on the average oil and water yield for 1998.

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
	UL	S	TWN	RNG.		
167M	C	13	27	N 7 W	DHC-863	11/5/1992
175M	F	20	27	N 6 W	DHC-864	11/24/1992
158M	J	22	27	N 6 W	DHC-909	4/27/1993
159M	F	18	27	N 6 W	DHC-904	6/18/1993
129M	P	29	27	N 6 W	DHC-903	6/18/1993
1E	G	30	27	N 6 W	DHC-902	6/18/1993
127M	D	28	27	N 6 W	DHC-916	8/17/1993
184M	P	15	27	N 7 W	DHC-911	8/25/1993
170M	I	20	27	N 6 W	DHC-920	9/17/1993
126M	P	27	27	N 6 W	DHC-914	9/17/1993
151M	O	14	27	N 7 W	DHC-918	9/17/1993
136E	D	23	27	N 7 W	DHC-912	9/17/1993
125M	F	26	27	N 6 W	DHC-95	9/17/1993
137E	J	24	27	N 7 W	DHC-913	9/17/1993
180M	D	21	27	N 6 W	DHC-940	10/25/1993
174M	F	19	27	N 6 W	DHC-966	1/31/1994
128M	O	28	27	N 6 W	DHC-1042	8/31/1994
133E	D	14	27	N 7 W	DHC-1043	8/31/1994
185E	J	22	27	N 7 W	DHC-1038	8/31/1994
178E	I	23	27	N 7 W	DHC-1040	8/31/1994
138E	P	25	27	N 7 W	DHC-1044	8/31/1994
139E	F	25	27	N 7 W	DHC-1041	8/31/1994
149M	F	30	27	N 7 W	DHC-1037	8/31/1994
131E	C	36	27	N 7 W	DHC-1039	8/31/1994
302	C	11	26	N 7 W	DHC-1050	11/3/1994
303	E	33	27	N 6 W	DHC-1086	2/3/1995
171M	J	21	27	N 6 W	DHC-1101	3/7/1995
229E	M	34	27	N 7 W	DHC-1124	5/16/1995
186M	L	33	27	N 6 W	DHC-1176	12/21/1995
187E	P	35	27	N 7 W	DHC-1176	12/21/1995
134	B	12	26	N 7 W	DHC-1190	3/7/1996
170	M	20	27	N 6 W	DHC-1192	3/7/1996
168E	I	36	27	N 7 W	DHC-1191	3/7/1996
203	M	27	27	N 7 W	DHC-1261	5/23/1996
183	K	31	27	N 6 W	DHC-1376	10/16/1996
168	A	36	27	N 7 W	DHC-1778	2/4/1998
139	K	25	27	N 6 W	DHC-1777	2/4/1998
181	G	22	27	N 6 W	DHC-1779	2/4/1998
166E	F	32	27	N 6 W	DHC-1784	2/24/1998
201E	J	2	26	N 7 W	DHC-1841	3/6/1998
57E	O	1	26	N 7 W	DHC-1865	4/1/1998
57	A	1	26	N 7 W	DHC-1892	4/9/1998
131	K	36	27	N 7 W	DHC-1906	4/14/1998
137	K	24	27	N 7 W	DHC-1907	4/14/1998
137E	J	24	27	N 7 W	DHC-913	4/14/1998
169	K	26	27	N 7 W	DHC-1917	4/27/1998
192	K	1	26	N 7 W	DHC-1918	4/27/1998
192E	D	1	26	N 7 W	DHC-2097	9/15/1998

Well Location and Acreage Dedication Plat

T.D. 7785

Section A.

