

**MERIDIAN OIL**

RELEASE 02-20-93

(DHC ATTACHED)

OIL CONSERVATION DIVISION  
RECEIVED

'93 FEB 10 AM 10 03

January 26, 1993

New Mexico Oil Conservation Division  
Attn: Mr. William J. LeMay  
P.O. Box 2088  
310 Old Santa Fe Trail  
Santa Fe, New Mexico 87501

RE: **Surface Casing Requirement Exemption**  
**South Blanco Tocito Extension / Basin Dakota**  
Reuter #2  
NW/SW/4, Section 34, T27N, R06W  
Rio Arriba County, New Mexico

Dear Mr. LeMay

Meridian Oil Inc. requests an exemption of Rule 4 (a) of the South Blanco-Tocito pool rules requiring a minimum of 450' of surface casing for the proposed Tocito completion. Meridian intends to complete the Tocito Sandstone of the Gallup interval in the referenced well and commingle production with the existing Dakota. Administrative applications for commingling and non-standard location authorization are being made separately.

The referenced well is within one mile of the existing boundaries of the South Blanco-Tocito pool. The completion and resulting production will be considered a pool extension.

The referenced well is currently completed in the Dakota only and has 8 5/8" surface casing set at 292' KB. This string is cemented to surface and was adequately pressure tested prior to drill out. The existing surface casing will be adequate to protect all potable water-bearing strata encountered under proposed producing conditions of the commingled streams.

Production and reserve estimates, based on offset analogy, would not economically support drilling a new wellbore. Meridian has no other available wellbores for plug back on this leasehold to develop these reserves. Utilization of the referenced wellbore is considered the only viable alternative. Exemption of the surface casing requirements for the proposed commingling project will allow Meridian to develop its Tocito reserves while providing prevention of wasted resources and protection of correlative rights.

Sincerely,



Arden L. Walker, Jr.  
Regional Production Engineer

DTB:tg

cc: Frank T. Chavez - NMOCD/Aztec

RELEASE 2-20-93

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January 26, 1993

**MERIDIAN OIL**

New Mexico Oil Conservation Division  
Attn: Mr. William J. LeMay  
P.O. Box 2088  
310 Old Santa Fe Trail  
Santa Fe, New Mexico 87501

**RE: Downhole Commingling Request**  
**South Blanco Tocito Extension / Basin Dakota**  
Reuter #2  
NW/SW/4, Section 34, T27N, R06W  
Rio Arriba County, New Mexico

Dear Mr. LeMay

Meridian Oil Inc. requests administrative approval as per Rule 303 C to downhole commingle production from a South Blanco Tocito extension and the Basin Dakota pool in the referenced well. Meridian intends to complete the Tocito interval of the Gallup and commingle production with the existing Dakota. The ownership of the zones to be commingled is common to each assigned spacing unit of the respective pools. The BLM and operators of the offsetting leases as indicated on the attached plats will receive notification of this application.

The subject well is a 1962 Basin Dakota fracture stimulated completion. To date the well has produced 3,394.2 MMCF and 24.8 MBO. The well is currently productive and tested 224 MCFD in May 1992. Shut-in casing and tubing pressures on January 22, 1993 were 509 and 296 psi respectively after an extended nine day shut-in. A 72-hour bomb set at 7420', pulled on the last day of the shut-in, indicated a bottom-hole pressure of 609 psi. There is no flow at the bradenhead or apparent evidence of downhole mechanical failure. The Dakota interval is not a candidate for plug back.

The Tocito member of the Gallup formation is productive in this area as proven by completions one mile due south and due west of the referenced well. Similarity in open-hole log response indicates comparable reservoir potential to these offsets. Production and reserve estimates, based on offset analogy, would not economically support drilling a new wellbore. Meridian has no other available wellbores for plug back on this leasehold to develop these reserves. The mechanical configuration of the referenced well will not allow for an efficient dual completion of either formation. The combined production streams from the Tocito and Dakota is likely to extend the economic life of both formations. Utilization of the referenced wellbore is the only viable alternative to recover these Tocito reserves.

