Ernie Busch

From: Ernie Busch
To: Ben Stone
Subject: MERIDIAN OIL INC SUNRAY D#2A(DHC)
Date: Monday, March 25, 1996 7:37AM
Priority: High

21-30N-10W
RECOMMEND: APPROVAL

FORM C-115- OPERATORS MONTHLY REPORT (CONTINUATION)

OPERATOR: LOUIS DREYFUS NATURAL GAS CORP | OGRID: 025773 | MONTH/YEAR 08/95 | PAGE 6 OF 26

7 POOL NO. AND NAME / PROPERTY NO. AND NAME / WELL NO. AND U-L-S-T-R / API NUMBER	INJECTION			PRODUCTION				DISPOSITION OF OIL, GAS, AND WATER							
	8 CODE 1	9 VOLUME	10 PRESSURE	11 CODE 2	12 BBLS OF OIL/CONDENSATE PRODUCED	13 BBLS OF WATER PRODUCED	14 GAS PRODUCED (MCF)	15 DAYS PRODUCED	16 CODE 3	17 POINT OF DISPOSITION	18 GAS BTU OR OIL API GRAV	19 OIL ON HAND AT BEGINNING OF MONTH	20 VOLUME (BBLS/MCF)	21 TRANSPORTER OGRID	22 CODE 4	23 OIL ON HAND AT END OF MONTH
005950 FEDERAL 6																
6-32 G-06-26N- 7W 30-039-22963	F				64	9	3019	31								
									O	1189610		70				134
									G	1189630	1166		2554	007057		
									G				31		U	
									G				434		V	
									W	1189650			9		O	
005951 FEDERAL 8																
8-22 F-08-26N- 7W 30-039-22933	F				17	39	1970	31								
									O	1189110		154				171
									G	1189130	1236		1722	025244		
									G				31		U	
									G				217		V	
									W	1189150			39		O	
005961 MILES FEDERAL																
001 3-05-26N- 7W 30-039-06759	F				0	20	469	27								
001E N-05-26N- 7W 30-039-22918	F				5	99	3397	31								
002 N-07-26N- 7W 30-039-06533	F				23	1	2595	31								
									O	1191110		76				76
									O	1191210		93				98
									O	1191310		61				84

MERIDIAN OIL
A Subsidiary of BURLINGTON RESOURCES

March 4, 1996

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

RECEIVED
MAR 1 8 1996
OIL CON. DIV.
DIST. 3

RE: Sunray D #2A
SE/4, Section 21, T30N, R10W
San Juan County, New Mexico
Downhole Commingling Request

Dear Mr. LeMay:

Meridian Oil Inc. is applying for administrative approval to downhole commingle the above referenced well in the Blanco Mesaverde and Aztec Pictured Cliffs intervals during the proposed workover. The zones to be commingled have common ownership. All offset operators shown on the attached plat and the Bureau of Land Management have received notification of this downhole commingling application.

This well has produced since 1981 as a dual well from the Mesaverde and Pictured Cliffs. The well is presently not a good producer due to poor producing efficiency. It had a producing capacity in 1995 of 57 mcf/d and 20 mcf/d, respectively. The commingling of the subject well will result in better producing efficiency for both intervals. A possible future artificial lift system, such as a plunger will be more efficient with the intervals commingled. Granting this application will be in the best interest of conservation, the prevention of waste, and the protection of correlative rights.

The proposed project is to fracture stimulate bypassed pay in the existing Mesaverde completion. Commingling should enhance this well's producing life and provide an economical means of recovering reserves from both zones. We plan to commingle this well during the proposed workover by pulling the Pictured Cliffs tubing and the Mesaverde tubing and packer seal assembly. The permanent packer will be extracted and a single string of tubing will be landed in the lower producing interval.

The reservoir characteristics of each of the subject zones are such that underground waste would not be caused by the proposed downhole commingling. The compatibility analysis of fluids from the Pictured Cliffs and Mesaverde indicate that the fluids from each zone are compatible and no precipitates will be formed to cause damage to either reservoir. (See attachment.) Shut in pressures for the two formations are within a 50% variance. (Surface pressures for the Mesaverde and Pictured Cliffs are 301 psi and 261 psi, respectively.)

P.O. Box 4289, Farmington, New Mexico 87499-4289, Telephone 505-326-9700, Fax 505-326-9833
3535 East 30th St., 87402-8891

The allocation of the commingled production will be calculated using production history and flow tests obtained from the Pictured Cliffs and Mesaverde during workover operations. Meridian Oil Inc., will consult with the District Supervisor of the Aztec District Office of the Division for approval of the allocation.

Approval of this commingling application will prevent resources from being wasted and protect correlative rights. Attached with this letter are plats showing ownership of the offsetting leases for both the Mesaverde and Pictured Cliffs, a copy of the letter sent to the Bureau of Land Management, fluid compatibility analysis, a wellbore diagram, pertinent data sheet, and a workover procedure.

