

DATE IN 4/16/97	SUSPENSE 5/6/97	ENGINEER BS	LOGGED KN	TYPE DHC
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ABOVE THIS LINE FOR DIVISION USE ONLY

## NEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau -

### ADMINISTRATIVE APPLICATION COVERSHEET

THIS COVERSHEET IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS

#### Application Acronyms:

[NSP-Non-Standard Proration Unit] [NSL-Non-Standard Location]  
 [DD-Directional Drilling] [SD-Simultaneous Dedication]  
 [DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]  
 [PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]  
 [WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]  
 [SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]  
 [EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

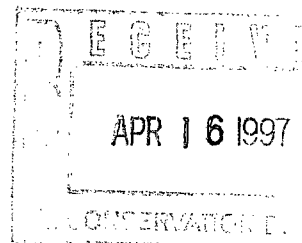
#### [1] TYPE OF APPLICATION - Check Those Which Apply for [A]

[A] Location - Spacing Unit - Directional Drilling  
☐ NSL ☐ NSP ☐ DD ☐ SD

Check One Only for [B] and [C]

[B] Commingling - Storage - Measurement  
☒ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

[C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery  
☐ WFX ☐ PMX ☐ SWD ☐ IPI ☐ EOR ☐ PPR



#### [2] NOTIFICATION REQUIRED TO: - Check Those Which Apply, or ☐ Does Not Apply

- [A] ☐ Working, Royalty or Overriding Royalty Interest Owners
- [B] ☒ Offset Operators, Leaseholders or Surface Owner
- [C] ☐ Application is One Which Requires Published Legal Notice
- [D] ☒ Notification and/or Concurrent Approval by BLM or SLO  
 U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office
- [E] ☐ For all of the above, Proof of Notification or Publication is Attached, and/or,
- [F] ☐ Waivers are Attached

#### [3] INFORMATION / DATA SUBMITTED IS COMPLETE - Statement of Understanding

I hereby certify that I, or personnel under my supervision, have read and complied with all applicable Rules and Regulations of the Oil Conservation Division. Further, I assert that the attached application for administrative approval is accurate and complete to the best of my knowledge and where applicable, verify that all interest (WI, RI, ORRI) is common. I understand that any omission of data, information or notification is cause to have the application package returned with no action taken.

Note: Statement must be completed by an individual with supervisory capacity.

Peggy Bradfield

Print or Type Name

Signature

Regulatory/Compliance Administrator

Title

Date

4-15-97

# BURLINGTON RESOURCES

---

SAN JUAN DIVISION

April 11, 1997

Mr. William LeMay  
New Mexico Oil Conservation Division  
2040 South Pacheco Street  
Santa Fe, New Mexico 87505

Re: Helms Federal #1  
1800'FSL, 1695'FWL Section 22, T-30-N, R-10-W, San Juan County, NM  
API #30-045-09330

Dear Mr. LeMay:

This is a request for administrative approval for downhole commingling the Blanco Mesa Verde and Basin Dakota pools in the subject well. This well was originally drilled and completed as a Mesa Verde/Dakota dual. Application was made for commingling this well in October 1996. We have recently completed a workover on this well, and determined that the Dakota bottom hole pressure is currently less than the original Mesa Verde bottom hole pressure. We have since spoken with Mr. Catanach of your office concerning this matter and are therefore resubmitting this application using the current data.

To comply with the New Mexico Oil Conservation Division rules, Burlington Resources Oil & Gas Company is submitting the following for your approval of this commingling:

1. Form C107A - Application for Downhole Commingling;
2. C-102 plat for each zone showing its spacing unit and acreage dedication;
3. Production curve for both the Dakota and Mesa Verde for at least one year;
4. Notification list of offset operators;
5. Shut in wellhead pressure and calculated down hole pressure;
6. Nine-section plats for the Mesa Verde and Dakota.
7. Pressure data from Tefeller Inc.
8. Current year-to-date monthly production for the Mesa Verde and Dakota.

The ownership for both the Mesa Verde and Dakota are common in this well. No notification to interest owners is required.

We will consult with the Supervisor of the Aztec District Office of the New Mexico Oil Conservation Division to establish an allocation formula.

Please let me know if you require additional data.