Meridian intends to complete the Tocito sandstone member of the Gallup formation as indicated on the attached log sections. The 12' of Tocito pay will be fracture stimulated with 49.6M gal 70Q CO2 foamed 30# linear gel and 70.0M# 20/40 mesh sand in a single stage. A bridge plug will be set to isolate the existing Dakota perforations during completion operations. The attached log section indicates the existing and proposed perforations. Upon completion, the existing Dakota and added Tocito pay will be produced through a single 2 3/8" tubing string after the bridge plug is drilled out.

R-1191

NMOCD  
Reuter #2  
Downhole Commingle Request  
Page Two

The estimated Dakota pressure at 6770' (common datum: mid-point of the Tocito perfs) using a static gas gradient of +/- 0.012 psi/ft is 601 psi. The maximum recorded surface shut-in pressure since 1991 of the two offset Tocito wells, referenced above (SW/4, Sec. 33, T27N, R06W and NW/4, Sec. 03, T26N, R06W), is 800 psi. Assuming equivalent Tocito reservoir pressure in the referenced well and a static gas gradient of 0.021 psi/ft yields an estimated Tocito bottom-hole pressure of 944 psi at 6770'. Given the assumptions listed, the Dakota bottom-hole pressure adjusted to a common datum (6770') is within 50% of the anticipated Tocito pressure.

Neither zone in the area produces any significant amount of water. The commingling of oil and gas production from these zones will not have any detrimental effect to the ultimate recovery from either reservoir. The fluids from each zone are compatible and no precipitates will be formed to cause formation damage. These conclusions are supported by the authorized commingling (DHC R-6570) and subsequent production of the Tocito and Dakota intervals in the Jicarilla 152 W #3 in the NW/4, Sec. 07, T26N, R05W.

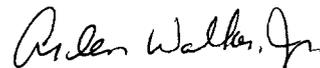
After completion, Meridian will consult with the District Supervisor of the Aztec District Office of the Division to determine a production allocation formula for each of the commingled zones. This allocation will be based on production testing with the Tocito isolated and the Tocito and Dakota combined.

Approval of this commingling application will allow for the prevention of wasted resources and the protection of correlative rights. This application includes:

- Resume of the well's completion history;
- Wellbore diagram;
- Dakota production history with projection of future volumes;
- Dakota bottom-hole pressure and static gradient survey;
- Log section indicating existing and proposed perforations;
- Copies of letters notifying the BLM and offset operators of this application; and
- Offset operator plats in the South Blanco Tocito and Basin Dakota pools.

Administrative approval is concurrently being requested in a separate application to grant non-standard location authorization for the unorthodox South Blanco Tocito location of the referenced well.

Sincerely,



Arden L. Walker, Jr.  
Regional Production Engineer

DTB:tg  
rutr2com.doc

cc: Frank Chavez - NMOCD/Aztec

**PERTINENT DATA SHEET**

<b>General Information:</b>			
DP Number :	50582A	Spud Date :	05/05/62
Well Name :	Reuter #2	Comp Date :	06/01/62
Formation :	Dakota	Total Depth :	7540'
Field :	Basin Dakota	PBTD :	7470'
Location :	NW/SW/4 Sec. 34, T27N, R06W	GWl :	100.00% All
Survey :	1450' FSL, 790' FWL	NRI :	75.00% All
County, St :	Rio Arriba County, NM	Foreman :	Lary Byars (9865)

<b>Casing Program:</b>						
Hole	Csng	Weight/Grade/Thread	Depths	TOC	Cement	Tools
13 3/4"	9 5/8"	36.0# J-55 8rd	0'- 292'	Surf	306 ft^3	None
8 3/4"	4 1/2"	11.6/10.5# J-55 8rd	0'-5455'	2650' TS	315 ft^3	DV @ 3184'
7 7/8"	4 1/2"	10.5# J-55 8rd	5455'-7539'	4450' Clc	412 ft^3	DV @ 5435'
7 7/8"	4 1/2"	11.6# J-55 8rd	6442'-7539'	7000' Clc	170 ft^3	Float @ 7486'
Additional Information: TOC calc assumed 75% eff.						

<b>Tubing Program:</b>						
String	Tbng	Weight/Grade/Thread	Depths	SN @	Joints / Tools	
DK	2 3/8"	4.7# J-55 8rd	0'-7453'	7419'	254 jts / B&R SN	
Additional Information: Tbg bull plugged on bottom, perf'd 7420'-23'.						

