

**MERIDIAN OIL**

January 16, 1996

New Mexico Oil Conservation Division  
Attn: Mr. Bill Lemay  
2040 South Pacheco Street  
Santa Fe, New Mexico 87505

RE: **Cain # 15M**  
Unit J, Section 31, T29N, R09W  
Downhole Commingle Application  
Basin Dakota and Blanco Mesaverde Pools

Dear Mr. Lemay,

Meridian Oil Inc. requests administrative approval to downhole commingle production from the Basin Dakota and Blanco Mesaverde within the subject wellbore. Meridian Oil believes this production configuration will maximize production rates and ultimate recoveries from all pools. Ownership in each of the subject pools is common. All offset operators and the Bureau of Land Management have been notified of this application.

The Cain # 15M was mud drilled and dually completed in both the Blanco Mesaverde and Basin Dakota in 1982. The well has cumulative gas production of 759 MMCF from the Dakota and 357 MMCF from the Mesaverde. In 1994 a packer leakage test was performed which indicated communication between the two (2) producing zones.

In May 1995, this wellbore was worked over to remediate the zonal communication. The Mesaverde 1-1/2" tubing was pulled from the well, followed by the Dakota 1-1/2" tubing and packer. The Mesaverde tubing was plugged with paraffin. A bridge plug and packer combination assembly was run to verify the casing integrity. The casing successfully tested to 755 psi. The Dakota production tubing and packer were rerun with blast joints spaced across the Mesaverde interval. During landing operations, 4485' of Mesaverde 1-1/2" tubing was dropped down the wellbore, on top of the production packer. The additional cost and uncertainty of the fishing operations dictated discontinuing rig operations.

Prior to this work, the Dakota formation was producing 100 MCFD +/- and 2.3 BOPD, while the Mesaverde formation was producing 50 MCFD +/- and 1.5 BOPD. Gross remaining reserves for each formation are estimated below:

	Gas	Oil (Condensate)
Dakota	358 MMCF	8,450 bbls
Mesaverde	<u>99 MMCF</u>	<u>4,180 bbls</u>
Total	457 MMCF	12,630 bbls

Cain # 15M 1/16/96  
Downhole Commingle Application

Downhole commingle of production should benefit both formations through reduced liquid loading and lower operational expenses. A single 1-1/2" production tubing string will allow for efficient production of reserves. No waste, damage, or cross flow between the producing formations is anticipated. Shut-in surface pressures recorded in 1991 of 362 psi for the Mesaverde and 372 psi for the Dakota correspond well.

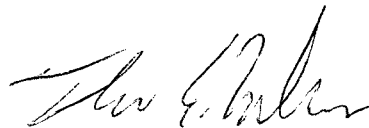
Analysis of the production characteristics and remaining reserve potential yield the following production allocation:

	Gas	Oil (Condensate)
Basin Dakota	66 %	66 %
Blanco Mesaverde	<u>34 %</u>	<u>34 %</u>
Total	100 %	100 %

Meridian Oil respectfully requests approval to downhole commingle the Basin Dakota and Blanco Mesaverde within the Cain # 15M wellbore. Downhole commingle of production will maximize production and ultimate recoveries from the referenced pools.

I can be reached by phone at (505) 326-9546 to address any concerns or comments.