Sincerely,



Peggy Bradfield  
Regulatory/Compliance Administrator

encs.

xc: Bureau of Land Management

## 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

Burlington Resources Oil &amp; Gas Company

PO Box 4289, Farmington, NM 87499

Operator

Address

Helms Federal

1

K 22-30-10

San Juan

Lease

Well No.

Unit Ltr. - Sec - Twp - Rge

County

Spacing Unit Lease Types: (check 1 or more)

OGRID NO. 14538 Property Code 7108 API NO. 30-045-09330 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)	4508-5416'		7207-7417'
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	(Current) a. 628 psi (calc) see attached  (Original) b. 1005 psi (calc) see attached	a.  b.	a. 964 psi (electronic pressure bomb) - see attached  b. 2335 psi (calc) - see attached
6. Oil Gravity (°API) or Gas BTU Content	BTU 1191		BTU 1035
7. Producing or Shut-In?	producing		producing
Production Marginal? (yes or no)	yes		yes
* If Shut-In 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: n/a Rates:	Date: Rates:	Date: n/a Rates:
* If Producing, give data and oil/gas/water water of recent test (within 60 days)	Date: 3-1-97 Rates: 29 mcf/d; 0.3 bopd	Date: Rates:	Date: 3-1-97 Rates: 53 mcf/d; 0 bopd
8. Fixed Percentage Allocation Formula - % for each zone (total of %'s to equal 100%)	Oil: % Gas: % will be supplied upon completion	Oil: % Gas: %	Oil: % Gas: % will be supplied upon completion

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 communized 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). \_\_\_\_\_
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 Mary Ellen Lutey TITLE Product ion Engineer DATE 4/11/97TYPE OR PRINT NAME Mary Ellen Lutey TELEPHONE NO. ( 505 ) 326-9700

## Well Location and Acreage Designation Form

NOVEMBER 2, 1964

## Section A

## FEDERAL HELMS

Operator 1 SOUTHERN UNION GAS COMPANY 10550  
 Well No. 1800 Unit Letter K Section 22 Township 30 NORTH Range 10 WEST NMPM  
 Located 1800 Feet From SOUTH Line. 1695 Feet From 323.84 Line  
 County SAN JUAN DAKOTA & MESAVERDE 251 Dedication BASIN DAKOTA & BLANCO MESAVERDE  
 Name of Producing Formation Pool

1. Is the XX 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.

Note: All distances must be from outer boundaries of section.

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

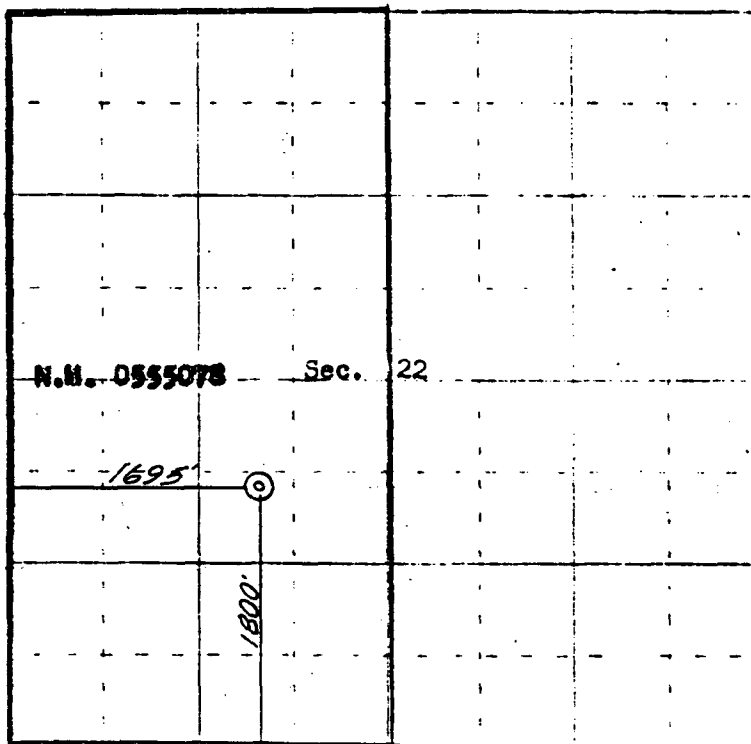
SOUTHERN UNION PRODUCTION COMPANY

Gilbert D. Noland (Operator)  
 GILBERT D. NOLAND, JR.