**Wellhead:**  
9 5/8" X 11" 3M OCT C-22 casinghead, 11" 3M x 7 1/16" 3M Cameron tubinghead, 3M tree

<b>Formation Tops:</b>						
Elevations: 6498'GL / 6508'KB						
Ojo Alamo	: 2324'	Cliff House	: 4690'	Tocito	: 6764'	
Kirtland	: 2470'	Menefee	: 4780'	Greenhorn	: 7148'	
Fruitland	: 2855'	Point Lookout	: 5255'	Graneros	: 7202'	
Pictured Cliffs	: 3001'	Mancos	: 5389'	Dakota	: 7327'	
Lewis	: 3070'	Gallup	: 6169'	Morrison	: 7507'	

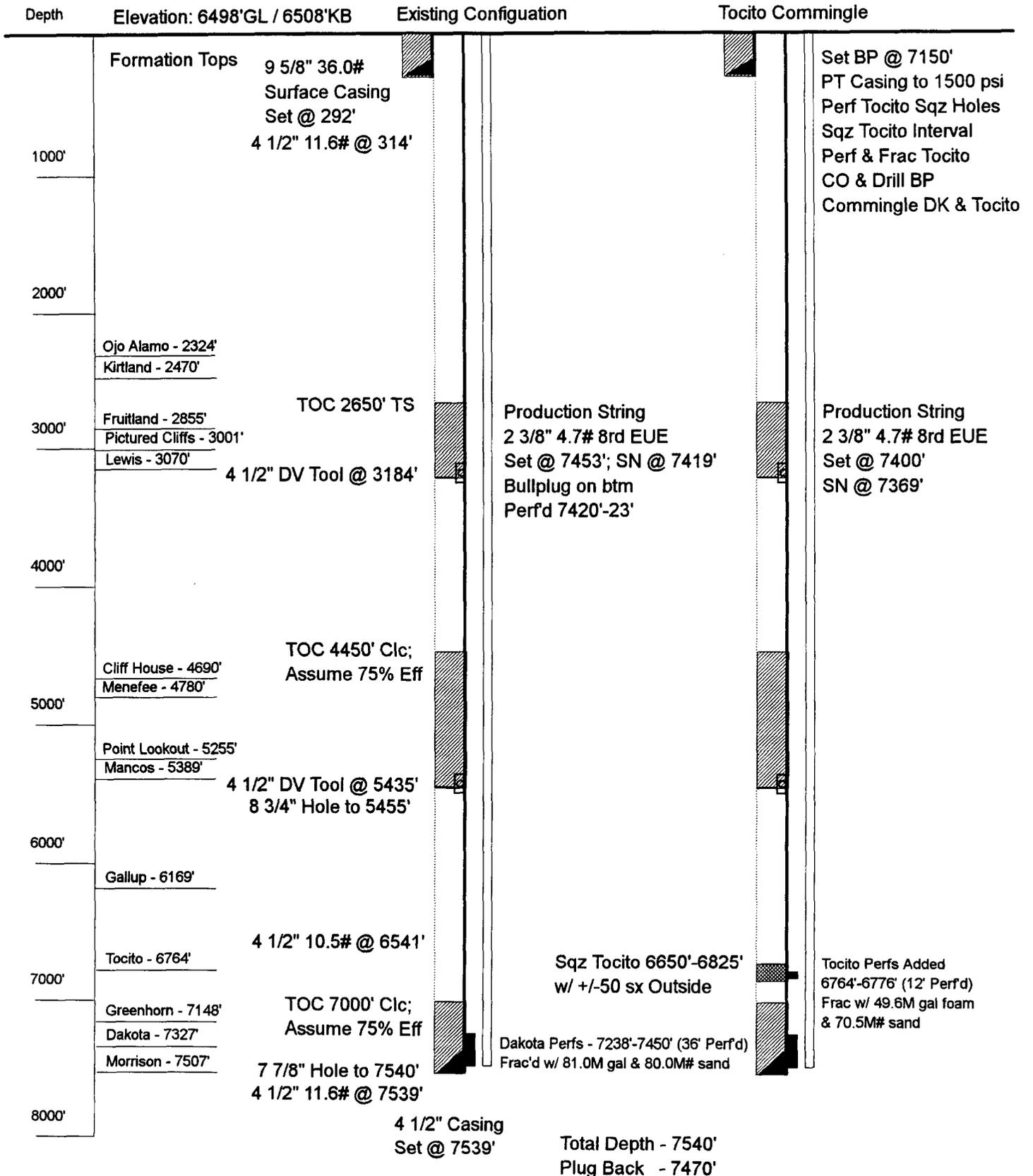
**Logging Program:**  
IEL 286'-7534'; ML/GR 6100'-7536'; Temp Survey