Date **MAY 22, 1962**

Operator **EL PASO NATURAL GAS COMPANY** Lease **RINCON UNIT** **SF079321**
 Well No. **138** Unit Letter **A** Section **25** Township **27-N** Range **7-W** NMPM
 Located **890** Feet From **NORTH** Line, **790** Feet From **EAST** Line
 County **RIO ARriba** G. L. Elevation **6723** Dedicated Acreage **328.03** Acres
 Name of Producing Formation **DAKOTA** Pool **BASIN DAKOTA**

1. Is the Operator the only owner in the dedicated acreage outlined on the plat below?
 Yes ☒ No ☐
2. If the answer to question one is "no", have the interests of all the owners been consolidated by communitization agreement or otherwise? Yes ☐ No ☐ If answer is "yes", Type of Consolidation.
3. If the answer to question two is "no", list all the owners and their respective interests below:

OwnerLand Description

Section B.

This is to certify that the information in Section A above is true and complete to the best of my knowledge and belief.

El Paso Natural Gas Company

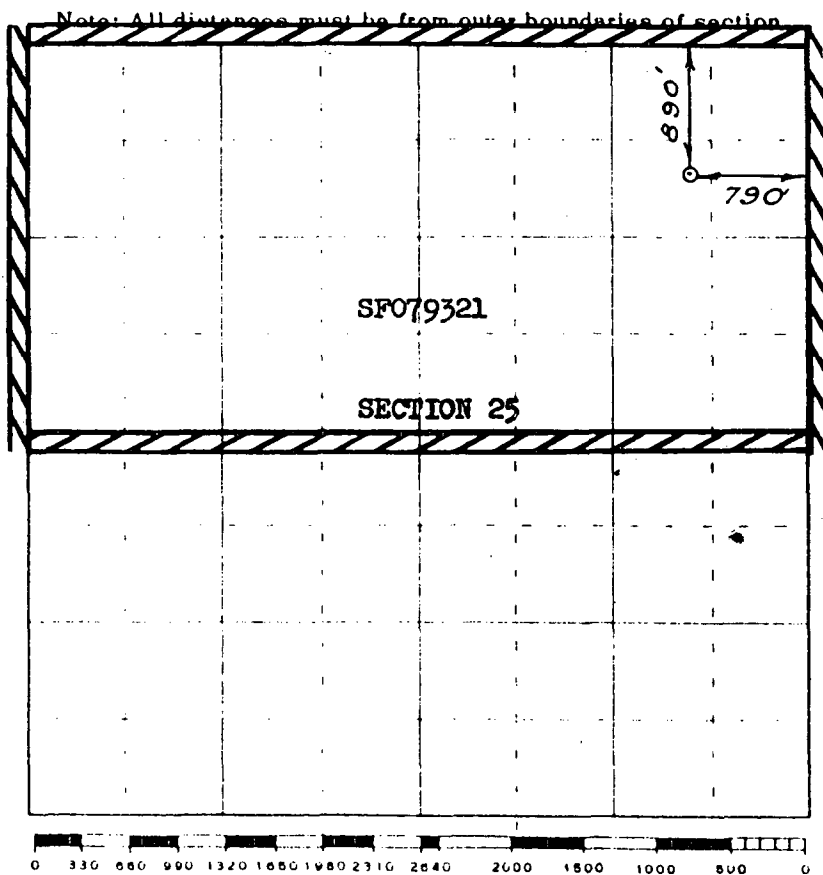
(Operator)

Original Signed **D. W. Meehan**

(Representative)

Box 990

(Address)

Farmington, New Mexico

Scale 4 inches equal 1 mile

This is to certify that the above plat was prepared from field notes of actual surveys made by me or under my supervision and that the same are true and correct to the best of my knowledge and belief.

(Seal)

Date Surveyed **MAY 21, 1962**

David O. Tilden
 Registered Professional Engineer and/or Land Surveyor

Farmington, New Mexico

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

¹ API Number 30-039-06933		² Pool Code 72319		³ Pool Name BLANCO MESAVERDE	
⁴ Property Code 011510		⁵ Property Name RINCON UNIT			⁶ Well Number 138
⁷ OGRID No. 023708		⁸ Operator Name UNION OIL COMPANY OF CALIFORNIA (UNOCAL)			⁹ Elevation 6723'