P. O. Box 808 (Address)

FARMINGTON,

NEW MEXICO



0 330 660 990 1320 1650 1980 2310 2640 2000 1500 1000 500 0

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.

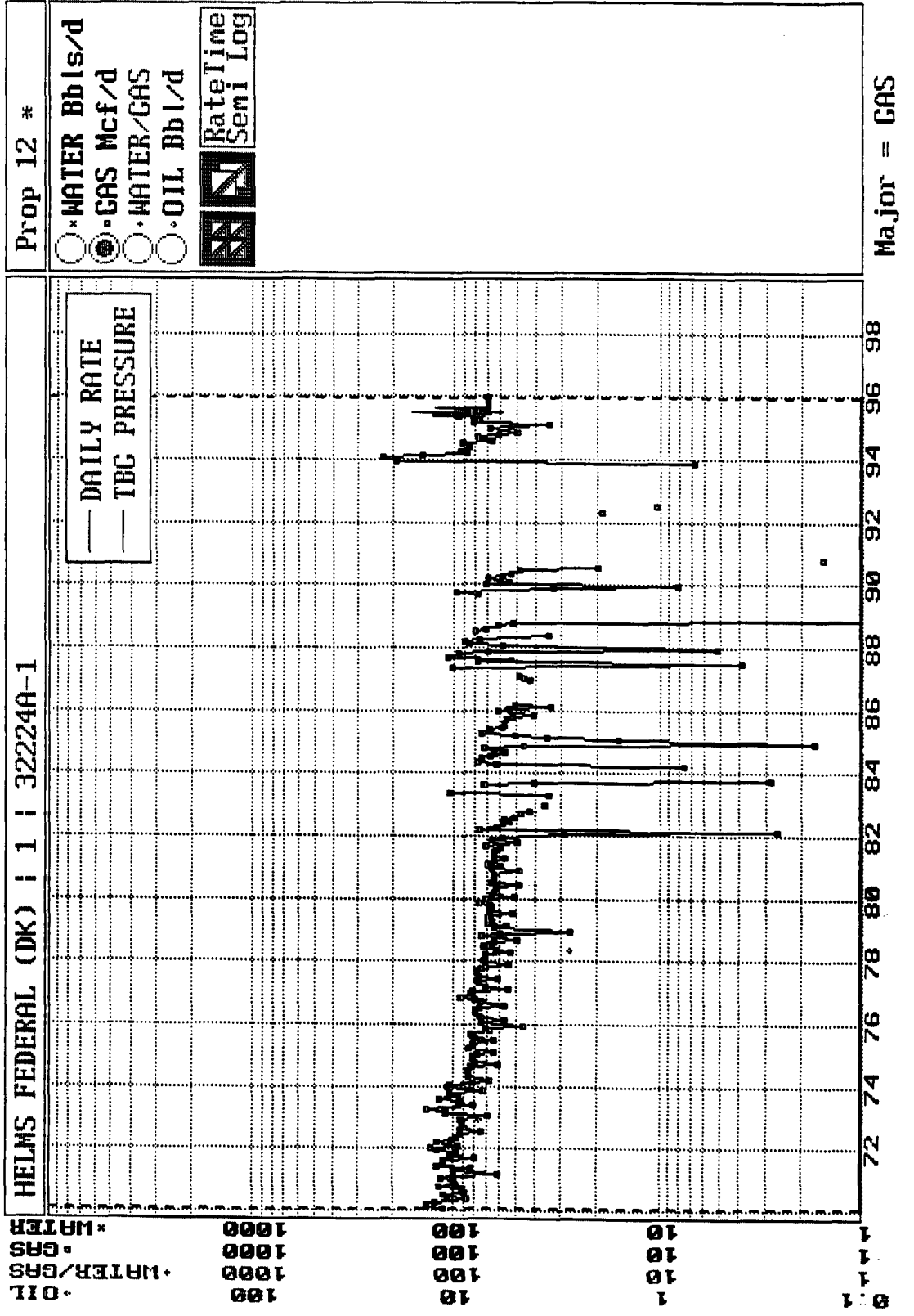
(Seal)