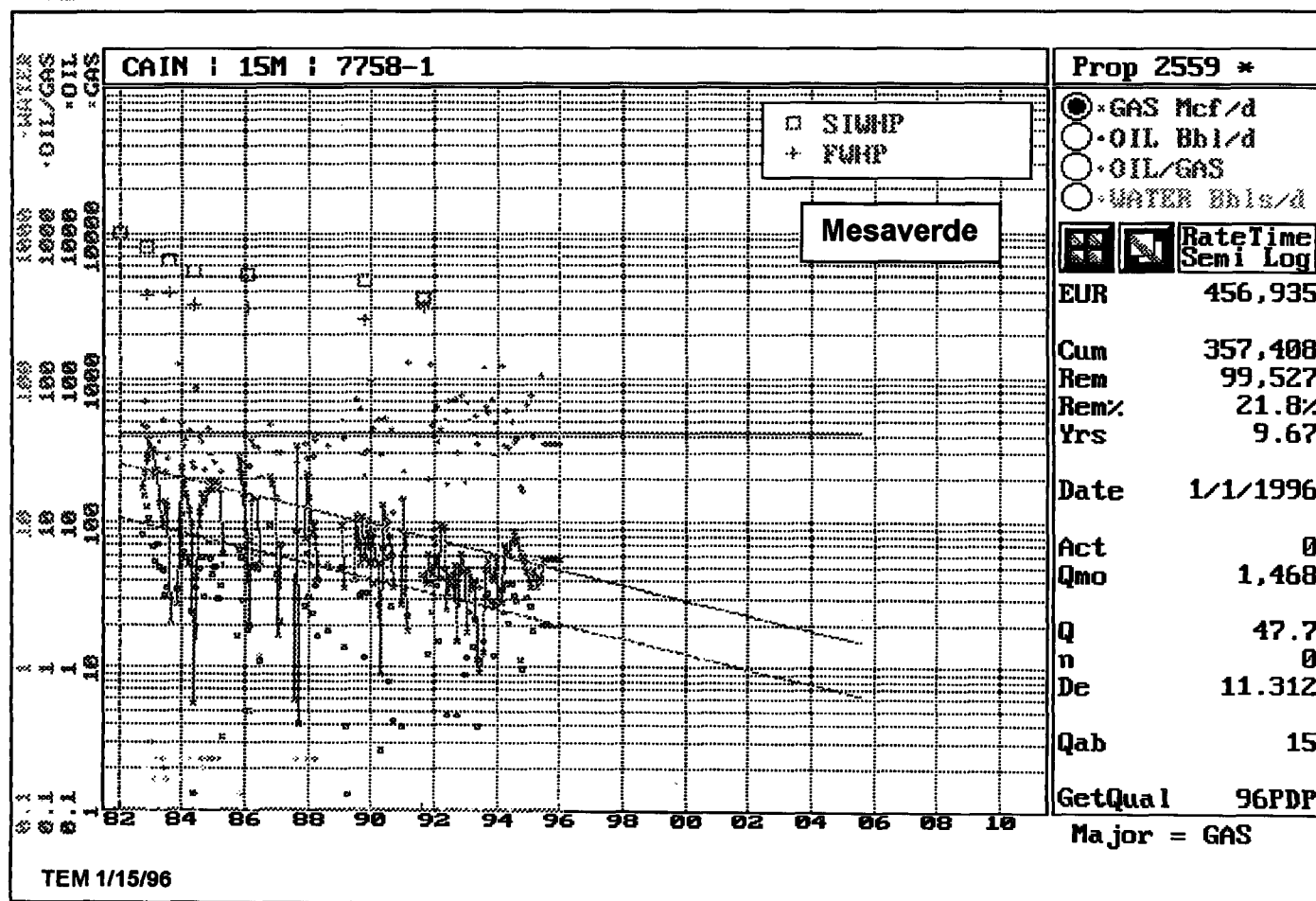
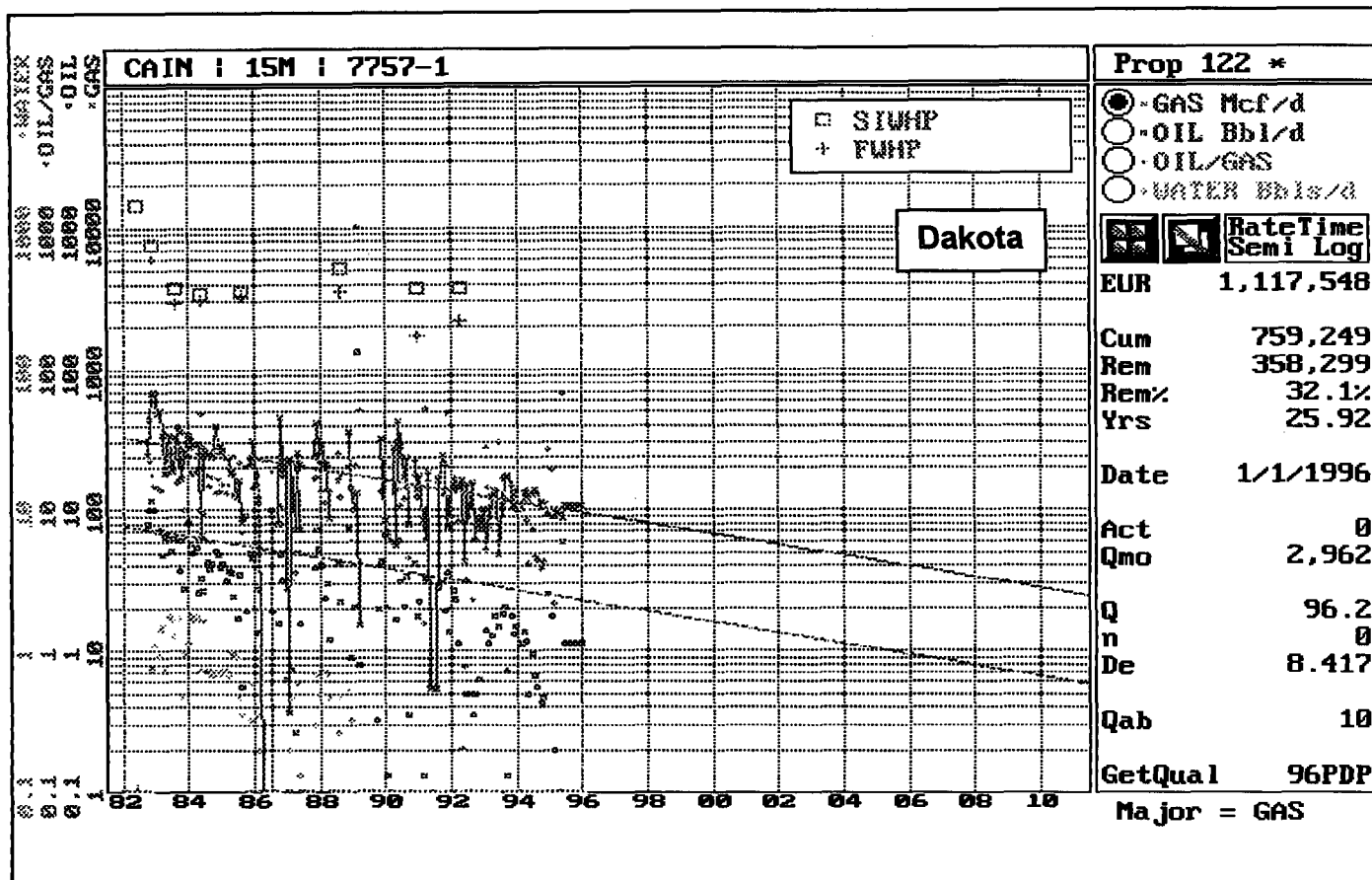
Best regards,