**Stimulation History:**  
Perf'd Dakota in 2% HCl acid from 7238'-44' (2 spf), 7258'-64' (2 spf), 7368'-80' (1 spf), 7418'-24' (2 spf), 7444'-50' (2 spf); 36' total, 60 - 0.52" holes. Breakdown perfs from 7418'-50' @ 2800#, pump-in @ 33 bpm & 3900# prior to perfwing uphole. Frac'd with 81.0M gal 2% HCl w/ 2.5#/mgal FR-2 friction reducer and 80.0M# 40/60 sand in 3/4# to 1 1/2# stages. Ball-off w/ 4 sets of 12 balls, good ball action. Flush with 7.2M gal water. BDP - 2800#, MTP - 3900#, ATR - 29.2 bpm, ISIP - 1800#.

**Workover History:**  
None

<b>Production History:</b>			
First Delivery	: 10/12/62	Gas Transporter	: EPNG
Initial Potential	: 6464 MCFD (06/62)	Current Status	: Flowing 10/92
Current Deliverability:	224 MCFD (05/92)	Most Recent Wellhead Pressures (05/92):	
Cumulative Production (10/92):		Casing	: 348 psi flw'g / 478 psi shut-in
Gas - 3394.2 MMCF		Tubing	: 157 psi flw'g / 238 psi shut-in
Oil - 24.8 MBO		Brdnhd	: 0 psi / No Flow (01/93)

