



4-3-95

1119

Texaco Exploration and Production Inc

3300 N Butler
Farmington NM 87401

OIL CONSERVATION DIVISION

RECEIVED

March 8, 1995

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STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
PO BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504

Attention: David Catanach

RE: **Application for exception to NMOCD Rule 303-A: Downhole Commingle of Lydia Rentz No. 7-A 1650' FNL & 1650' FEL, Unit G, Sec. 20-T25N-R3W, NMPM, Rio Arriba County, New Mexico**

Dear Mr. Catanach:

Texaco Exploration and Production Inc. respectfully requests administrative approval to downhole commingle the Blanco Mesaverde and the West Lindrith Gallup/Dakota within the referenced well. Approval of this application would require an exception to NMOCD Rule 303-a. Please accept the attached information in your consideration of this matter. All offset operators were notified of this request by certified mail (copy of return receipt cards attached).

The subject well is currently completed in the West Lindrith Gallup/Dakota and producing through 2-3/8" tubing. A "dual" completion would require that the Gallup/Dakota be pumped under packer and the Mesaverde be flowed up the casing-tubing annulus. Pumping the Gallup/Dakota under packer would be inefficient due to gas locking. Flowing the Mesaverde up the annulus would be inefficient due to wellbore loading and the inability to swab. The downhole commingling of these zones will offer an economic method of production without reservoir damage, waste reserves, or violation of correlative rights.

If you have any questions concerning this matter please contact Mr. Robert Schaffitzel at (505) 325-4397, ext. 27. Your attention to this matter is greatly appreciated.

Sincerely,

Ted A. Tipton
Operating Unit Manager

RFS/s

Attachments
NMOCD-Aztec
file

Application for Exception to Rule 303-Segregation of Production From Pools

- (1) **Name and address of the operator:** Texaco Exploration and Production
3300 N. Butler Suite 100
Farmington, NM 87401
- (2) **Lease name, well number, well location, name of the pools to be commingled.**

Lease Name: Lydia Rentz
Well Number: 7-A
Well Location: 1650' FNL & 1650' FEL, Unit G, Sec. 20
T25N-R3W, NMPM
Rio Arriba County, New Mexico

Pools to Commingle: Blanco Mesaverde and West Lindrith Gallup/Dakota

- (3) **A plat of the area showing the acreage dedicated to the well and the ownership of all offsetting leases.**

Attached (Attachment I, II, III)

- (4) **A current (within 30 days) 24-hour productivity test on Division C-116 showing the amount of oil, gas and water produced from each zone.**

The C-115 for Lydia Rentz No. 7-A Gallup/Dakota production is attached (Attachment IV). No Production data exists for the proposed Mesaverde completion. However, attached is a C-115 showing production from the nearest Mesaverde completions(Attachment V). The Mesaverde completion in the Lydia Rentz No. 7-A is expected to perform in a similar manner.

- (5) **A production decline curve for both zones showing that for a period of at least one year a steady rate of decline has been established for each zone for statistical purposes. (This requirement may be dispensed with in the case of a newly completed or recently completed well which has little or no production history. However, a complete resume of the well's completion history including description of treating, testing, etc., of each zone, and a prognostication of future production from each zone shall be submitted.)**

Gallup/Dakota is a new completion and has not produced long enough to create an accurate decline curve. A decline curve of offset Lydia Rentz No.7 and a production curve of the Lydia Rentz 7-A are attached (Attachments VI-A, VI-B).

Mesaverde - New completion, no production history is available. Decline curves of offsets C.W. Roberts No. 7 and Ora No.1 are attached (Attachments VII-A, VII-B). The Mesaverde completion in the Lydia Rentz No. 7-A is expected to perform in a similar manner.

- (6) **Estimated bottomhole pressure for each artificially lifted zone. A current (within 30 days) measured bottomhole pressure for each zone capable of flowing.**

The Mesaverde and Gallup/Dakota bottom hole pressure is estimated based on offset data (New Mexico Packer Leakage Test 9/94 Lydia Rentz No.7)

Mesaverde: 980 psi (Attachment VIII)
Gallup/Dakota: 550 psi (Attachment VIII)

Actual Mesaverde P_{BH} will be obtained using shut-in testing upon completion.