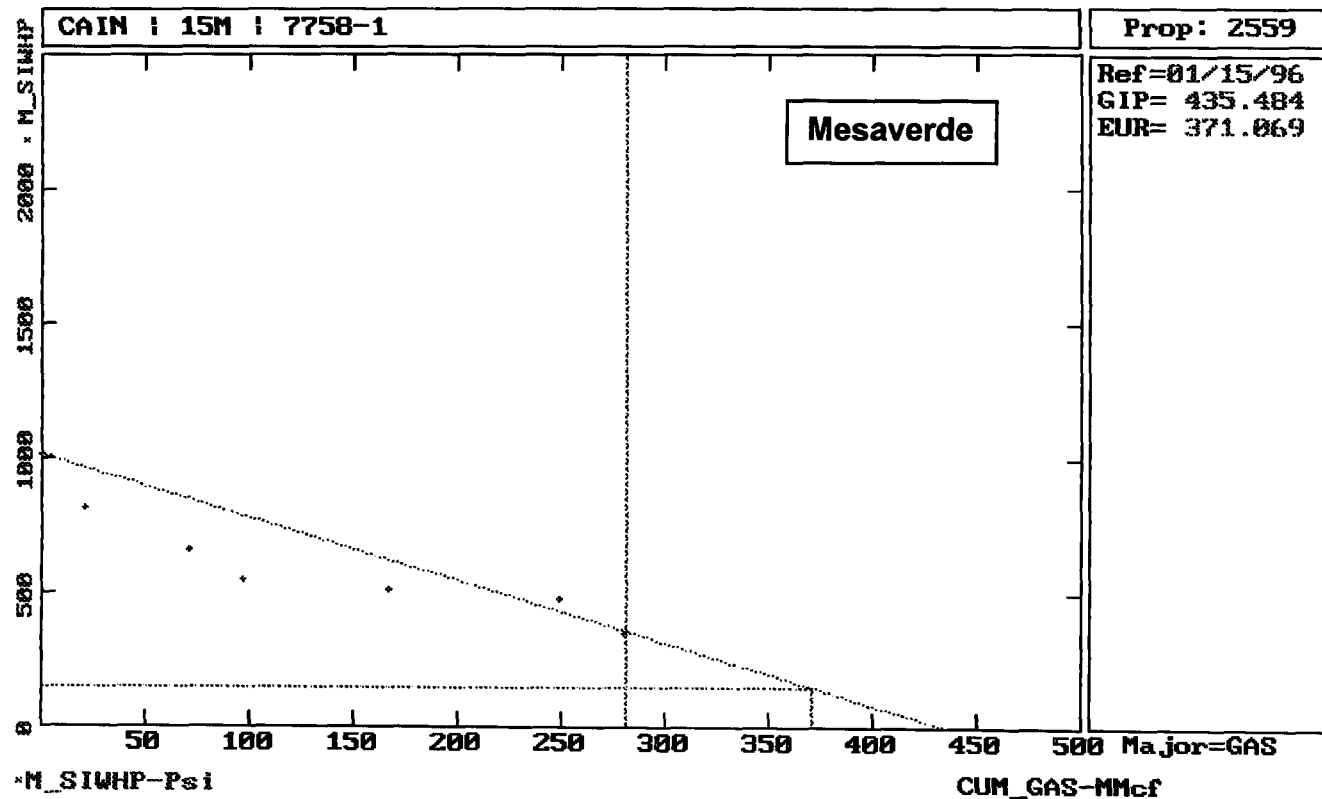
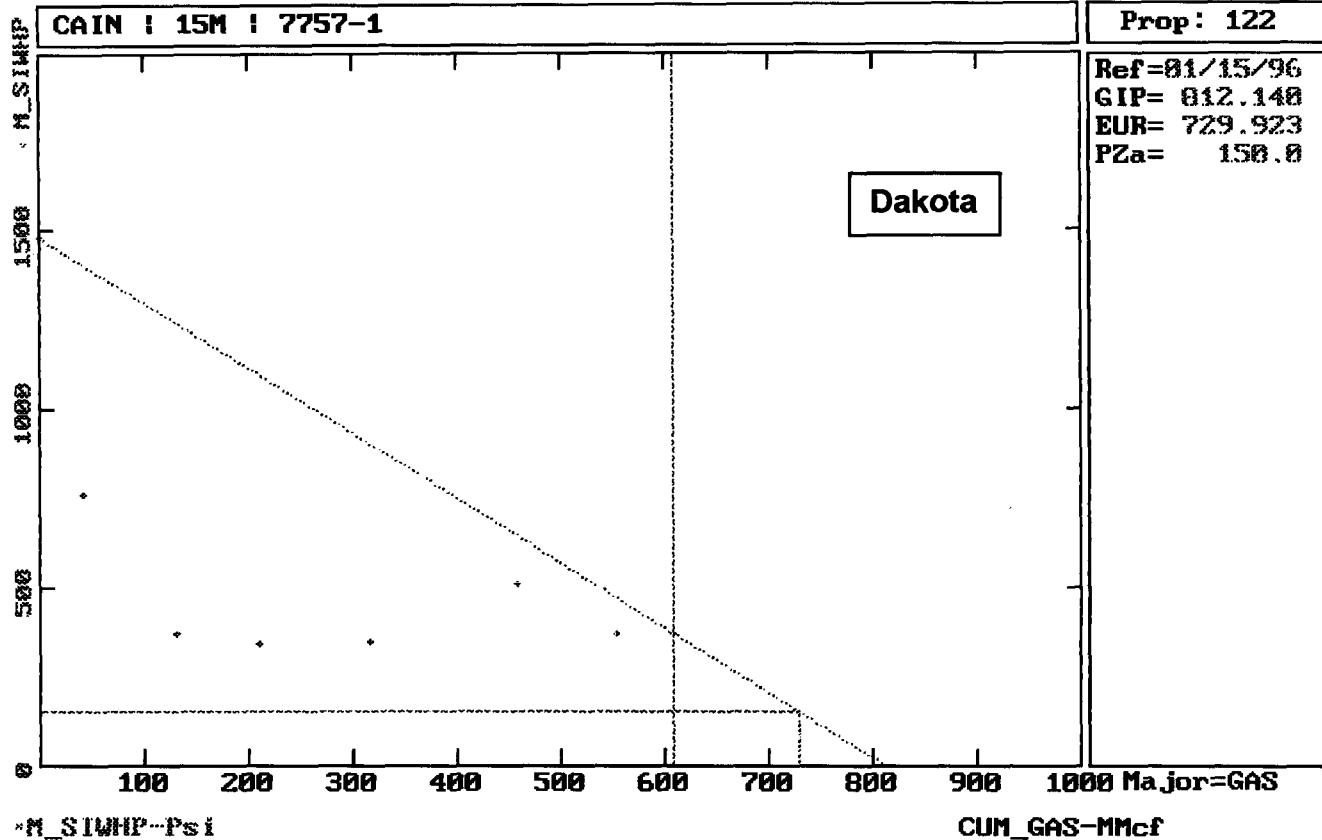