Sincerely,

Mary Ellen Lutey

Mary Ellen Lutey
Production Engineer

MEL:mel

Attachments

cc: Frank T. Chavez - NMOCD/Aztec
Peggy Bradfield - MOI Regulatory
Bureau of Land Management
Well File

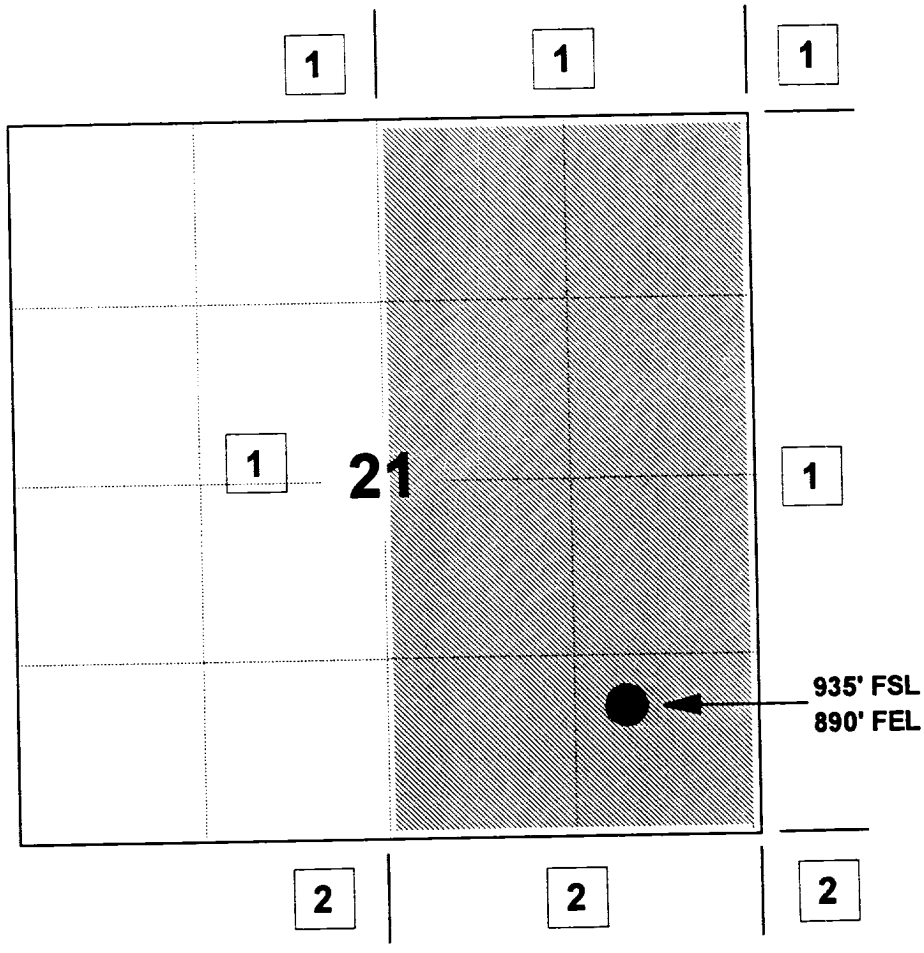
MERIDIAN OIL INC

SUNRAY D #2A

OFFSET OPERATOR \ OWNER PLAT

Mesaverde / Pictured Cliffs Formations Commingle Well

Township 30 North, Range 10 West



1) Meridian Oil Inc

2) Amoco Production Company — PO Box 800, Denver, CO 80201

Mesaverde Formation

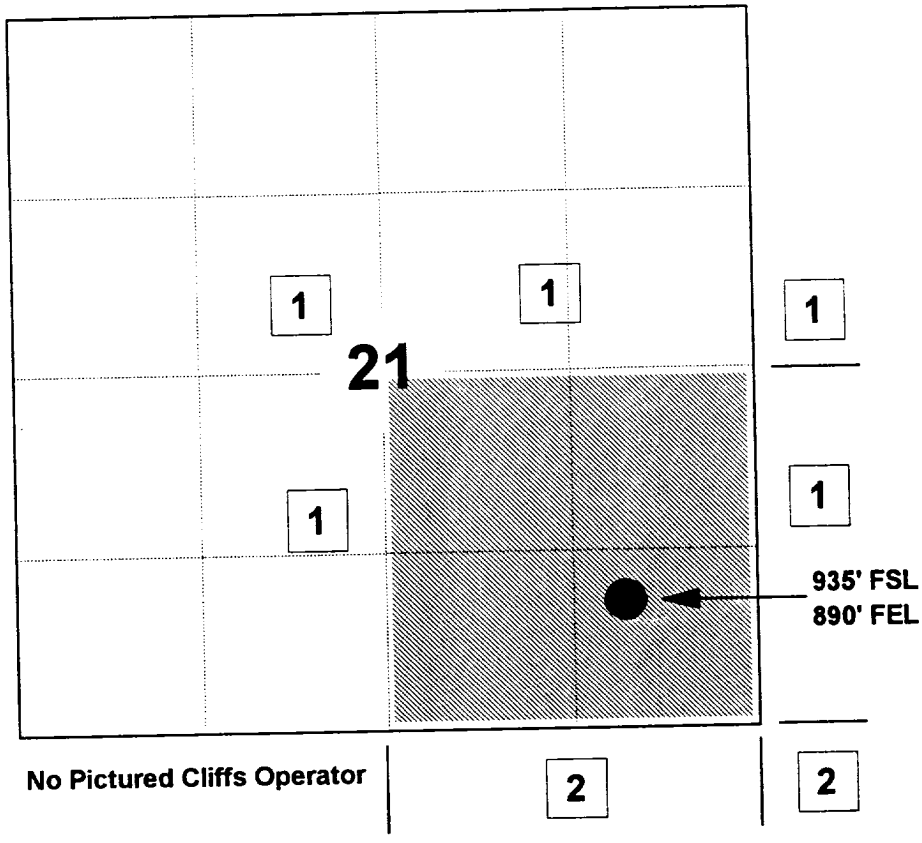
MERIDIAN OIL INC

SUNRAY D #2A

OFFSET OPERATOR \ OWNER PLAT

Mesaverde / Pictured Cliffs Formations Commingle Well

Township 30 North, Range 10 West



1) Meridian Oil Inc

2) Amoco Production Company — PO Box 800, Denver, CO 80201

Pictured Cliffs Formation

March 4, 1996

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

RE: Sunray D #2A
SE/4, Section 21, T30N, R10W
San Juan County, New Mexico
Downhole Commingling Request

Gentlemen:

Meridian Oil Inc. is in the process of applying for a downhole commingling order from the New Mexico Oil Conservation Division (NMOCD) for the referenced well located in San Juan County, New Mexico. The approved application will commingle the Mesaverde and the Pictured Cliffs fields.

The purpose of this letter is to notify you of Meridian's application. If you have no objections to the NMOCD issuing a commingling order, we would appreciate your signing this letter and returning the original to Mr. LeMay at the following address with a copy to this office:

New Mexico Oil Conservation Division
Mr. William LeMay
P.O. Box 2088
Santa Fe, New Mexico 87501

Your prompt attention to this matter would be appreciated.

Sincerely,

Mary Ellen Lutey

Mary Ellen Lutey
Production Engineer

MEL:mel

The undersigned hereby waives objection to the referenced Downhole Commingle Request.

Company/Owner:_____

Title:_____

Date:_____

Meridian oil inc.
P.O. Box 4289
Farmington, NM 87499

Subject: Sun Ray comingled water tests

Four samples were received from the Sun Ray #D-1-A and D-2-A for comingled water tests to ensure no incompatabilities would exist between the water and oil from the producing zones from the Sun Ray lease.

The following samples were received,
Mesa Verde oil & water From the D-1-A (only enough water API tests)
Pictured Cliffs oil & water from the D-1-A
Pictured Cliffs oil from the D-2-A (no water)
Mesa Verde oil & water from the D-2-A