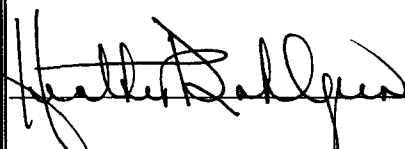
¹⁰ Surface Location

UL or lot no. A	Section 25	Township 27N	Range 7W	Lot Idn	Feet from the 890	North/South line N	Feet from the 790	East/West line E	County Rio Arriba
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¹¹ Bottom 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 328.03	¹³ Joint or Infill Y	¹⁴ Consolidation Code U		¹⁵ Order No. Unitization					

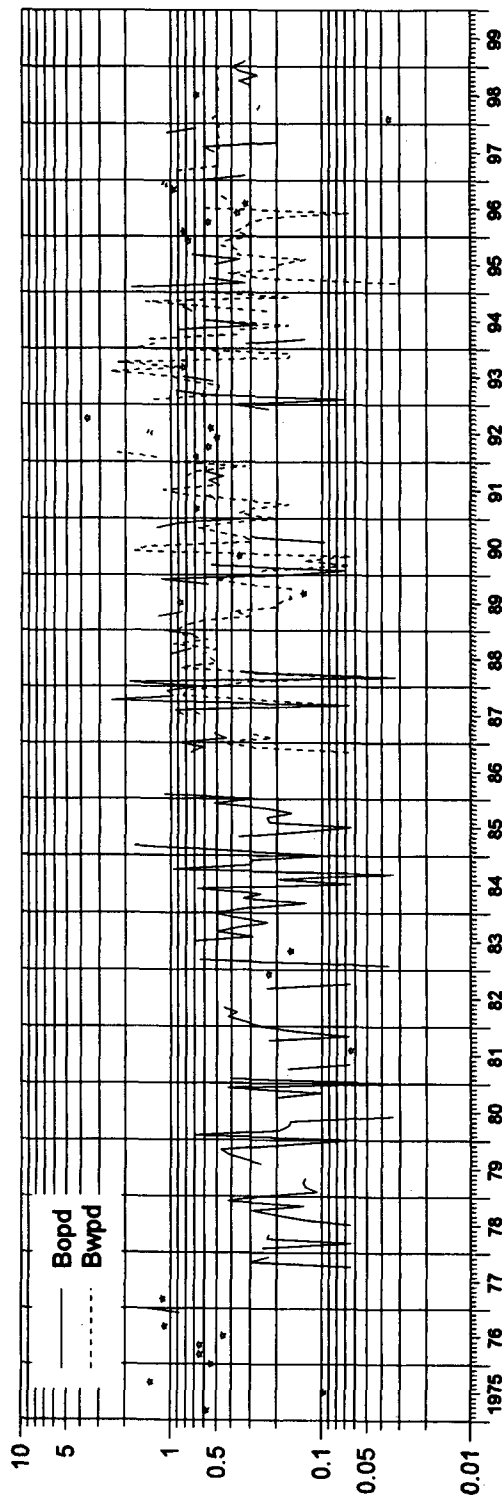
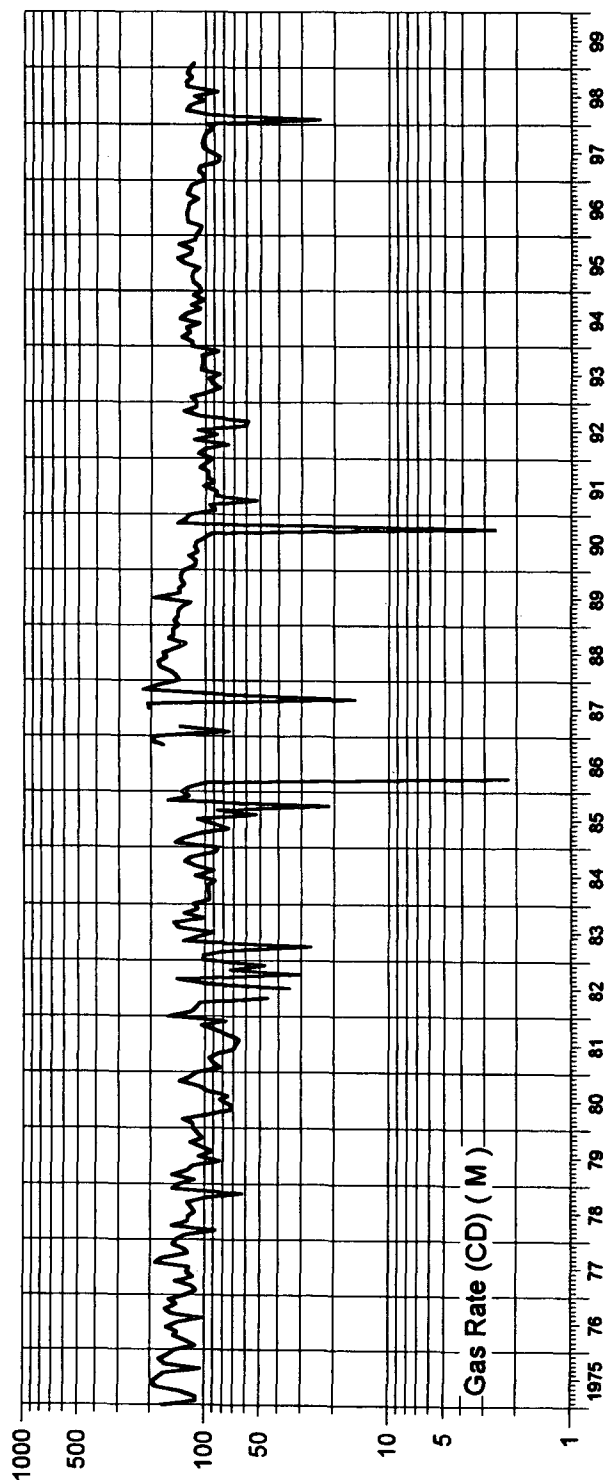
NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