Application for Exception to Rule 303-Segregation of Production From Pools
Requirements Continued.

- (7) **A description of the fluid characteristics of each zone showing that the fluids will not be incompatible in the well-bore.**

The fluids have no abnormal components that would prohibit commingling, or promote the creation of emulsions or scale. The major components of the produced waters are sodium, chlorides and bicarbonates. Several offsets are commingled in the proposed zones and no production problems have occurred.

- (8) **A computation showing that the value of the commingled production will not be less than the sum of the individual streams.**

<u>Current Gallup/Dakota Prod.</u>		<u>Anticipated Mesaverde Prod.</u>	
Oil, BOPD	32	Oil, BOPD	0
Gas, MCFD	191	Gas, MCFD	200
Water, BWPD	10	Water, BWPD	0

The combined production from the Gallup/Dakota and Mesaverde formations will be approximately 391 MCFD, 32 BOPD, and 10 BWPD.

The Mechanics of the wellbore are not conducive to a "dual" completion. Given the 5-1/2" casing, a dual completion would require that the Gallup/Dakota be pumped under a packer and the Mesaverde be flowed up the casing-tubing annulus. Pumping the Gallup/Dakota under a packer would be inefficient due to gas locking. Flowing the Mesaverde up the annulus would be inefficient due to wellbore loading and the inability to swab. Therefore, it is requested that commingling be approved.

- (9) **A formula for the allocation of production to each of the commingled zones and a description of the factors or data used in determining such formula.**

Using our anticipated rates as shown in item #8 as an example, allocation will be calculated as follows:

	<u>Gas</u>	<u>Oil</u>	<u>Water</u>
Mesaverde	$200/391=51\%$	$0/32=0\%$	$0/10=0\%$
Gallup/Dakota	$191/391=49\%$	$32/32=100\%$	$10/10=100\%$

The actual production data obtained prior to and following the commingling process will be presented to the Aztec NMOCD District office to arrive factors for splitting the future production stream.

- (10) **A statement that all offset operators and, in the case of a well on federal land, the United States Bureau of Land Management, have been notified in writing of the proposed commingling.**

All offset operators have been notified. Please find attached, signed return receipt cards from each operator (Attachment IX).

OIL CONSERVATION DIVISION

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

DISTRICT I

P.O. Box 1980, Hobbs, NM 88240

DISTRICT II

P.O. Denver DD, Artesia, NM 88210

DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator TEXACO		Lands LYDIA RENTZ		Well No. 7A	
Unit Layer G	Section 20	Township 25 NORTH	Range 3 WEST	County RIO ARRIBA	
Actual Footage Location of Well: 1650 feet from the NORTH line and 1650 feet from the EAST line					
Ground level Elev. 7261' UG	Producing Formation Mesa Verde	Fuel Blanco, Mesa Verde West Lindrith, Gallup-Dakota		Dedicated Acreage: 320/160 Acres	