**Reuter #2**  
**Basin Dakota**  
**NW/SW/4 Sec.34, T27N, R06W**  
**Wellbore Schematic**



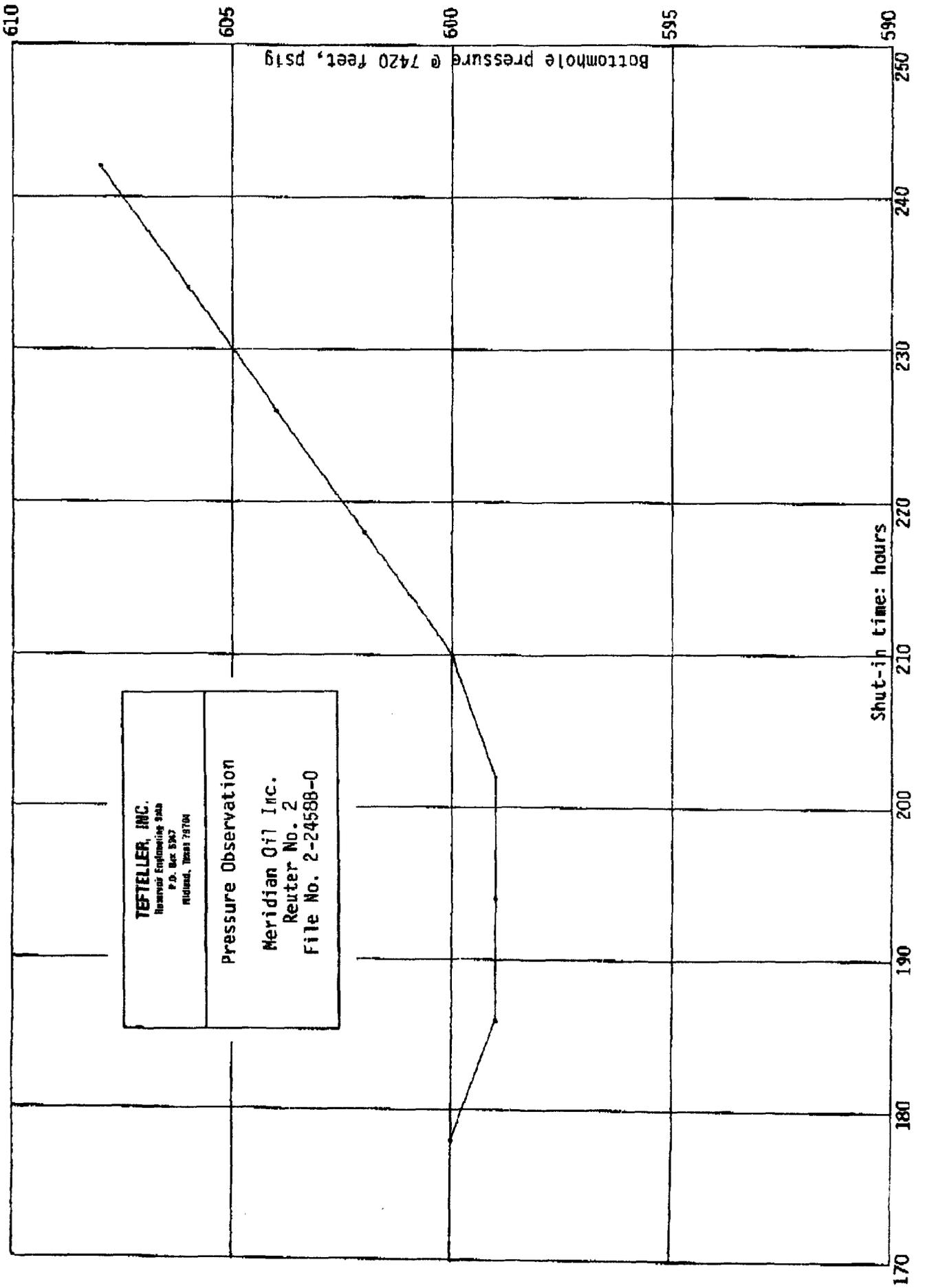


**TEFTELLER, INC.**

**RESERVOIR ENGINEERING DATA AND PRODUCTIVITY ENHANCEMENT SERVICES  
MIDLAND, TEXAS • FARMINGTON, NEW MEXICO • GRAND JUNCTION, COLORADO**

**CHRONOLOGICAL PRESSURE AND PRODUCTION DATA**

1993 DATE	STATUS OF WELL	TIME	ELAPSED TIME		WELLHEAD PRESSURE		BHP @ 7420' PSIG
			HRS	MIN	TBG	CSG	
1-19	Arrived on location, well shut-in	10:00					
	Gradient traverse Instrument @ 7420'	13:00	170	00			600
		21:00	178	00			600
1-20		05:00	186	00			599
		13:00	194	00			599
		21:00	202	00			599
1-21		05:00	210	00			600
		13:00	218	00			602
		21:00	226	00			604
1-22		05:00	234	00			606
	Instrument off bottom	13:00	242	00	296	509	608