6 890' 790'				¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief  Printed Name HEATHER DAHLGREN Title ENGINEERING TECHNICIAN Date 5-17-99	
				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 Date of Survey Signature and Seal of Professional Surveyor: Certificate Number	

UNION OIL COMPANY OF CALIFORNIA

RINCON UNIT 138:DK

RIO ARriba CO., NEW MEXICO



RINCON_UNIT_138:DK

DATE	GAS VOL PROD Mcf	OIL VOL PROD bbl	WATER VOL PROD bbl	Gas Rate (CD) Mcf/d	Oil Rate (CD) bbl/d	Water Rate (CD) bbl/d	Cum Gas Prod Mcf	Cum Oil Prod bbl
19970101	3193	20	0	103	0.6	0.0	1849227	6410
19970201	2867	9	0	102	0.3	0.0	1852094	6419
19970301	3403	0	28	110	0.0	0.9	1855497	6419
19970401	3192	0	15	106	0.0	0.5	1858689	6419
19970501	2665	0	15	86	0.0	0.5	1861354	6419
19970601	2516	0	15	84	0.0	0.5	1863870	6419
19970701	2937	16	15	95	0.5	0.5	1866807	6435
19970801	3213	19	15	104	0.6	0.5	1870020	6454
19970901	3159	6	15	105	0.2	0.5	1873179	6460
19971001	3186	0	15	103	0.0	0.5	1876365	6460
19971101	2990	32	15	100	1.1	0.5	1879355	6492
19971201	2869	21	15	93	0.7	0.5	1882224	6513
19980101	2996	0	15	97	0.0	0.5	1885220	6513
19980201	668	1	15	24	0.0	0.5	1885888	6514
19980301	2939	0	15	95	0.0	0.5	1888827	6514
19980401	3828	8	15	128	0.3	0.5	1892655	6522
19980501	3778	8	15	122	0.3	0.5	1896433	6530
19980601	3042	0	15	101	0.0	0.5	1899475	6530
19980701	3572	21	15	115	0.7	0.5	1903047	6551
19980801	2651	0	15	86	0.0	0.5	1905698	6551
19980901	3786	9	15	126	0.3	0.5	1909484	6560
19981001	3971	11	15	128	0.4	0.5	1913455	6571
19981101	3560	8	15	119	0.3	0.5	1917015	6579
19981201	3914	11	15	126	0.4	0.5	1920929	6590
19990101	3776	12	15	122	0.4	0.5	1924705	6602
19990201	3234	9	0	116	0.3	0.0	1927939	6611