Date surveyed October 30, 1964

Farmington, New Mexico

James P. Reese  
 Registered Professional Engineer and or Land Surveyor





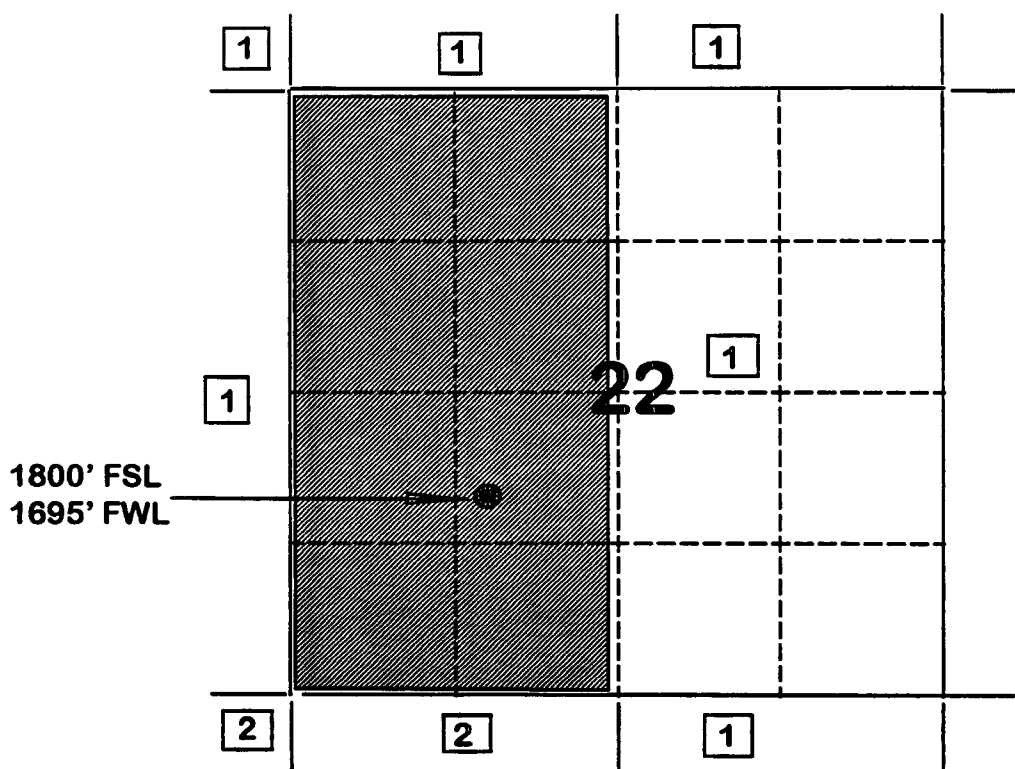
**BURLINGTON RESOURCES OIL AND GAS COMPANY**

## **HELMS FEDERAL #1**

**OFFSET OPERATOR \ OWNER PLAT**

**Mesaverde / Dakota Formations Commingle Well**

**Township 30 North, Range 10 West**



**1) Burlington Resources Oil and Gas Company Successor to Meridian Oil Inc.**

**2) Amoco Production Company**

**Bruce Zimney**

**P.O. Box 800**

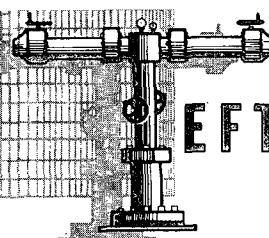
**Denver, CO 80201**

**FLOWING AND STATIC BHP  
CULLENDER AND SMITH METHOD**

VERSION 1.0 3/13/94

GAS GRAVITY	0.62
COND. OR MISC. (C/M)	C
%N2	0.14
%CO2	2.04
%H2S	0
DIAMETER (IN)	1.5
DEPTH (FT)	7010
SURFACE TEMPERATURE (DEG F)	60
BOTTOMHOLE TEMPERATURE (DEG F)	200
FLOWRATE (MCFPD)	0
SURFACE PRESSURE (PSIA)	1977
BOTTOMHOLE PRESSURE (PSIA)	2334.8

HELMS FEDERAL #1 DAKOTA - (ORIGINAL)



BHP • BU • PI • DD • GWT • RFS • GOR • FL • TS

**TEFTELLER, INC.**

reservoir engineering data

FARMINGTON, NEW MEXICO / MIDLAND, TEXAS  
GRAND JUNCTION, COLORADO

P. O. Box 1198  
Farmington, New Mexico 87499  
(505) 325-1731

Farmington Fax (505) 325-1148  
Midland Fax (915) 682-5329  
Grand Junction Fax (303) 241-7634

March 31, 1997

Burlington Resources Oil and Gas Company  
P.O. Box 4289  
Farmington, NM 87499

Attn: Ms Mary Ellen Lutey

Re: Report No. 2-29890-EP  
Helms Federal #1

Dear Ms. Lutey:

Results of data from electronic instrument attached to bridge plug  
set @ 5500' as follows:

Pressure stabilized @ 156.5 psi extrapolated to mid point  
of perforations of 7312' using 2% KCL water gradient.