**TEFTELLER, INC.**  
 Houston Engineering Staff  
 P.O. Box 5392  
 Houston, Texas 77204

Pressure Observation

Meridian Oil Inc.  
 Reuter No. 2  
 File No. 2-24588-0

Bottomhole pressure @ 7420 feet, psig

Shut-in time: hours

610

605

600

595

590

250

240

230

220

210

200

190

180

170

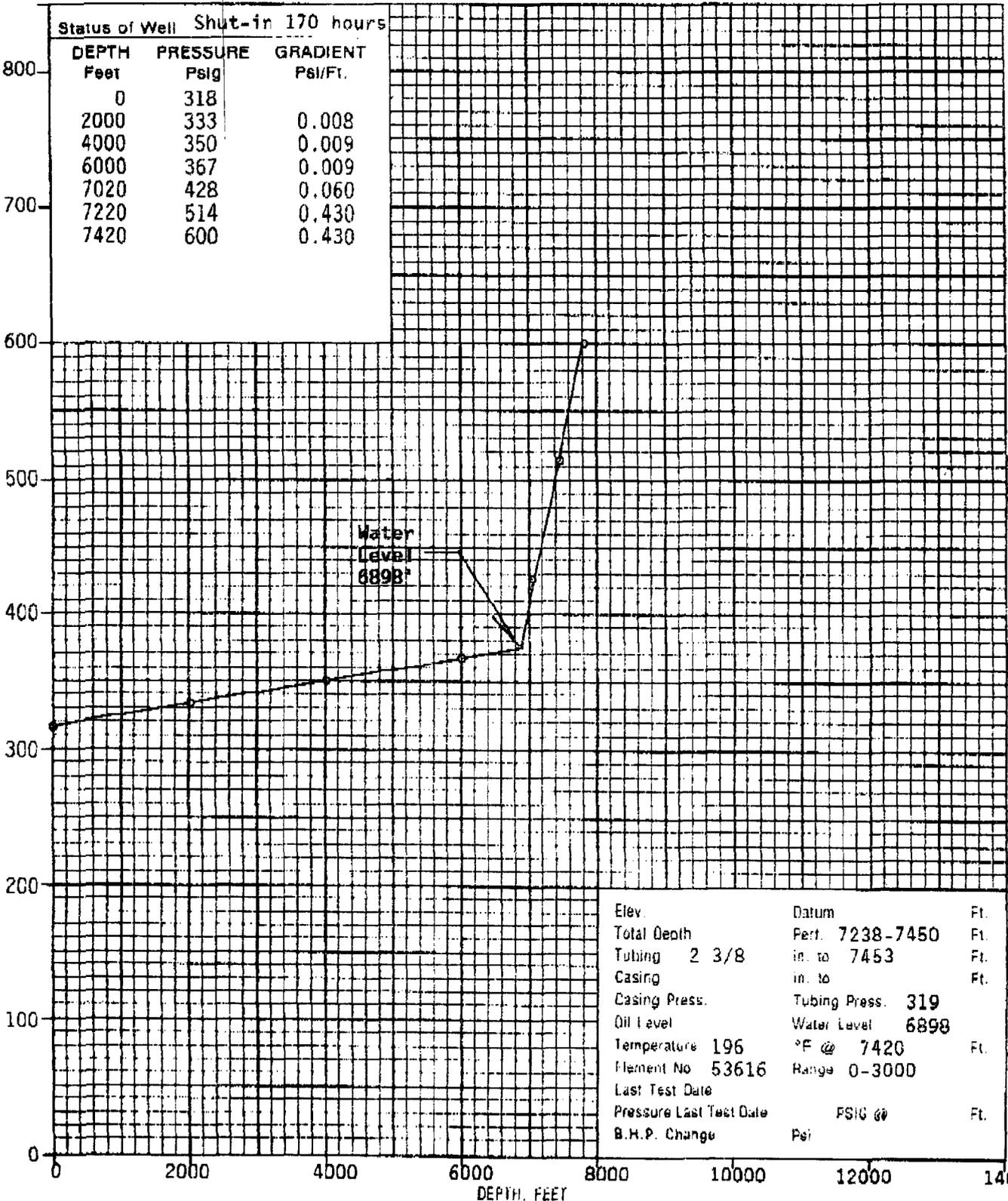


Company MERIDIAN OIL INC. Lease REUTER Well No. 2  
Field BASIN DAKOTA County RIO ARRIBA State NEW MEXICO  
Formation DAKOTA Test Date JANUARY 19, 1993

Status of Well Shut-in 170 hours

DEPTH Feet	PRESSURE Psig	GRADIENT Psi/Ft.
0	318	
2000	333	0.008
4000	350	0.009
6000	367	0.009
7020	428	0.060
7220	514	0.430
7420	600	0.430

PRESSURE POUNDS PER SQUARE INCH GAUGE



Elev.	Datum	Ft.
Total Depth	Pert. 7238-7450	Ft.
Tubing 2 3/8	in. to 7453	Ft.
Casing	in. to	Ft.
Casing Press.	Tubing Press. 319	
Oil Level	Water Level 6898	
Temperature 196	°F @ 7420	Ft.
Element No. 53616	Range 0-3000	
Last Test Date		
Pressure Last Test Date	PSIG @	Ft.
B.H.P. Change	Psi	



# MERIDIAN OIL

January 26, 1993

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

RE: **Downhole Commingling Request**  
Reuter #2  
NW/SW/4, Section 34, T27N, R06W  
Rio Arriba County, New Mexico

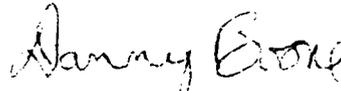
Gentlemen:

Meridian Oil Inc. is applying to the New Mexico Oil Conservation Division for administrative approval as per Rule 303 C to downhole commingle production from the South Blanco Tocito and Basin Dakota pools in the referenced well.