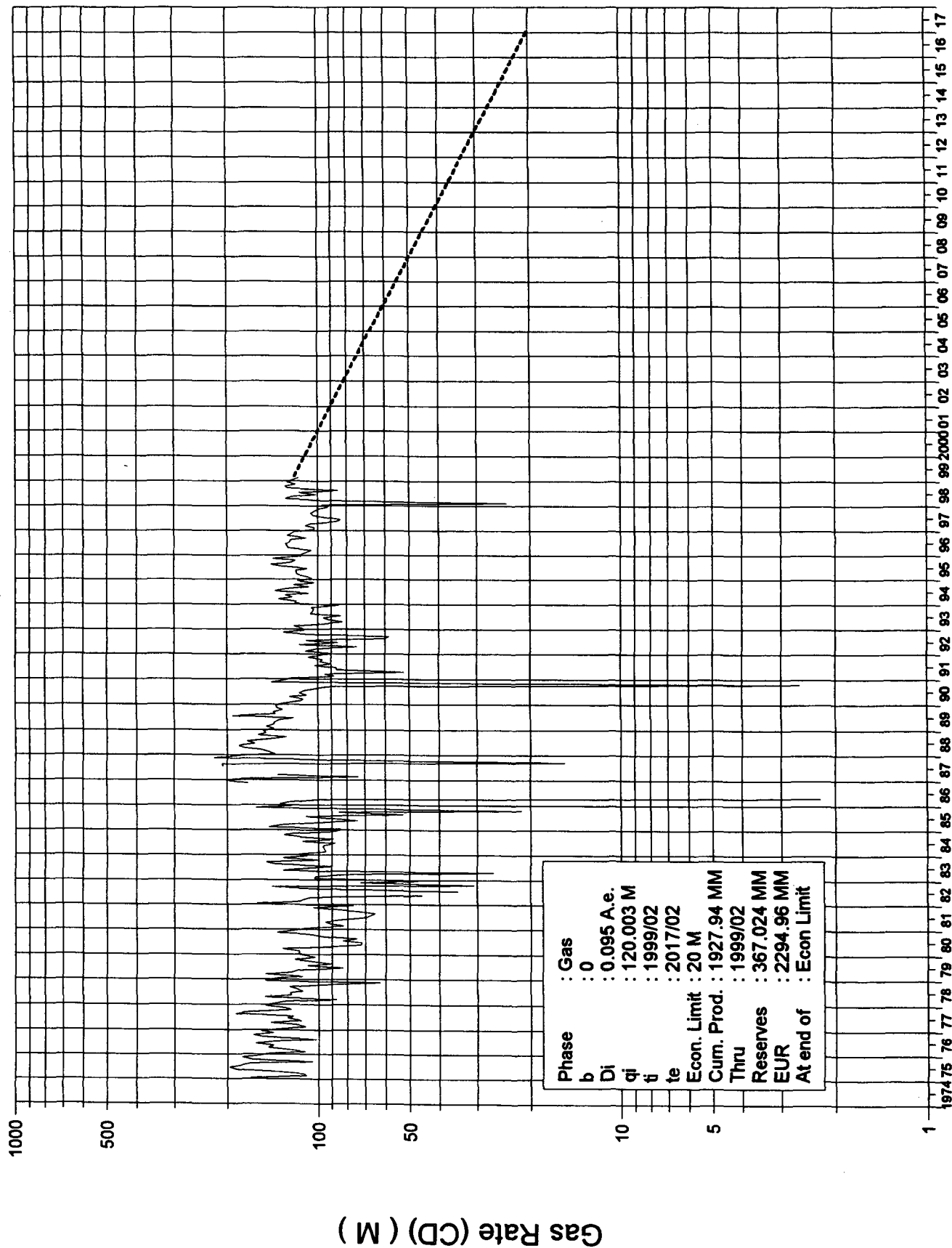
WELL NAME :**RINCON UNIT 107 MESAVERDE OFFSET**

	ORIGINAL		CURRENT
Test Date:	Sep-58	Test Date:	Jun-98
GAS GRAVITY:	0.668	GAS GRAVITY:	0.668
CONDENSATE (YES=1):	1	CONDENSATE (YES=1):	1
RESERVOIR TEMP:	150 F	RESERVOIR TEMP:	150 F
SURFACE TEMP:	60 F	SURFACE TEMP:	60 F
DEPTH OF ZONE:	5123 ft	DEPTH OF ZONE:	5123 ft
% N2	0.82	% N2	0.82
% CO2	0.95	% CO2	0.95
% H2S	0.00	% H2S	0.00
Pc =	669.63	Pc =	669.63
Tc =	373.47	Tc =	373.47
SURFACE PRESS	1,103 psia	SURFACE PRESS	280 psia
BHP	1,263 psia	BHP	315 psia
Z	0.8788	Z	0.9654
BHP/Z	1,437 psia	BHP/Z	327 psia

WELL NAME :**RINCON UNIT 138 DAKOTA**

	ORIGINAL		CURRENT
Test Date:	Jul-62	Test Date:	Jun-98
GAS GRAVITY:	0.65	GAS GRAVITY:	0.65
CONDENSATE (YES=1):	1	CONDENSATE (YES=1):	1
RESERVOIR TEMP:	190 F	RESERVOIR TEMP:	190 F
SURFACE TEMP:	60 F	SURFACE TEMP:	60 F
DEPTH OF ZONE:	7573 ft	DEPTH OF ZONE:	7573 ft
% N2	0.18	% N2	0.18
% CO2	1.22	% CO2	1.22
% H2S	0.00	% H2S	0.00
Pc =	673.05	Pc =	673.05
Tc =	370.52	Tc =	370.52
SURFACE PRESS	2,472 psia	SURFACE PRESS	320 psia
BHP	3,006 psia	BHP	378 psia
Z	0.8947	Z	0.9683
BHP/Z	3,360 psia	BHP/Z	390 psia

RINCON UNIT 138:DK



RU 138DK Forecast

Well	RU 138
Existing Completion Prior to DHC	DK
Annual Decline	9.50%
Monthly Decline Factor (Annual / 12)	0.7917
Average Monthly volume (Mcf) prior to DHC	3225
Average Yield (bbls/mcf) Oil	0.002
Average Yield (bbls/mcf) Water	0.005
Est. Volume Prior to DHC (Mcf) - Aug. 1999	3550
	1998 Annual Average
	1998 Annual Average
	1998 Annual Average