Thomas E. Mullins  
Reservoir Engineer

cc: Wellfile  
Peggy Bradfield  
James Strickler  
Rob Stanfield  
Bureau of Land Management - Farmington

R-09-W





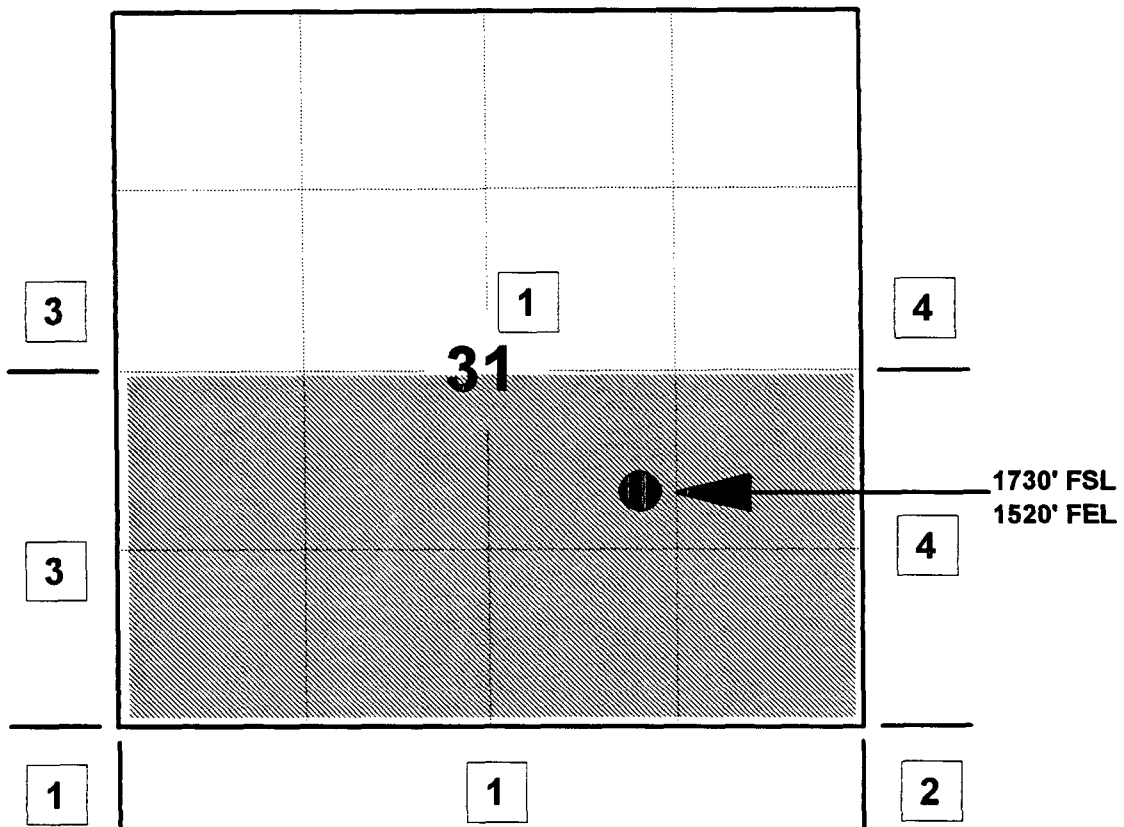
# MERIDIAN OIL INC

CAIN #15M

OFFSET OPERATOR \ OWNER PLAT

Mesaverde / Dakota Formations Commingle

Township 29 North, Range 9 West



1) Meridian Oil Inc

2) Amoco Production Company

PO Box 800, Denver, CO 80201

3) Conoco, Inc

10 Desta Drive, Suite 100W, Midland, TX 79705-4500

4) Conoco, Inc & Amoco Production Company

Mesaverde Formation

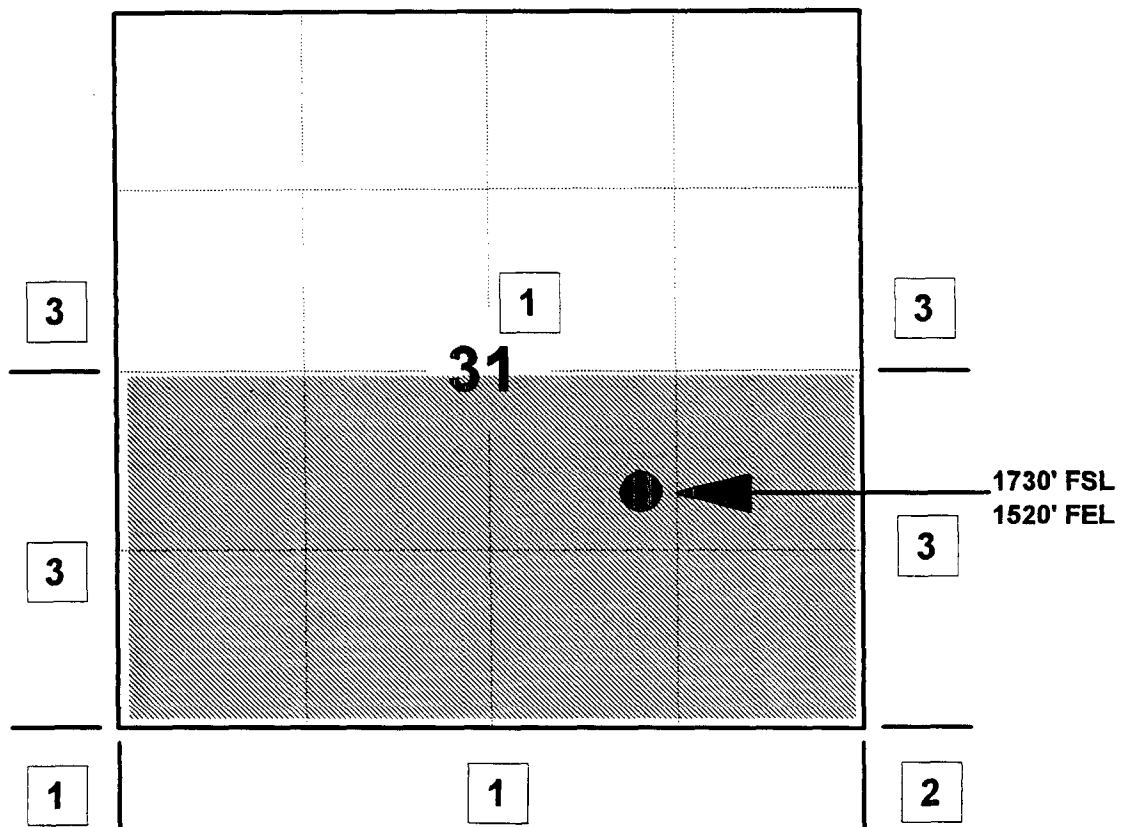
# MERIDIAN OIL INC

## CAIN #15M

### OFFSET OPERATOR \ OWNER PLAT

### Mesaverde / Dakota Formations Commingle

Township 29 North, Range 9 West



1) Meridian Oil Inc

2) Amoco Production Company

PO Box 800, Denver, CO 80201

3) Conoco, Inc

10 Desta Drive, Suite 100W, Midland, TX 79705-4500

Dakota Formation

# Cain #15M

## Proposed

Blanco Mesaverde/Basin Dakota Commingle

SE Section 31, T-29-N, R-9-W, San Juan County, NM

Today's Date: 12/13/95

Spud: 03/11/82

Completed: 4/17/82

12-1/4" Hole

8-5/8", 24.0#, K-55, Csg set @ 242',  
Cmt w/189 cf (160 sx) (Circulated to Surface)

Top of Cmt @ 300' (TS)

Ojo Alamo @ 825'

Fruitland @ 1790'

Pictured Cliffs @ 2062'

DV Tool @ 2412',  
Cmt 3rd stg w/804 cf (550 sx)

Chacra @ 3025'

Mesaverde @ 3623'

Mesaverde Perforations:  
3958' - 4590', Total 34 holes

DV Tool @ 4819',  
Cmt 2nd stg w/1102 cf (750 sx)

Gallup @ 5532'

Ran 215 jts 1-1/2" (and assorted subs),  
2.3#, J-55, tbg @ 6635', (SN @ 6603')

Greenhorn @ 6311'  
Graneros @ 6375'

Dakota @ 6497'

Dakota Perforations:  
6489' - 6695', Total 17 holes

FC @ 6680'

5-1/2", 15.5#, K-55, Csg set @ 6724',  
Cmt w/573 cf (395 sx)

PBTD 6680'

7-7/8" Hole

TD 6725'



# Cain #15M

## CURRENT

Blanco Mesaverde/Basin Dakota Dual

SE Section 31, T-29-N, R-9-W, San Juan County, NM

Today's Date: 12/13/95

Spud: 03/11/82

Completed: 4/17/82

Ojo Alamo @ 825'

Fruitland @ 1790'

Pictured Cliffs @ 2062'