Measured pressure @ 5500' = 156.5 psi

.440 psi/ft KCL water gradient - 1812' = 797.3 psi

Pressure @ mid-perfs - 7312' = 963.8 psi

If I can be of further assistance, please contact me any time.

Respectfully submitted,

Neil Tefteller, President

TEFTELLER, INC.  
P.O. Box 1198  
Farmington, NM 87499

Current  
Dakota  
Bottom Hole  
Pressure

Organize Data ScreenGraph Economics Report Plot Utility Quit  
 Browsing: HELMS FEDERAL (DK) | 1 | 32224A-1 Property No.: 12  
 Table(T): TEST/M,P,H,E,T,Z,C,A,O,D,N,1,2,3,B,U,S Rec: 1/10/467  
 Item: 12/32/33 Name: GAS\_RATE Type: Numeric Len: 8/197/203 Dec: 0

GAS RATE	WTR RATE	WHT	M FWHP-	M FBHP-	M SIWHP	M SIBHP	C FWHP-	C FBHP-
#####	#####	###	###Psi###	###Psi###	###Psi###	###Psi###	#####	#####
<	0		0.0		1977.0	2329.0		>
<	0		446.0		861.0	1002.0		>
<	0		354.0		609.0	706.0		>
<	0		239.0		666.0	773.0		>
<	0		187.0		793.0	922.0		>
<	0		293.0		733.0	852.0		>
<	0		281.0		849.0	988.0		>
<	0		335.0		1001.0	1168.0		>
<	0		299.0		965.0	1125.0		>
<					1406.0			>

F1=Help F3=PrvPro F5=PrvTbl F7=Calcu F9=Utils Alt+TableLtr=Change Table  
 F2=Jump F4=NxtPro F6=NxtTbl F8=Print F10=Exit Shift+<- ->=Fast Tbl R & L

**FLOWING AND STATIC BHP  
CULLENDER AND SMITH METHOD**

VERSION 1.0 3/13/94

GAS GRAVITY	0.7
COND. OR MISC. (C/M)	C
%N2	0.3
%CO2	0.86
%H2S	0
DIAMETER (IN)	1.25
DEPTH (FT)	5187
SURFACE TEMPERATURE (DEG F)	60
BOTTOMHOLE TEMPERATURE (DEG F)	150
FLOWRATE (MCFPD)	0
SURFACE PRESSURE (PSIA)	873
BOTTOMHOLE PRESSURE (PSIA)	1004.9

HELMS FEDERAL #1 MESAVERDE - (ORIGINAL)

**FLOWING AND STATIC BHP  
CULLENDER AND SMITH METHOD**

VERSION 1.0 3/13/94

GAS GRAVITY	0.7
COND. OR MISC. (C/M)	C
%N2	0.3
%CO2	0.86
%H2S	0
DIAMETER (IN)	1.25
DEPTH (FT)	5187
SURFACE TEMPERATURE (DEG F)	60
BOTTOMHOLE TEMPERATURE (DEG F)	150
FLOWRATE (MCFPD)	0
SURFACE PRESSURE (PSIA)	550
BOTTOMHOLE PRESSURE (PSIA)	628.2

HELMS FEDERAL #1 MESAVERDE - (CURRENT)

Organize Data ScreenGraph Economics Report Plot Utility Qui:  
 Browsing: HELMS FEDERAL (MV) | 1 | 32224B-1 Property No.: 13  
 Table(T): TEST/M,P,H,E,T,Z,C,A,O,D,N,1,2,3,B,U,S Rec: 1/12/467  
 Item: 12/32/33 Name: GAS\_RATE Type: Numeric Len: 8/197/203 Dec: 0