API water analysis were performed on the individual waters then mixed equally and another API water test was done on the comingled sample. Nothing on the comingled test appeared out of the ordinary. Please see the attached reports.

API oil gravities were performed on the individual oils, then a combined gravity and compatability tests were done.

D-1-A MV oil = 40*
D-2-A MV oil = 48.8*
D-2-A PC oil = 55.2*
A combined gravity of 47.4* was noted

The oils were combined and mixed at high speed then allowed to sit static to see if any incompatabilities could be noticed. The oils mixed well with no visable precipatations or emulsions.

The oils were also combined with formation waters and mixed at high speed to see if any emulsions could be generated. These results showed the oils breaking out clean with no interfaceing or emulsions.

CONCLUSION

Based on the tests performed on the oil & waters in question, no precipatants, emulsionsor other undesireable reactions occoured that could otherwise have damaging effects from the comingling of these fluids.

BJ SERVICES

API W A T E R A N A L Y S I S

Company: MERIDIAN OIL INC.
Field:
Well: SUNRAY D-2-A
Depth:
Formation: PC
State: NM
County: SAN JUAN

W.C.N.A. Sample No.:
Legal Description:
Lease or Unit:
Water.B/D:
Sampling Point:
Sampled By: MOI
Date Sampled: 03/11/96

Type of Water(Produced,Supply, ect.): PROD.

PROPERTIES

pH: 5.56
Specific Gravity: 1.004
Resistivity (ohm-meter): 10.00
Tempature: 78F

Iron, Fe(total): 3
Sulfide as H2S: 0
Total Hardness:
(see below)

D I S S O L V E D SOLIDS

CATIONS	mg/l		me/l
Sodium, Na:	184	:	8
Calcium, Ca:	12	:	1
Magnesium, Mg:	2	:	0
Barium, Ba:	N/A	:	N/A
Potassium, K:	16	:	0

ANIONS	mg/l		me/l
N: .500 Chloride, Cl:	177	:	5
Sulfate, SO4:	80	:	2
Carbonate, CO3:		:	
Bicarbonate, HCO3:	122	:	2

Total Dissolved Solids (calculated): 593
Total Hardness: 40

Sample(ml): 10.0 ml of EDTA: .30
Sample(ml): 10.0 ml of EDTA: .10

Sample(ml): 10.0 ml of AgNO3: .10

Sample(ml): 1.0 ml of H2SO4:
Sample(ml): 25.0 ml of H2SO4: .50

Sample(ml): 10.0 ml of EDTA: .40

REMARKS AND RECOMMENDATIONS:

BJ SERVICES

API W A T E R A N A L Y S I S

Company: MERIDIAN OIL INC.
Field:
Well: SUNRAY D-1-A
Depth:
Formation: PC
State: NM
County: SAN JUAN

W.C.N.A. Sample No.:
Legal Description:
Lease or Unit:
Water.B/D:
Sampling Point:
Sampled By: MOI
Date Sampled: 03/11/96
Type of Water(Produced,Supply, ect.): PROD.