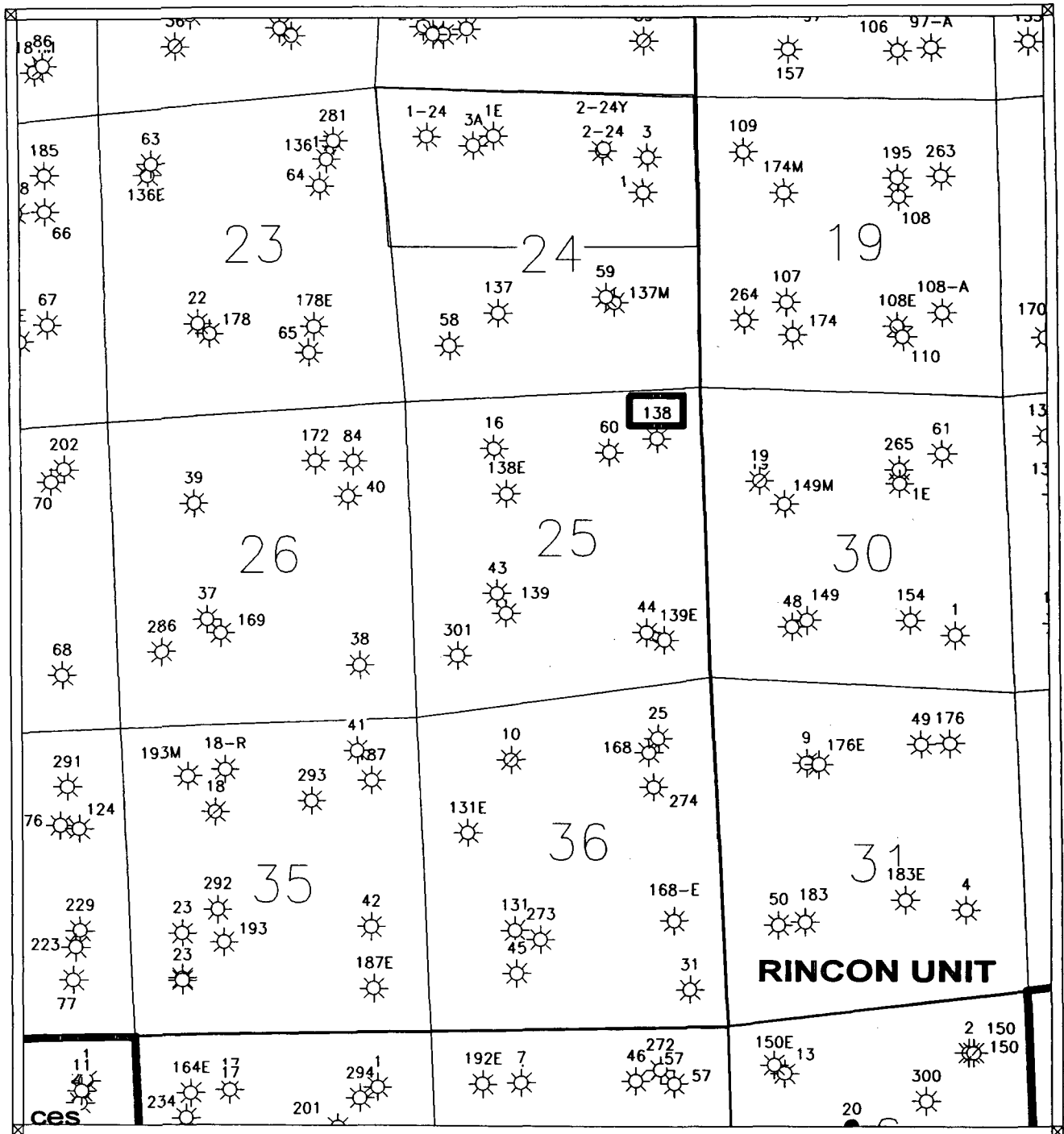
* Forecasted volumes to be adjusted for actual days on production & actual volume prior to commingling

Month	DK Forecast (Mcf)	DK Forecast (Bbls-Oil)	DK Forecast (Bbls-Water)	
1	134	4083	7.8	18.8
2	127	3874	7.4	17.8
3	117	3550	6.7	16.3
4	116	3522	6.7	16.2
5	115	3494	6.6	16.1
6	114	3466	6.6	15.9
7	113	3439	6.5	15.8
8	112	3412	6.5	15.7
9	111	3385	6.4	15.6
10	110	3358	6.4	15.4
11	110	3331	6.3	15.3
12	109	3305	6.3	15.2
13	108	3279	6.2	15.1
14	107	3253	6.2	15.0
15	106	3227	6.1	14.8
16	105	3202	6.1	14.7
17	104	3176	6.0	14.6
18	104	3151	6.0	14.5
19	103	3126	5.9	14.4
20	102	3101	5.9	14.3
21	101	3077	5.8	14.2
22	100	3052	5.8	14.0
23	100	3028	5.8	13.9
24	99	3004	5.7	13.8

+ DK flush volume @ 15%
+ DK flush volume @ 10%

RINCON UNIT 138:DK - Gas Forecast @ 9.5% A.E.