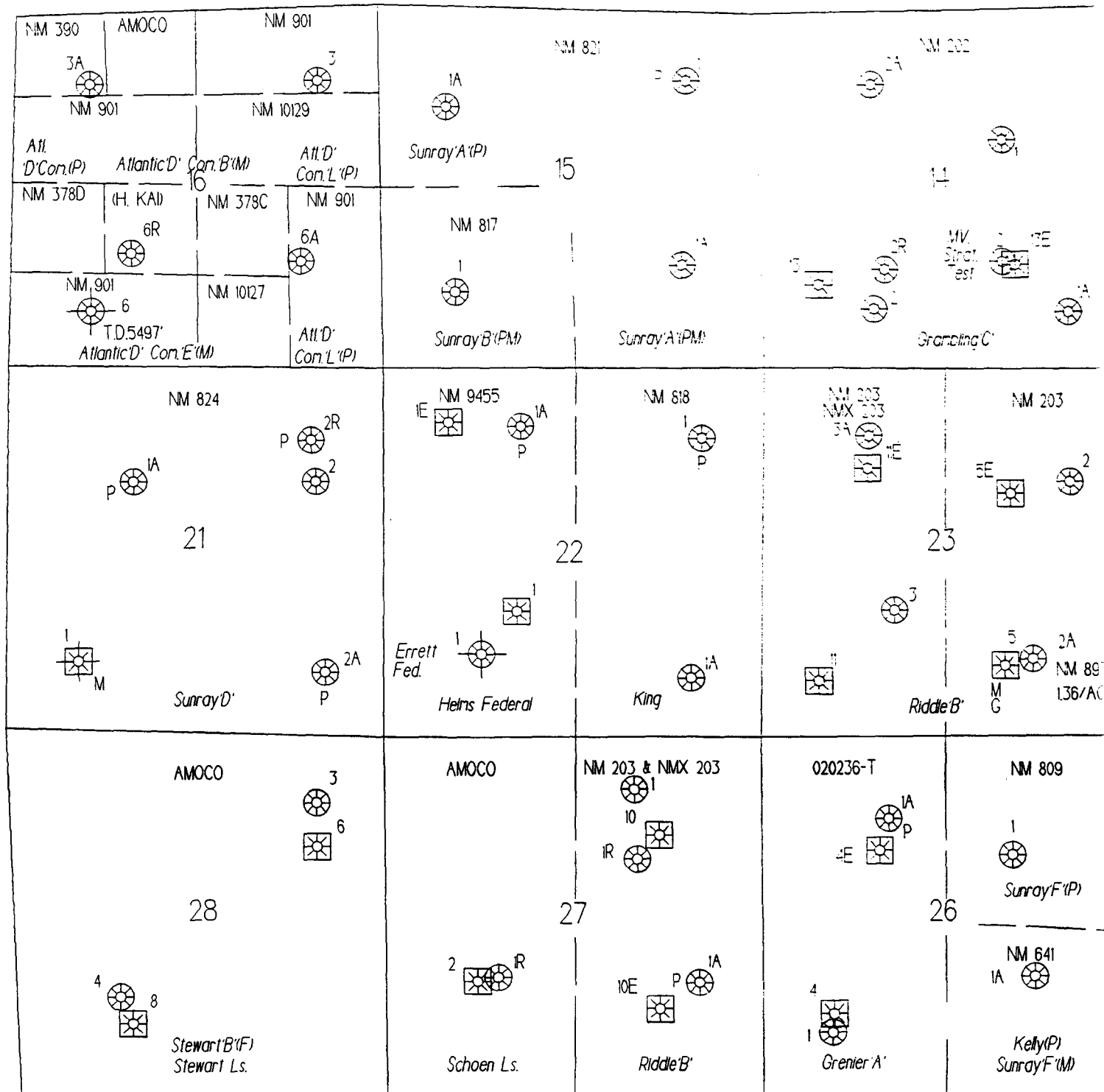
GAS RATE	WTR RATE	WHT	M FWHP-	M FBHP-	M SIWHP	M SIBHP	C FWHP-	C FBHP-
			Psi	Psi	Psi	Psi		
<	0		0.0		873.0	976.0		>
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<	0		242.0		485.0	539.0		>
<	0		197.0		464.0	515.0		>
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<	0		373.0		562.0	625.0		>
<					550.0			>

F1=Help F3=PrvPro F5=PrvTbl F7=Calcu F9=Utils Alt+TableLtr=Change Table  
 F2=Jump F4=NxtPro F6=NxtTbl F8=Print F10=Exit Shift+<- ->=Fast Tbl R & L