PROPERTIES

pH: 7.50
Specific Gravity: 1.010
Resistivity (ohm-meter): .76
Tempature: 78F

Iron, Fe(total): 1
Sulfide as H2S: 0
Total Hardness:
(see below)

D I S S O L V E D SOLIDS

CATIONS	mg/l		me/l
Sodium, Na:	2323	:	101
Calcium, Ca:	40	:	2
Magnesium, Mg:	2	:	0
Barium, Ba:	N/A	:	N/A
Potassium, K:	410	:	11

ANIONS	mg/l		me/l
N: .500 Chloride, Cl:	3722	:	105
Sulfate, SO4:	30	:	1
Carbonate, CO3:		:	
Bicarbonate, HCO3:	488	:	8

Total Dissolved Solids (calculated): 7015
Total Hardness: 100

Sample(ml): 10.0 ml of EDTA: 1.00
Sample(ml): 10.0 ml of EDTA: .10

Sample(ml): 10.0 ml of AgNO3: 2.10

Sample(ml): 1.0 ml of H2SO4:
Sample(ml): 25.0 ml of H2SO4: 2.00

Sample(ml): 10.0 ml of EDTA: 1.00

REMARKS AND RECOMMENDATIONS:

BJ SERVICES

API W A T E R A N A L Y S I S

Company: MERIDIAN OIL INC.
Field:
Well: SUNRAY D-2-A
Depth:
Formation: MV
State: NM
County: SAN JUAN

W.C.N.A. Sample No.:
Legal Description:
Lease or Unit:
Water.B/D:
Sampling Point:
Sampled By: MOI
Date Sampled: 03/11/96
Type of Water(Produced,Supply, ect.): PROD.

PROPERTIES

pH: 5.87
Specific Gravity: 1.005
Resistivity (ohm-meter): 10.00
Tempature: 78F

Iron, Fe(total): 3
Sulfide as H2S: 0
Total Hardness:
(see below)

D I S S O L V E D SOLIDS

CATIONS	mg/l		me/l
Sodium, Na:	184	:	8
Calcium, Ca:	4	:	0
Magnesium, Mg:	2	:	0
Barium, Ba:	N/A	:	N/A
Potassium, K:	6	:	0

ANIONS	mg/l		me/l
N: .500 Chloride, Cl:	177	:	5
Sulfate, SO4:	30	:	1
Carbonate, CO3:		:	
Bicarbonate, HCO3:	122	:	2

Total Dissolved Solids (calculated): 525
Total Hardness: 20

Sample(ml): 10.0 ml of EDTA: .10
Sample(ml): 10.0 ml of EDTA: .10

Sample(ml): 10.0 ml of AgNO3: .10

Sample(ml): 1.0 ml of H2SO4:
Sample(ml): 25.0 ml of H2SO4: .50

Sample(ml): 10.0 ml of EDTA: .20

REMARKS AND RECOMMENDATIONS:

BJ SERVICES

API W A T E R A N A L Y S I S

Company: MERIDIAN OIL INC.
Field:
Well: SUNRAY COMINGLED WATERS
Depth:
Formation: MV/PC
State: NM
County: SAN JUAN

W.C.N.A. Sample No.:
Legal Description:
Lease or Unit:
Water.B/D:
Sampling Point:
Sampled By: MOI
Date Sampled: 03/11/96
Type of Water(Produced,Supply, ect.): PROD.

PROPERTIES

pH: 7.63
Specific Gravity: 1.005
Resistivity (ohm-meter): 1.50
Tempature: 78F

Iron, Fe(total): 0
Sulfide as H2S: 0
Total Hardness:
(see below)

D I S S O L V E D SOLIDS

CATIONS	mg/l		me/l
Sodium, Na:	1380	:	60
Calcium, Ca:	24	:	1
Magnesium, Mg:	2	:	0
Barium, Ba:	N/A	:	N/A
Potassium, K:	230	:	6

ANIONS	mg/l		me/l
N: .500 Chloride, Cl:	2127	:	60
Sulfate, SO4:	30	:	1
Carbonate, CO3:		:	
Bicarbonate, HCO3:	342	:	6

Total Dissolved Solids (calculated): 4135
Total Hardness: 70

Sample(ml): 10.0 ml of EDTA: .60
Sample(ml): 10.0 ml of EDTA: .10
Sample(ml): 10.0 ml of AgNO3: 1.20
Sample(ml): 1.0 ml of H2SO4:
Sample(ml): 25.0 ml of H2SO4: 1.40
Sample(ml): 10.0 ml of EDTA: .70

REMARKS AND RECOMMENDATIONS:

Analysis No. _____
Date _____

The Western Company

Oil Analysis

Operator MERIDIAN Oil INC
Well SunRay D-2-A
Field _____
Formation Pictured Cliffs
Depth _____
County San Juan
State NM

Date Sampled _____
Date Received 3-12-96
Submitted By MOI
Worked By D. Shepherd
Sample Description _____

API Gravity 55 ° at 60°F
*Paraffin Content _____ % by weight
*Asphaltene Content _____ % by weight
Pour Point _____ °F
Cloud Point _____ °F

Comments: Oil is clear Condensate

Analyst _____

*Report calculations and data on back.