DATE	Average Rate Mscf/d	Monthly Volume MMscf	Cumulative Volume MMscf	Remaining Reserves MMscf
1999/ 3	120	3.70	1931.6	363.3
1999/ 4	119	3.56	1935.2	359.8
1999/ 5	117	3.64	1938.8	356.1
1999/ 6	117	3.50	1942.3	352.6
1999/ 7	115	3.58	1945.9	349.0
1999/ 8	115	3.55	1949.5	345.5
1999/ 9	114	3.41	1952.9	342.1
1999/10	113	3.49	1956.4	338.6
1999/11	112	3.36	1959.7	335.2
1999/12	111	3.43	1963.2	331.8
2000/ 1	110	3.41	1966.6	328.4
2000/ 2	109	3.17	1969.8	325.2
2000/ 3	108	3.35	1973.1	321.9
2000/ 4	107	3.22	1976.3	318.6
2000/ 5	106	3.29	1979.6	315.4
2000/ 6	106	3.17	1982.8	312.2
2000/ 7	105	3.24	1986.0	308.9
2000/ 8	104	3.22	1989.2	305.7
2000/ 9	103	3.09	1992.3	302.6
2000/10	102	3.16	1995.5	299.5
2000/11	101	3.04	1998.5	296.4
2000/12	100	3.11	2001.6	293.3
2001/ 1	100	3.09	2004.7	290.2
2001/ 2	99	2.77	2007.5	287.5
2001/ 3	98	3.02	2010.5	284.4
2001/ 4	97	2.92	2013.4	281.5
2001/ 5	96	2.98	2016.4	278.6
2001/ 6	96	2.87	2019.3	275.7
2001/ 7	95	2.93	2022.2	272.8
2001/ 8	94	2.91	2025.1	269.8
2001/ 9	93	2.80	2027.9	267.0
2001/10	92	2.86	2030.8	264.2
2001/11	92	2.75	2033.5	261.4
2001/12	91	2.81	2036.3	258.6
2002/ 1	90	2.79	2039.1	255.8
2002/ 2	90	2.51	2041.6	253.3
2002/ 3	88	2.74	2044.4	250.6
2002/ 4	88	2.64	2047.0	247.9
2002/ 5	87	2.70	2049.7	245.3
2002/ 6	86	2.59	2052.3	242.7
2002/ 7	86	2.65	2055.0	240.0
2002/ 8	85	2.63	2057.6	237.4
2002/ 9	84	2.53	2060.1	234.8
2002/10	83	2.59	2062.7	232.3
2002/11	83	2.49	2065.2	229.8
2002/12	82	2.55	2067.7	227.2
2003/ 1	82	2.53	2070.3	224.7
2003/ 2	81	2.27	2072.5	222.4
2003/ 3	80	2.48	2075.0	219.9
2003/ 4	80	2.39	2077.4	217.6
2003/ 5	79	2.44	2079.9	215.1
2003/ 6	78	2.35	2082.2	212.8
2003/ 7	77	2.40	2084.6	210.4
2003/ 8	77	2.38	2087.0	208.0
2003/ 9	76	2.29	2089.3	205.7
2003/10	76	2.34	2091.6	203.3
2003/11	75	2.25	2093.9	201.1
2003/12	74	2.30	2096.2	198.8
2004/ 1	74	2.29	2098.5	196.5
2004/ 2	73	2.13	2100.6	194.4



Scale 1:33250.74

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



0.1 0. 0.1 0.2 0.3 0.4 0.5 miles



LEASE MAP RINCON UNIT NO. 138 OPERATOR: UNION OIL CO. OF CALIFORNIA		
Scale 1:33250.74		
HADAMILGREN	5/17/1999	138d-GP