1. Outline the acreage dedicated to the subject well by colored pencil or ink on the plat below.

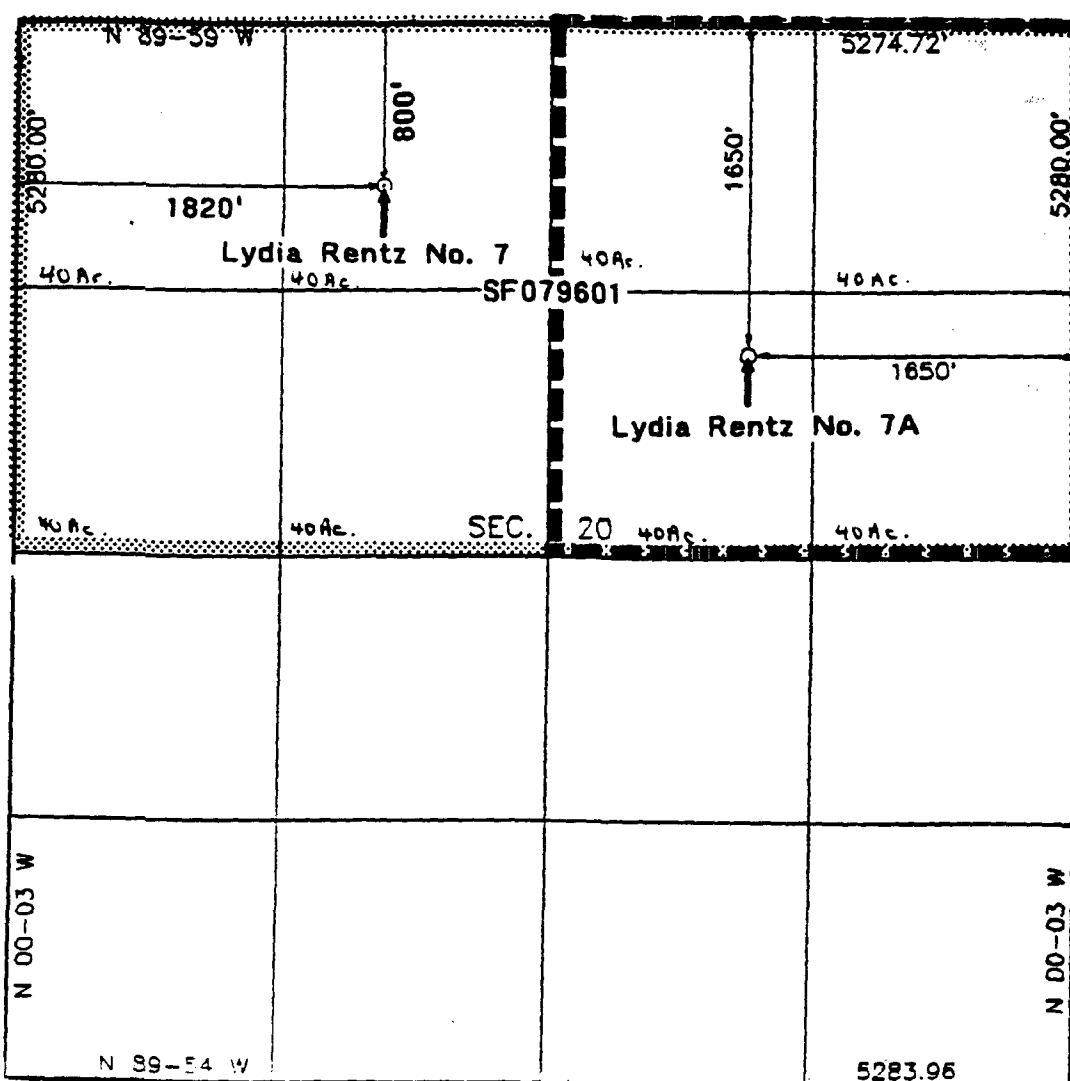
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc.?

☐ Yes ☐ No If answer is "yes" type of consolidation

If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.)

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, force-pooling, or otherwise) or until a non-standard unit, eliminating such interest, has been approved by the Division.



OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Signature
Royce Mariott
Printed Name
Royce Mariott
Position
Division Surveyor
Company
TEXACO E&P Inc.
Date
2-9-94

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes, actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

12/10/93

Date Surveyed
[Signature]
Signature
[Signature]
Professional Surveyor
NEW MEXICO
6857
6857
Caroline Edwards
Neale Edwards

OFFSET OPERATORS LYDIA RENTZ # 7A SEC. 20 T25N / R03W

TEXACO 18	TEXACO 17	CURTIS J. LITTLE, OIL & GAS 16
TEXACO 19	LYDIA RENTZ #7A ● TEXACO 20	SCHALK DEVELOPMENT CO. ELLIOT OIL CO, INC 21
TEXACO 30	TEXACO 29	ELLIOT OIL CO, INC 28