The purpose of this letter is to notify you of such action. If you have no objections to the proposed commingling order, please sign the attached copy of this letter and return it to this office.

Your prompt attention to this matter would be appreciated.

Sincerely,



Danny T. Boone  
Production Engineer

The above downhole commingling request is hereby approved:

\_\_\_\_\_  
Date: \_\_\_\_\_

# MERIDIAN OIL

January 26, 1993

Bureau of Land Management  
1235 La Plata Highway  
Farmington, New Mexico 87401

RE: **Downhole Commingling Request**  
Reuter #2  
NW/SW/4, Section 34, T27N, R06W  
Rio Arriba County, New Mexico

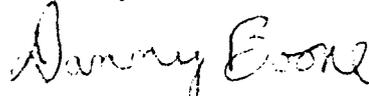
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Your prompt attention to this matter would be appreciated.

Sincerely,



Danny T. Boone  
Production Engineer

The above downhole commingling request is hereby approved:

\_\_\_\_\_  
Date: \_\_\_\_\_

# MERIDIAN OIL

January 26, 1993

Caulkins Oil Company  
1600 S. Broadway  
Suite 2100  
Denver, Colorado 80202

RE: **Downhole Commingling Request**  
Reuter #2  
NW/SW/4, Section 34, T27N, R06W  
Rio Arriba County, New Mexico

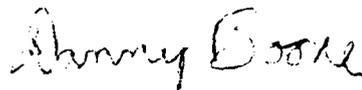
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Your prompt attention to this matter would be appreciated.

Sincerely,



Danny T. Boone  
Production Engineer

The above downhole commingling request is hereby approved:

\_\_\_\_\_  
Date: \_\_\_\_\_

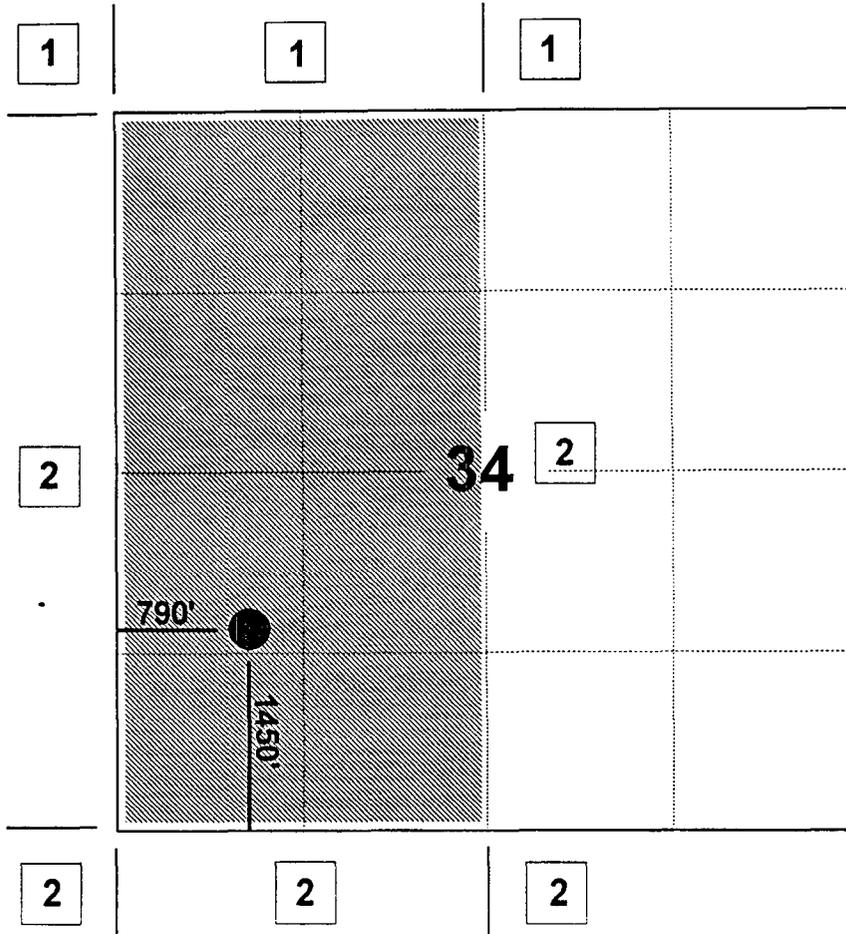
# MERIDIAN OIL INC

OFFSET OPERATOR \ OWNER PLAT

REUTER #2

Dakota \ Tocito Formation Commingle

Township 27 North, Range 06 West



1) Union Oil of California

PO Box 3100, Midland, TX 79702

2) Caulkins Oil Company

1600 S. Broadway, Suite 2100, Denver, CO 80202

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Dakota Formation

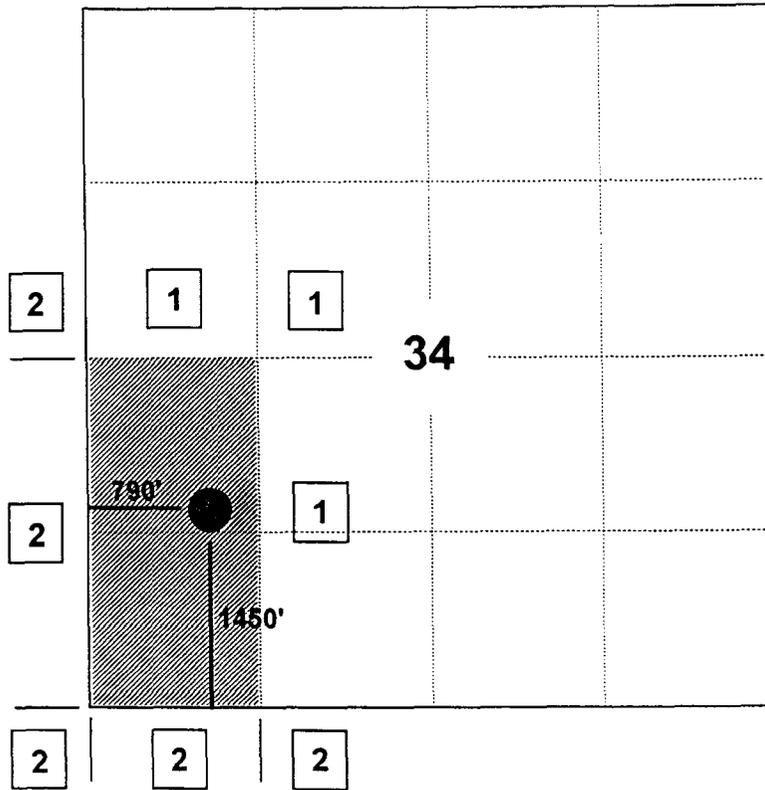
# MERIDIAN OIL INC

## OFFSET OPERATOR PLAT

### REUTER #2

Dakota \ Tocito Formation Commingle

Township 27 North, Range 06 West



1) Meridian Oil Inc

2) Caulkins Oil Company 1600 S. Broadway, Suite 2100, Denver, CO 80202

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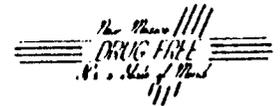
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STATE OF NEW MEXICO  
 ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT  
 OIL CONSERVATION DIVISION

RECEIVED  
 93 FEB 5 AM 9 16 AZTEC DISTRICT OFFICE

1000 RIO BRAZOS ROAD  
 AZTEC, NEW MEXICO 87410  
 (505) 334-6178

BRUCE KING  
 GOVERNOR

ANITA LOCKWOOD  
 CABINET SECRETARY

Date: 2/4/93

Oil Conservation Division  
 P.O. Box 2088  
 Santa Fe, NM 87504-2088

RE: Proposed MC _____	Proposed DHC <u>  X  </u> _____
Proposed NSL _____	Proposed SWD _____
Proposed WFX _____	Proposed PMX _____
Proposed NSP _____	Proposed DD _____

Gentlemen:

I have examined the application received on 2/4/93  
 for the Meridian Renter #2  
 OPERATOR LEASE & WELL NO.

L-34-25N-6W and my recommendations are as follows:  
 UL-S-T-R

Approve both casing execution & DHC

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Yours truly,

J. G.