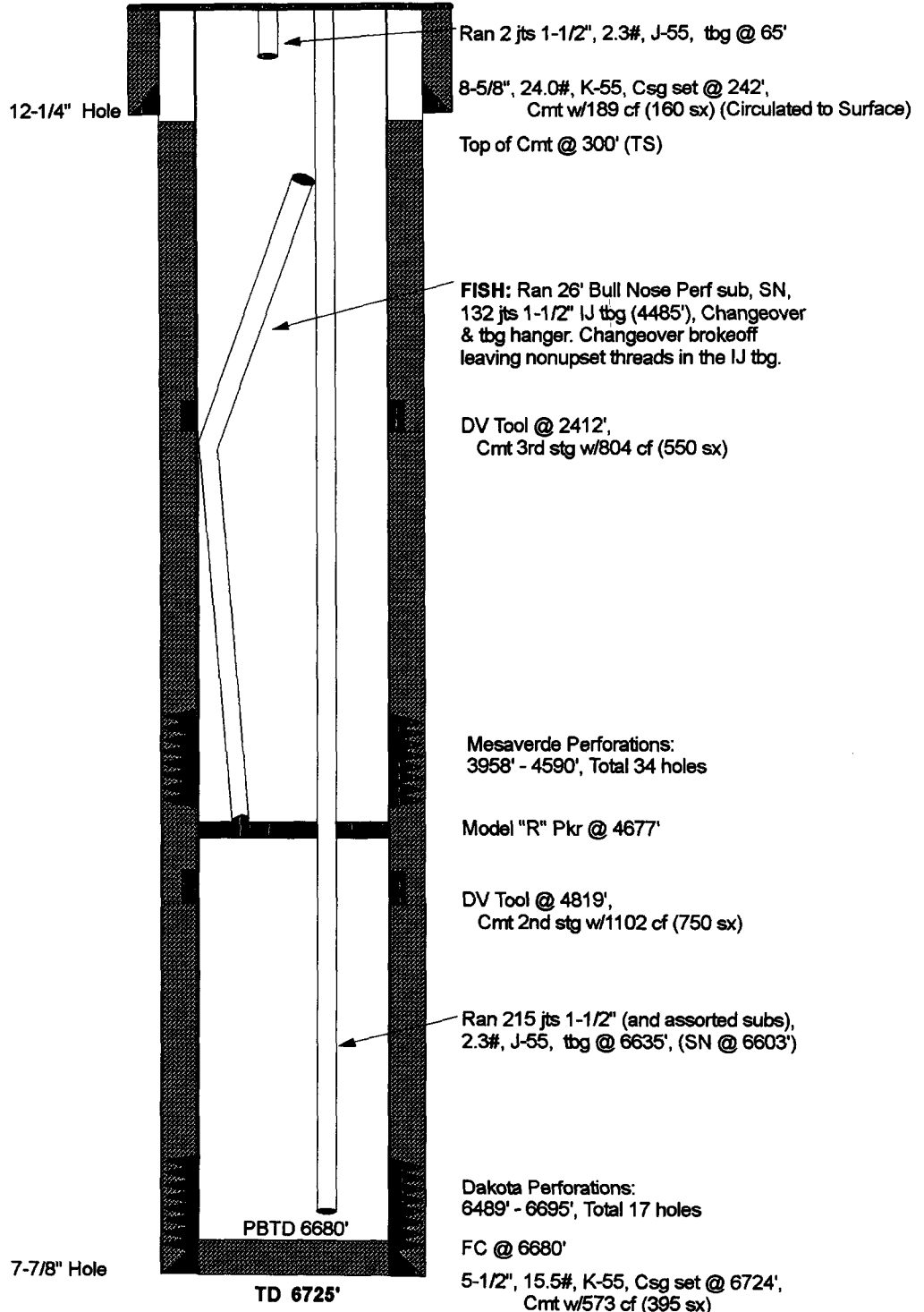
Chacra @ 3025'

Mesaverde @ 3623'

Gallup @ 5532'

Greenhorn @ 6311'  
Graneros @ 6375'

Dakota @ 6497'