Analysis No. _____
Date _____

The Western Company

Oil Analysis

Operator MERIDIAN OIL INC
Well SUNRAY D-2-A
Field _____
Formation Mesa Verde
Depth _____
County San Juan
State NM

Date Sampled _____
Date Received 3-12-96
Submitted By MOI
Worked By D. Shepherd
Sample Description _____

API Gravity 49.4 ° at 60°F
*Paraffin Content _____ % by weight
*Asphaltene Content _____ % by weight
Pour Point _____ °F
Cloud Point _____ °F

Comments: Oil is Clear to light Green with a Solids And Emulsion Phase.

Analyst DS

*Report calculations and data on back.

Analysis No. _____
Date _____

The Western Company

Oil Analysis

Operator MERIDIAN OIL INC. Date Sampled _____

Well SunRay D-1-A Date Received 3-12-96

Field _____ Submitted By MOI

Formation MESA VERDE Worked By D. Shepherd

Depth _____ Sample Description _____

County San Juan _____

State NM _____

API Gravity 40.0 ° at 60°F

*Paraffin Content _____ % by weight

*Asphaltene Content _____ % by weight

Pour Point _____ °F

Cloud Point _____ °F

Comments: oil is Amber Colored. Emulsified with Solids. AND Parrafin

Analyst _____

*Report calculations and data on back.

Analysis No. _____
Date _____

The Western Company

Oil Analysis

Operator MERIDIAN OIL INC
Well SUN Ray Mixed oils
Field _____
Formation PC/MV.
Depth _____
County _____
State _____

Date Sampled _____
Date Received 3-12-96
Submitted By _____
Worked By D. Shepherd
Sample Description Combined D-1-A + D-2-A oil samples

API Gravity 47.4 ° at 60°F
*Paraffin Content _____ % by weight
*Asphaltene Content _____ % by weight
Pour Point _____ °F
Cloud Point _____ °F

Comments:

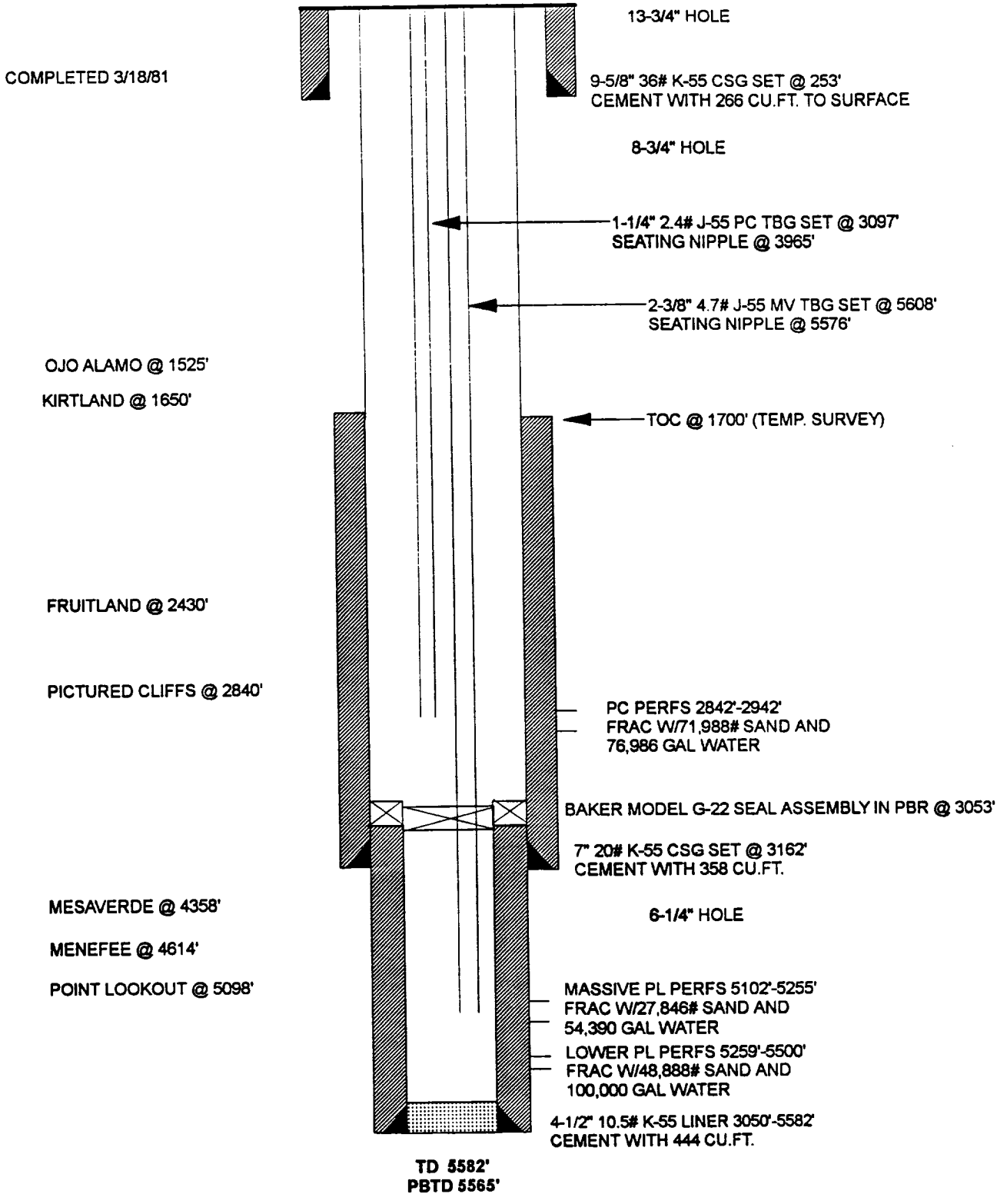
Analyst _____

*Report calculations and data on back.

SUNRAY D #2A

AS OF 7/19/95

BLANCO MESAVERDE/AZTEC PICTURED CLIFFS EXT.
UNIT P, SEC 21, T30N, R10W, SAN JUAN COUNTY, NM



ENGINEERING-LMG

Pertinent Data Sheet - Sunray D #2A

Location: SE/4 935' FSL, 890' FEL, Unit P, Section 21, T30N, R10W,
Lat. 36.793030, Long. 107.883347 by TDG
San Juan County, New

Field: Blanco Mesaverde, Aztec Pictured Cliffs **Elevation:** 6271' GL **TD:** 5582'
KB: 11' **PBTD:** 5565'

Completed: 03-18-81 **Spud Date:** 2-19-80

DP No: 53618A/53618B **Prop. No:** 012600400 **Fed. No:** SF 078204

Casing/Liner Record:

Hole Size	Csg Size	Wt. & Grade	Depth Set	Cement	Top/Cement
13 3/4"	9 5/8"	36# K-55	231'	224 cu. ft.	to surface
8 3/4"	7"	20# K-55	3162'	358 cu. ft.	1700' (TS)
6 1/4"	4 1/2"	10.5# K-55	3050'-5582'	444 cu. ft.	Liner Top

Tubing Record: 2 3/8" 4.7 # J-55 MV tubing set at 5468'. Seating Nipple @ 5438'. Baker Model G-22 seal assembly set @ 3053' in a PBR. 1 1/4" 2.4# J-55 PC tubing set at 2933'. Seating Nipple @ 2903'.

Formation Tops:

Ojo Alamo:	1525'	Mesaverde:	4358'
Kirtland:	1650'	Menefee:	4614'
Fruitland:	2430'	Point Lookout:	5098'
Pictured Cliffs:	2840'		

Logging Record: ISF-IGR, FDC, Temp. Survey

Stimulation: Sand water fractured Lower Point Lookout 5259'-5500' with 100,000 gallons of water and 48,888# of sand.

Sand water fractured Massive Point Lookout 5102'-5255' with 54,390 gallons of water and 27,846# of sand.

Sand water fractured Pictured Cliffs 2842'-2942' with 76,986 gallons of water and 71,988# of sand.

Workover History:

None

Sunray D #2A - Mesaverde
Cliffhouse and Menefee Payadd
Lat-Long by TDG: 36.793030 - 107.883347
SE/4 Section 21, T30N-R10W
REVISED COMPLETION PROCEDURE 3/4/96

Below is the revised completion procedure for the Sunray D #2A. The original completion was for a 30# linear gel and has been revised to a cross link gel with 15% resin coated sand. Due to the continual efforts to reduce costs, a completion method has been identified for savings in the overall completion cost. The amount of gelled water necessary to pump the same amount of sand is significantly less with a cross link fluid. In addition, the high viscosity cross link fluid will minimize banking of sand which will allow resin coated sand to set up near the wellbore. In 1995, Area 45 was successful in reducing costs by decreasing amount of water and clean up time. Since there is not an indication that the linear gel completion has better reserves than a cross link gel, it is recommended that the Sunray D #2A be completed with a cross link fluid and resin coated sand.

1. Hold safety meeting. MIRU. Comply with all MOI, BLM and NMOCD rules and regulations. Install 6 frac tanks and 1x400 bbl rig tank. Fill each frac tank with 3#'s of biocide and filtered (25 micron) 1% KCl water.

2. Obtain and record all wellhead pressures. ND WH, NU BOP. TOOH w/ 1-1/4" tubing set @ 2933'. TOOH w/ 2-3/8" tubing set at 5468'. Send tubing to yard for salvage. (MV/PC intervals will be commingled with 2-3/8" tubing.) Replace bad tubing as necessary.