**OFFSET OPERATORS
LYDIA RENTZ #7A
T25N / R03W**

Curtis J. Little, Oil & Gas
2346 E. 20th St.
Farmington, NM 87499
(505) 327-6176

Schalk Development Co.
P.O. Box 25825
Albuquerque, NM 87125
(505) 881-6649

Elliot Oil Co.
Box 1355
Roswell, NM 88202
(505) 622-5840

INJECTION				PRODUCTION					DISPOSITION OF OIL, GAS, AND WATER							
7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
POOL NO. AND NAME Property No. and Name WELL No. & U-L-S-T-R API No.	C O D E I	S v o l u m e	P r e s s u r e	C O D E 2	B a r r e l s O i l /c o n d e n s a t e p r o d u c e d	B a r r e l s o f w a t e r p r o d u c e d	M c f G a s P r o d u c e d	D a y s P r o d u c e d	C O D E 3	P o i n t o f D i s p o s i t i o n	G a s B T U o r O i l A P I G r a v i t y	O i l o n h a n d a t b e g i n n i n g o f m o n t h	V o l u m e B b l s /m c f	T r a n s p o r t e r O G R I D	C O D E 4	O i l o n h a n d a t e n d o f m o n t h
39189 LINDRITH GALLUP-DAKOTA WEST																
011170 JICARILLA "C"		O			154	77	1813			W	2504250			46		
LEASE TOTAL																
011177 MCCONNELL, L. L.																
001 N-30-25N-03W	P				137	156	422	31								
30-039-05776																
001A J-30-25N-03W	P				810	100	1407	30								
30-039-25323																
013 N-31-25N-03W	P				176	31	1367	31								
30-039-23008																
014 D-29-25N-03W	P				430	568	1456	31								
30-039-25249																
011 B-29-25N-03W	P				562	681	2643	27								
30-039-25319																
011 L-29-25N-03W	P				702	665	1527	26								
30-039-25317																
LEASE TOTAL					2817	2201	8822		O O G G G G W	2517610 2517610 2505630 2517630 2813085 2517650	45.0 1326 1099 1333	909	2418 7033 362 1307 120 1533	014538 022345 007057 007057	U	1308
011207 RENTZ, LYDIA																
011 D-19-25N-03W	P				901	114	1195	31								
30-039-25303																
011A K-19-25N-03W	P				1242	277	3094	31								
30-039-25377																
007 C-20-25N-03W	P				113	0	730	31								
30-039-22733																
007A G-20-25N-03W	P				472	251	3479	26								
30-039-25378																