# PERTINENT DATA SHEET

<b>WELLNAME:</b> Cain #15M	<table style="width: 100%;"> <tr> <td style="width: 50%;"><b>DP NUMBER:</b></td> <td style="width: 50%; text-align: center;">MV 7758</td> <td style="width: 50%; text-align: center;">DK 7757</td> </tr> <tr> <td><b>PROP. NUMBER:</b></td> <td style="text-align: center;">0020291</td> <td style="text-align: center;">0020291</td> </tr> </table>	<b>DP NUMBER:</b>	MV 7758	DK 7757	<b>PROP. NUMBER:</b>	0020291	0020291																																																		
<b>DP NUMBER:</b>	MV 7758	DK 7757																																																							
<b>PROP. NUMBER:</b>	0020291	0020291																																																							
<b>WELL TYPE:</b> Blanco Mesaverde/Basin Dakota	<table style="width: 100%;"> <tr> <td style="width: 50%;"><b>ELEVATION:</b></td> <td style="width: 50%;"><b>GL:</b> 5783'</td> </tr> <tr> <td></td> <td><b>KB:</b> 5795'</td> </tr> </table>	<b>ELEVATION:</b>	<b>GL:</b> 5783'		<b>KB:</b> 5795'																																																				
<b>ELEVATION:</b>	<b>GL:</b> 5783'																																																								
	<b>KB:</b> 5795'																																																								
<b>LOCATION:</b> 1730' FSL 1520' FEL SE Sec. 31, T29N, R9W San Juan County, New Mexico	<table style="width: 100%;"> <tr> <td style="width: 50%;"><b>INITIAL POTENTIAL:</b></td> <td style="width: 50%;">AOF 4,707 MCF/D (MV)</td> </tr> <tr> <td></td> <td>AOF 2,877 MCF/D (DK)</td> </tr> <tr> <td><b>SICP:</b> Sept., 1991</td> <td>362 PSIG (MV)</td> </tr> <tr> <td><b>SICP:</b> March, 1992</td> <td>372 PSIG (DK)</td> </tr> </table>	<b>INITIAL POTENTIAL:</b>	AOF 4,707 MCF/D (MV)		AOF 2,877 MCF/D (DK)	<b>SICP:</b> Sept., 1991	362 PSIG (MV)	<b>SICP:</b> March, 1992	372 PSIG (DK)																																																
<b>INITIAL POTENTIAL:</b>	AOF 4,707 MCF/D (MV)																																																								
	AOF 2,877 MCF/D (DK)																																																								
<b>SICP:</b> Sept., 1991	362 PSIG (MV)																																																								
<b>SICP:</b> March, 1992	372 PSIG (DK)																																																								
<b>OWNERSHIP:</b> <table style="width: 100%;"> <tr> <td style="width: 50%;"><b>GW:</b> 25.000000%</td> <td style="width: 50%; text-align: center;">MV/DK</td> </tr> <tr> <td><b>NRI:</b> 20.500000%</td> <td></td> </tr> <tr> <td><b>SJBT GW:</b> 75.000000%</td> <td></td> </tr> <tr> <td><b>SJBT NRI:</b> 61.500000%</td> <td></td> </tr> </table>	<b>GW:</b> 25.000000%	MV/DK	<b>NRI:</b> 20.500000%		<b>SJBT GW:</b> 75.000000%		<b>SJBT NRI:</b> 61.500000%		<table style="width: 100%;"> <tr> <td style="width: 50%;"><b>DRILLING:</b></td> <td style="width: 50%;"><b>SPUD DATE:</b> 03-11-82</td> </tr> <tr> <td></td> <td><b>COMPLETED:</b> 04-17-82</td> </tr> <tr> <td></td> <td><b>TOTAL DEPTH:</b> 6725'</td> </tr> <tr> <td></td> <td><b>PBTD:</b> 6680'</td> </tr> <tr> <td></td> <td><b>COTD:</b> 6680'</td> </tr> </table>	<b>DRILLING:</b>	<b>SPUD DATE:</b> 03-11-82		<b>COMPLETED:</b> 04-17-82		<b>TOTAL DEPTH:</b> 6725'		<b>PBTD:</b> 6680'		<b>COTD:</b> 6680'																																						
<b>GW:</b> 25.000000%	MV/DK																																																								
<b>NRI:</b> 20.500000%																																																									
<b>SJBT GW:</b> 75.000000%																																																									
<b>SJBT NRI:</b> 61.500000%																																																									
<b>DRILLING:</b>	<b>SPUD DATE:</b> 03-11-82																																																								
	<b>COMPLETED:</b> 04-17-82																																																								
	<b>TOTAL DEPTH:</b> 6725'																																																								
	<b>PBTD:</b> 6680'																																																								
	<b>COTD:</b> 6680'																																																								