3. PU 7" (20#) casing scraper, TIH and run casing scraper to 3050'. TOOH.

4. TIH with 2-3/8" tubing and 3-3/4" bit. CO to PBTD of 5565'. TOOH.

5. RIH and wireline set a 4-1/2" CIBP @ 5075'. Load hole w/ 1% KCL water from surface if possible.

6. RU wireline and run CBL-GR-CCL from ± 5075' to 3050' (top of liner).

7. Perforate the following CH/Menefee interval using 3-1/8" HSC guns with 12 gram charges and 0.31" diameter holes: (30 holes total)

4413	**4603**	**4852**
4437	**4611**	**4860**
4448	**4622**	**4875**
4481	**4631**	**4898**
4488	**4656**	**4936**
4496	**4672**	**4946**
4511	**4734**	**4987**
4517	**4752**	**5006**
4560	**4757**	**5046**
4585	**4804**	**5052**

Inspect guns to ensure all perforations fired.

8. TIH w/ 4-1/2" fullbore packer, ± 100' of 2-3/8" tubing and 3-1/2" N-80 frac string. Set packer @ ± 3100'. Load hole w/ water and pressure test casing and CIBP to 3800 psi.

9. **Maximum allowable treating pressure is 3800 psi during acid job.** Pump 1500 gallons of 15% HCL acid @ 8 Bls/min dropping 7/8" diameter RCN ball sealers spaced evenly throughout the job (2 balls per perforation hole). Release packer and TOOH.

Sunray D #2A
Mesaverde Payadd
August 31, 1995

9. RU wireline, retrieve balls w/ 4-1/2" junk basket and report number of hits.

   TIH w/ 4-1/2" fullbore packer, + 100' of 2-3/8" tubing and 3-1/2" N-80 frac string. Set packer @ 3100'.

10. Hold safety meeting. Monitor the backside during stimulation. **Maximum allowable surface treating pressure is 6000 psi. (If static conditions exist, maximum allowable surface treating pressure is 3000 psi.)**

11. Pressure test surface lines to 7000 psi. (1000 psi over maximum treating pressure but less than the working pressure of the lines.) Fracture stimulate the Cliffhouse/Menefee interval @ 45 BPM using 30# cross link and 140m lbs of sand tagged w/ Irridium. Do not over displace during flush. If well is on a vacuum, cut flush by 15%. (Stage flush as soon as sand concentration begins to drop.) Shut in well immediately after completion of the stimulation until pressure falls to zero.

12. Release packer and TOOH standing back frac string. Check and inspect packer.

20. TIH w/ 3-3/4" bit and CO to CIBP. Obtain pitot gauge. Drill up CIBP set @ 5075. CO to PBTD (5565'). PU above the Mesaverde perforations and flow the well naturally, making short trips for clean up when necessary. Obtain pitot gauge for after clean up.

21. When sand has diminished, TOOH.

22. RU wireline company. Run After Frac GR from 5100' to top of tracer activity.

23. Call engineering to ensure commingle was approved. (If approval has not been given, a bridge plug will be set and a small rig will move back on it after approval is given.) TIH with one joint of 2-3/8", 4.7#, J-55 tubing w/ expendable check, an F-nipple, then the remaining 2-3/8" tubing. Land tubing near bottom perforation (5500').

25. ND BOP's, NU WH. Pump off expendable checks. Obtain final pitot up tubing if possible. If well will not flow on it's own, make swab run to F-nipple. If swab run is not necessary, run a broach on slickline to ensure that the tubing is clear. RD and MOL. Return well to production.

Sunray D #2A
Mesaverde Payadd
August 31, 1995

Approval: W.S. [illegible] 3/8/96
Drilling Superintendent

Approval: Gerald P Fletcher 3-11-96
Northwest Basin Team Leader

Contacts:

Engineer - Mary Ellen Lutey
Office - (599-4052)
Home - (325-9387)
Pager - (324-2671)

OR

Jimmy Smith
Office - (326-9713)
Home - (327-3061)

Frac Consultant - Mark Byars
Pager - (327-8470)
Mobile - (320-0349)
Home - (327-0096)

OR

Mark Martinez
Pager - (599-7429)
Mobile - (860-7518)
Home - (326-4861)

Anticipated Stimulation Procedure

General Information

Well Name:	Sunray D #2A
Location:	Sec. 21, T30N, R10W
Formation:	Cliffhouse/Menefee
Vendors	
Stimulation:	B.J. Services (327-6222)
Tagging:	Protecnics
Fluid:	30# Cross Link Gel
Note:	

Well Configuration

Casing:	4-1/2", 10.5#		1975 FT
	3-1/2", 9.5#		3000 FT
Tubing:	2-3/8", 4.7#		100 FT
Capacity:	0.0159	0.01223	0.00387
PBTD	5075 ft		
Top Perf:	4428 ft		
Bot Perf:	4901 ft		
Midpoint:	4665 ft		

Vol. to:	(gals)
PBTD	2,876
Top Per:	2,444
^-200' :	2,311

Perforations

1 spf — 0.3 " holes

30 holes — 12 " penetration

Formation and Stimulation Data

Max Treating Pressure*	6000 psi
Frac Gradient:	0.6 psi/ft
BH Temp:	145 deg. F
Antic. Treating Rate:	45 BPM
Antic. BH Treating Pres:	2,799 psi
Antic. Surf Treating Pres:	5,566 psi
Percent Pad:	18%
Net Pay:	120 ft
lb prop/net ft pay:	1,167 lb/ft
Job Duration:	37.9 min
Perf friction	814 psi
Total friction	4,787 psi