# HELMS FEDERAL #1

## SECTION 22 T30N R10W

### BLANCO MESAVERDE/BASIN DAKOTA



FARMINGTON 1997 MONTHLY PRODUCTION FOR 32224B  
 HELMS FEDERAL 1  
 BLANCO MESAVERDE (PRORATED GAS FIELD MESAVERDE ZONE

PHS030M1

		DAYS =====		OIL =====		=====		GAS =====						
MO	T S	ON	PC	PROD	GRV	PC	PROD	ON	BTU	PRESS	WATER	PROD	C	
1	2 F	31	02	19		01	641	31	1207	15.025				
2	2 F	28	02	8		01	816	28	1207	15.025				
3														
4														
5														
6														
7														
8														
9														
10														
11														
12														

PF6 - RETURNS TO ANNUAL DISPLAY

PF3 - TRANSFER TO UPDATE

PF10 - HELP INFORMATION

PF9 - DISPLAY MONTHLY INJECTION

00/00/00 00:00:00:0

PRS 04/03/97

B MY JOB

NUM LU #19

FARMINGTON 1997 MONTHLY PRODUCTION FOR 32224A  
HELMS FEDERAL 1  
BASIN DAKOTA (PRORATED GAS) FIELD DAKOTA ZONE

PHS030M1

MO	T	S	DAYS	ON	PC	OIL	PROD	GRV	PC	PROD	ON	GAS	BTU	PRESS	WATER	PROD	C
1	2	F							01	1180	31	1039	15.025				
2	2	F							01	1494	28	1039	15.025				
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	

PF6 - RETURNS TO ANNUAL DISPLAY

PF3 - TRANSFER TO UPDATE

PF10 - HELP INFORMATION

PF9 - DISPLAY MONTHLY INJECTION

00/00/00 00:00:00:0

PRS 04/03/97

B MY JOB

NUM LU #19

FARMINGTON 1997 MONTHLY PRODUCTION FOR 32224A  
HELMS FEDERAL 1  
BASIN DAKOTA (PRORATED GAS) FIELD DAKOTA ZONE

PHS030M1

MO	T	S	DAYS	ON	PC	OIL	PROD	GRV	PC	PROD	ON	GAS	BTU	PRESS	WATER	PROD	C
1	2	F							01	1180	31	1039	15.025				
2	2	F							01	1494	28	1039	15.025				
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	

PF6 - RETURNS TO ANNUAL DISPLAY

PF3 - TRANSFER TO UPDATE

PF10 - HELP INFORMATION

PF9 - DISPLAY MONTHLY INJECTION

00/00/00 00:00:00:0

PRS 04/03/97

B MY JOB

NUM LU #19

0HC-1561



# United States Department of the Interior

## BUREAU OF LAND MANAGEMENT

Farmington District Office  
1235 La Plata Highway  
Farmington, New Mexico 87401

IN REPLY REFER TO:  
NM-0555078 (WF)  
3162.7-3 (07327)

November 14, 1996

Peggy Bradfield  
Regulatory/Compliance Administrator  
Meridian Oil  
P.O. Box 4289  
Farmington, NM 87499-4289

RE: Federal Lease NM-0555078  
Downhole Commingling Application  
Blanco Mesaverde and Basin Dakota Formations  
No. 1 Helms Federal  
1800' FSL & 1695' FWL  
Section 22, T. 30 N., R. 10 W.  
San Juan County, New Mexico

Dear Ms. Bradfield:

The Farmington District Office (FDO) of the Bureau of Land Management (BLM) has received your letter October 11, 1996, requesting approval for downhole commingling of the Blanco Mesaverde and Basin Dakota formations in the above referenced well.

After review, we hereby approve your application for downhole commingling. Please submit the allocation factors for this well once you have made your determination.

If you have further questions regarding this matter, please contact Brian W. Davis at (505) 599-6367 or (505) 599-8900.

Sincerely,

**/S/ Duane W. Spencer**

Duane W. Spencer  
Team Leader, Petroleum Management

bcc:

NMOCD, Santa Fe ✓  
Well File (No. 1 Helms Federal, 1800' FSL & 1695' FWL, Sec 22, T30N, R10W)  
DOMR  
Suspense (Brian)  
AIRS

07237:BWDavis:11/13/96:x6367:burlingtonHelmsFederal11.1tr