<b>CASING RECORD:</b> <table style="width: 100%; border-top: 1px solid black; border-bottom: 1px solid black;"> <thead> <tr> <th style="text-align: left;">HOLE SIZE</th> <th style="text-align: left;">SIZE</th> <th style="text-align: left;">WEIGHT</th> <th style="text-align: left;">GRADE</th> <th style="text-align: left;">DEPTH</th> <th style="text-align: left;">EQUIP.</th> <th style="text-align: left;">CEMENT</th> <th style="text-align: left;">TOC</th> </tr> </thead> <tbody> <tr> <td>12-1/4"</td> <td>8-5/8"</td> <td>24.0#</td> <td>K-55</td> <td>242'</td> <td>-</td> <td>189 cf (160 sx)</td> <td>surface</td> </tr> <tr> <td>7-7/8"</td> <td>5-1/2"</td> <td>15.5#</td> <td>K-55</td> <td>6724'</td> <td>3rd stg, DV @ 2412'</td> <td>804 cf (550 sx)</td> <td>300' (TS)</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td>2nd stg, DV @ 4819'</td> <td>1102 cf (750 sx)</td> <td>2412' (75%)</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Float Collar @ 6680'</td> <td>573 cf (395 sx)</td> <td>4245' (75%)</td> </tr> <tr> <td>Tubing (MV)</td> <td>1-1/2"</td> <td>2.76#</td> <td>J-55</td> <td>65'</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Tubing (DK)</td> <td>1-1/2"</td> <td>2.3#</td> <td>J-55</td> <td>6635'</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p style="text-align: center;">(MV) Ran 2 jts 1-1/2", 2.3#, J-55, tbg set at 65'</p> <p style="text-align: center;">(DK) Ran 1 jt 1-1/2", Seating Nipple @ 6603', 214 jts 1-1/2", 2.3#, EUE, J-55, 10rd, tbg set at 6635', Model "R" Production packer @ 4677'.</p>		HOLE SIZE	SIZE	WEIGHT	GRADE	DEPTH	EQUIP.	CEMENT	TOC	12-1/4"	8-5/8"	24.0#	K-55	242'	-	189 cf (160 sx)	surface	7-7/8"	5-1/2"	15.5#	K-55	6724'	3rd stg, DV @ 2412'	804 cf (550 sx)	300' (TS)						2nd stg, DV @ 4819'	1102 cf (750 sx)	2412' (75%)						Float Collar @ 6680'	573 cf (395 sx)	4245' (75%)	Tubing (MV)	1-1/2"	2.76#	J-55	65'				Tubing (DK)	1-1/2"	2.3#	J-55	6635'			
HOLE SIZE	SIZE	WEIGHT	GRADE	DEPTH	EQUIP.	CEMENT	TOC																																																		
12-1/4"	8-5/8"	24.0#	K-55	242'	-	189 cf (160 sx)	surface																																																		
7-7/8"	5-1/2"	15.5#	K-55	6724'	3rd stg, DV @ 2412'	804 cf (550 sx)	300' (TS)																																																		
					2nd stg, DV @ 4819'	1102 cf (750 sx)	2412' (75%)																																																		
					Float Collar @ 6680'	573 cf (395 sx)	4245' (75%)																																																		
Tubing (MV)	1-1/2"	2.76#	J-55	65'																																																					
Tubing (DK)	1-1/2"	2.3#	J-55	6635'																																																					
<table style="width: 100%;"> <tr> <td style="width: 50%;"><b>FORMATION TOPS:</b></td> <td style="width: 50%;">           Nacimiento Ojo Alamo Kirtland Fruitland Pictured Cliffs         </td> </tr> <tr> <td></td> <td style="text-align: right;">           825'   1790' 2062'         </td> </tr> <tr> <td></td> <td style="text-align: right;">           Chacra Mesaverde Gallup Greenhorn Graneros Dakota         </td> </tr> <tr> <td></td> <td style="text-align: right;">           3025' 3623' 5532' 6311' 6375' 6497'         </td> </tr> </table>		<b>FORMATION TOPS:</b>	Nacimiento Ojo Alamo Kirtland Fruitland Pictured Cliffs		825'   1790' 2062'		Chacra Mesaverde Gallup Greenhorn Graneros Dakota		3025' 3623' 5532' 6311' 6375' 6497'																																																
<b>FORMATION TOPS:</b>	Nacimiento Ojo Alamo Kirtland Fruitland Pictured Cliffs																																																								
	825'   1790' 2062'																																																								
	Chacra Mesaverde Gallup Greenhorn Graneros Dakota																																																								
	3025' 3623' 5532' 6311' 6375' 6497'																																																								
<b>LOGGING:</b> IEL, CDL, CBL, Temp Survey																																																									