Stimulation Schedule

		Sand Data				Fluid Data				Rate and Time Data			Comments
Tag	Stage	Sand Mesh	Sand Conc ppg	Stage Sand lbs	Cum Sand lbs	Stage Fluid gals	Cum Fluid gals	Stage Slurry gals	Cum Slurry gals	Slurry Rate bpm	Stage Time min	Cum Time min	
	Pad	N/A	0.0	0	0	10,000	10,000	10,000	10,000	45.0	5.3	5.3	
No	2	20/40	1.0	10,500	10,500	10,500	20,500	10,979	20,979	45.0	5.8	11.1	
No	3	20/40	2.0	30,000	40,500	15,000	35,500	16,368	37,347	45.0	8.7	19.8	
No	4	20/40	3.0	45,000	85,500	15,000	50,500	17,052	54,399	45.0	9.0	28.8	
No	5	20/40	4.0	32,000	117,500	8,000	58,500	9,459	63,858	45.0	5.0	33.8	
No	6	20/40	5.0	22,500	140,000	4,500	63,000	5,526	69,384	45.0	2.9	36.7	
	Flush	N/A	0.0	0	140,000	2,311	65,311	2,311	71,695	45.0	1.2	37.9	
				Total	lb/ft	Total		Total		Ave.	Total		
				140,000	1,167	65,311		71,695		45.0	37.9		

Volumes and Additives

Water Volume=	65,311	treat +	3,266	excess =	68,576 gallons	(MOI)
Water Volume=	1,555	treat +	78	excess =	1,633 bbls	(MOI)

Fluid Volume: 1,633 bbl designed treating volume

20/40 Arizona Sand: 117,500 lbs Resin: 22,500 lbs

Fluid: 3# Bacteriacide per tank (added before filling with water).

Filtered 1% KCL water (supplied by MOI) and heated to 70 degrees.

7.5 gal/1000 Liquid Gel Concentrate

.75 gal/1000 Cross Linker

1 gal/1000 Surfactant

.5#/gal Breaker

If necessary: Buffer and Caustic

Radioactive Tagging

.4 mci IR192 / 1000# sand

Equipment

Tanks: 5.0 x 400 bbl frac tanks(supplied by MOI).

Filled w/ 1,633 bbls 2% KCl water (supplied by MOI).

Mix on the fly equipment.

Mountain Mover.

Blender.

Fluid Pumps as required.

Comments and Special Instructions

MAXIMUM ALLOWABLE TREATING PRESSURE IS 6000 PSI.*

Frac down 3-1/2" frac string w/ 100' of 2-3/8" tubing and a packer set in the 4-1/2" liner.

Hold safety meeting with everyone on location before pressure testing surface lines.

Pressure test surface lines to 7000 psi (1000 over max allowable but less than working pressure).

Adjust flush rate and volume according to potential for well to be on vacuum.

(If well is on a vacuum, cut flush by 15%.)

*At static conditions, maximum pressure is 3800 psi.

Production Engineer: Mary Ellen Lutey (pager #324-2671)

j STATE OF NEW MEXICO
ENERGY and MINERALS
DEPARTMENT
This form is not to be used for reporting packer leakage tests in Southeast New Mexico

OIL CONSERVATION DIVISION

NORTHWEST NEW MEXICO PACKER-LEAKAGE TEST

Operator Meridian Oil, Inc. Lease Sunray D Well No. 2A

Location of Well: Unit P Sect 21 Twp. 30w Rge. 10w County San Juan

	NAME OF RESERVOIR OR POOL	TYPE OF PROD. (Oil or Gas)	METHOD OF PROD. (Flow or Art. Lift)	PROD. MEDIUM (Tbg. or Cag.)
Upper Completion	Pictured Cliffs	GAS	FLOW	TBG
Lower Completion	Mesaverde	GAS	FLOW	TBG

PRE-FLOW SHUT-IN PRESSURE DATA

	Hour, date shut-in	Length of time shut-in	SI press. psig	Stabilized? (Yes or No)
Upper Completion	7/7/95	7 Days	261	
Lower Completion	7/7/95	5 Days	301	

FLOW TEST NO. 1

Commenced at (hour,date)* 12-Jul-95 Zone producing (Upper or Lower) LOWER

TIME (hour,date)	LAPSED TIME SINCE*	PRESSURE		PROD. ZONE TEMP	REMARKS
		Upper Completion	Lower Completion		
10-Jul		257	299		
11-Jul		259	300		
12-Jul		261	301		
13-Jul		267	330		
14-Jul		269	320		

Production rate during test

Oil: _____ BOPD based on _____ Bbls. in _____ Hours. _____ Grav. _____ GOR _____

Gas: _____ MCFPD; Tested thru (Orifice or Meter): _____

MID-TEST SHUT-IN PRESSURE DATA

	Hour, date shut-in	Length of time shut-in	SI pres. psig	Stabilized? (Yes or No)
Upper Completion				
Lower Completion				

(Continue on reverse side)