<b>PERFORATIONS</b> (DK) 6489', 6543', 6548', 6553', 6558', 6601', 6603', 6605', 6607', 6617', 6643', 6651', 6653', 6688', 6690', 6692', 6695', Total 17 holes.  (MV) 3958', 3962', 4035', 4054', 4140', 4146', 4151', 4157', 4162', 4191', 4196', 4303', 4335', 4340', 4345', 4360', 4382', 4388', 4394', 4399', 4404', 4409', 4414', 4419', 4424', 4436', 4443', 4473', 4483', 4518', 4539', 4444', 4474', 4590', Total 34 holes.																																																									
<b>STIMULATION:</b> (DK) Frac w/128,341 gal. of 30# gel wtr. and 57,975# of 20/40 sand.  (MV) Frac w/221,812 gal. fresh wtr. and 168,000# 20/40 sand.																																																									
<b>WORKOVER HISTORY:</b> May/June 1995: MIRU. ND WH. NU BOP. TIH, tag fill. TOOH. TIH w/tbg to 3688'. Attempt to circ. Tbg plugged. TIH to 3708'. Circ well w/N2. Blow well & CO. TOOH w/MV tbg. Release pkr, TOOH w/182 jts 1-1/2" tbg & 5-1/2" pkr. TIH w/5-1/2" csg scraper. TIH w/RBP & pkr. Set RBP @ 6472', set pkr @ 6423'. PT RBP to 1100#/10 min, OK. Reset pkr @ 4607'. Load hole w/wtr. PT to 790#/10 min, OK. Reset pkr @ 3924'. Load hole between csg & tbg to surface. PT to 755#/10 min, OK. TIH, release RBP. SD for wknd. TIH w/215 jts 1-1/2", 2.3#, J-55 tbg & Model "R" pkr, landed DK tbg @ 6635'. Set pkr @ 4677'. SDON. TIH w/132 jts 1-1/2", 2.3#, J-55 tbg. Changeover broke off. Tbg dropped to top of pkr @ 4677'. TOOH. TIH w/2 jts 1-1/2", 2.3#, J-55, MV tbg, landed @ 65'. ND BOP. NU WH. RD. Rig released.																																																									
<table style="width: 100%;"> <tr> <td style="width: 50%;"><b>PRODUCTION HISTORY:</b></td> <td style="width: 50%;"><b>DATE OF LAST PRODUCTION:</b></td> </tr> <tr> <td><b>Cumulative as of Oct. 95:</b></td> <td>Oct., 1995</td> </tr> <tr> <td><b>Current Rate:</b></td> <td></td> </tr> </table> <table style="width: 100%;"> <tr> <td style="width: 50%;"><b>Gas</b></td> <td style="width: 50%;"><b>Oil</b></td> </tr> <tr> <td>747.6 MMcf</td> <td>15.4 MBo (DK)</td> </tr> <tr> <td>100.4 Mcfd</td> <td>1.84 Bopd (DK)</td> </tr> </table>		<b>PRODUCTION HISTORY:</b>	<b>DATE OF LAST PRODUCTION:</b>	<b>Cumulative as of Oct. 95:</b>	Oct., 1995	<b>Current Rate:</b>		<b>Gas</b>	<b>Oil</b>	747.6 MMcf	15.4 MBo (DK)	100.4 Mcfd	1.84 Bopd (DK)																																												
<b>PRODUCTION HISTORY:</b>	<b>DATE OF LAST PRODUCTION:</b>																																																								
<b>Cumulative as of Oct. 95:</b>	Oct., 1995																																																								
<b>Current Rate:</b>																																																									
<b>Gas</b>	<b>Oil</b>																																																								
747.6 MMcf	15.4 MBo (DK)																																																								
100.4 Mcfd	1.84 Bopd (DK)																																																								
<table style="width: 100%;"> <tr> <td style="width: 50%;"><b>PRODUCTION HISTORY:</b></td> <td style="width: 50%;"><b>DATE OF LAST PRODUCTION:</b></td> </tr> <tr> <td><b>Cumulative as of Oct. 95:</b></td> <td>May, 1995</td> </tr> <tr> <td><b>Current Rate:</b></td> <td></td> </tr> </table> <table style="width: 100%;"> <tr> <td style="width: 50%;"><b>Gas</b></td> <td style="width: 50%;"><b>Oil</b></td> </tr> <tr> <td>345.5 MMcf</td> <td>12.2 MBo (MV)</td> </tr> <tr> <td>0 Mcfd</td> <td>0 Bopd (MV)</td> </tr> </table>		<b>PRODUCTION HISTORY:</b>	<b>DATE OF LAST PRODUCTION:</b>	<b>Cumulative as of Oct. 95:</b>	May, 1995	<b>Current Rate:</b>		<b>Gas</b>	<b>Oil</b>	345.5 MMcf	12.2 MBo (MV)	0 Mcfd	0 Bopd (MV)																																												
<b>PRODUCTION HISTORY:</b>	<b>DATE OF LAST PRODUCTION:</b>																																																								
<b>Cumulative as of Oct. 95:</b>	May, 1995																																																								
<b>Current Rate:</b>																																																									
<b>Gas</b>	<b>Oil</b>																																																								
345.5 MMcf	12.2 MBo (MV)																																																								
0 Mcfd	0 Bopd (MV)																																																								
<b>PIPELINE:</b> Williams Field Services																																																									