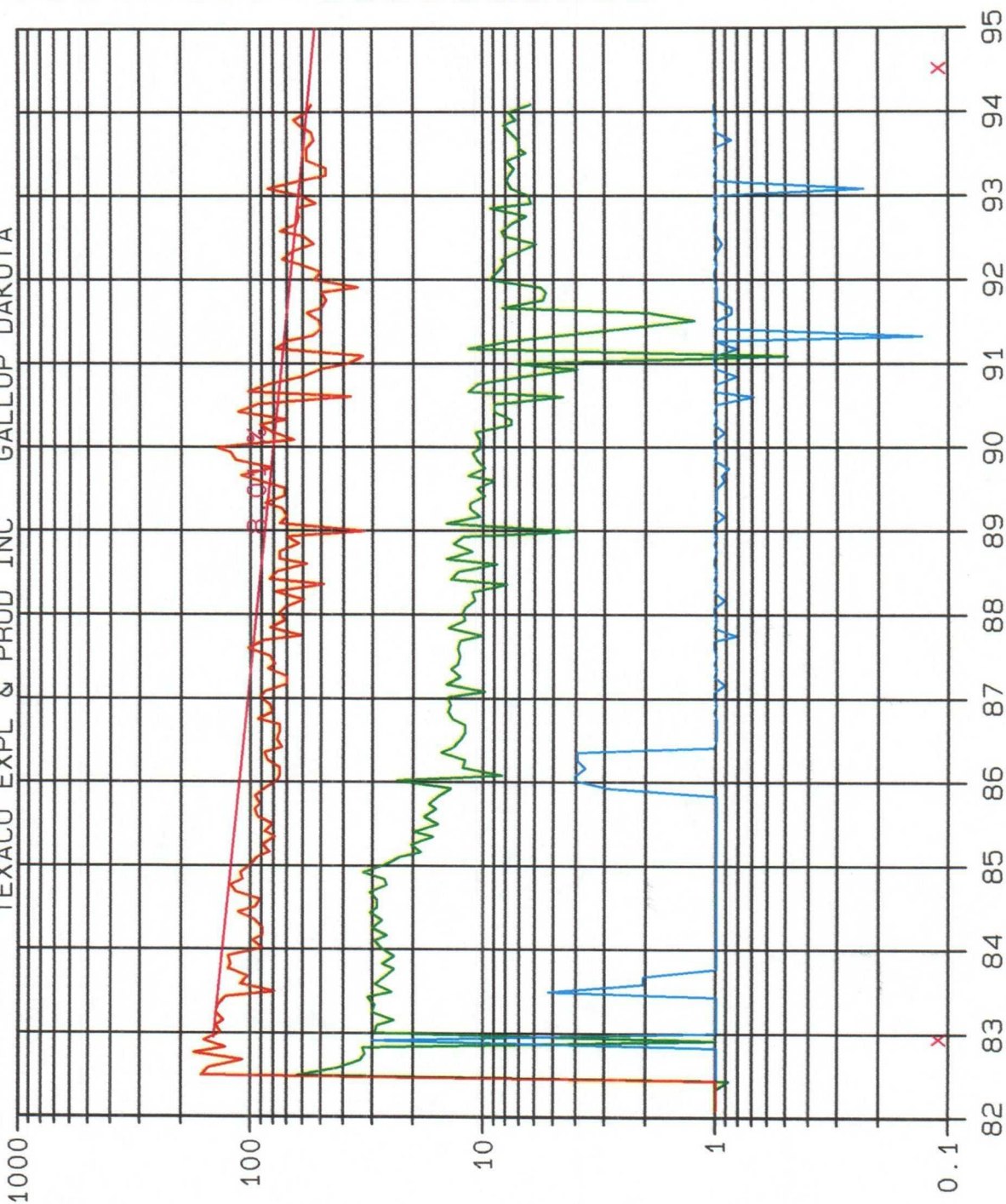
Attachment IV

INJECTION				PRODUCTION				DISPOSITION OF OIL, GAS, AND WATER							
8 C O D E 1	9 S Volume	10 Pressure	11 C O D E 2	12 Barrels Oil/conden- sate produced	13 Barrels of water produced	14 MCF Gas Produced	15 Days Prod- uced	16 C O D E 3	17 Point of Disposition	18 Gas BTU or Oil API Gravity	19 Oil on hand at beginning of month	20 Volume Bbls/mcf	21 Transporter OGRID	22 C O D E 4	23 Oil on hand at end of month
72319 BLANCO MESAVERDE (PRORATED GAS)															
O11183 NEW MEXICO COM "C"															
LEASE TOTAL															
O11205 PLATERO, NELLIE															
P	005 N-11-27N-09W			22	31	1831	31		2519010	1185	67	1296	022345		75
	30- -13040								2519110	1318	133	1894	007057		155
	005 I-11-27N-09W			8	3	1333	31		2519030			74			
P	30- -22672								2519130						
LEASE TOTAL															
O11207 RENTZ, LYDIA															
P	011 D-19-25N-03W			124	0	866	31								
	30-039-25303														
	007 C-20-25N-03W			0	0	0	0								
S	30-039-22733			0	0	0	0								
P	008 C-19-25N-03W			0	0	9305	31		2517510	45.4	52	116	014538		52
	30-039-22970								2812178		19	9305	007057		27
									2812178	1250		866	022345		
LEASE TOTAL															
O11208 ROBERTS, C. W.															
P	003 D-18-25N-03W			124	0	10171									
	30-039-05966														
	003A 003-18-25N-03W			0	31	3580	31								
S	30-039-22732			0	0	0	0								

Attachment V

LYDIA RENTZ 000007 LINDRITH WEST (GALLUP DAKOTA) GD
 TEXACO EXPL & PROD INC GALLUP DAKOTA

LEASE DATA
 LSE 25N03W20C00G
 FLD 8044442
 OPER 158628
 ZONE GALLUP DAKOT
 25N-3W-20
 COUNTY 039
 STATE 30
 300392273300
 STATUS 1-94
 CO 62 MBO
 CG 353 MMCF
 CW 4 MBW
 BOPD 6
 BWPD 1
 MCFPD 55
 WELLS 1
 CI 0 MBWI
 BWIPD 0



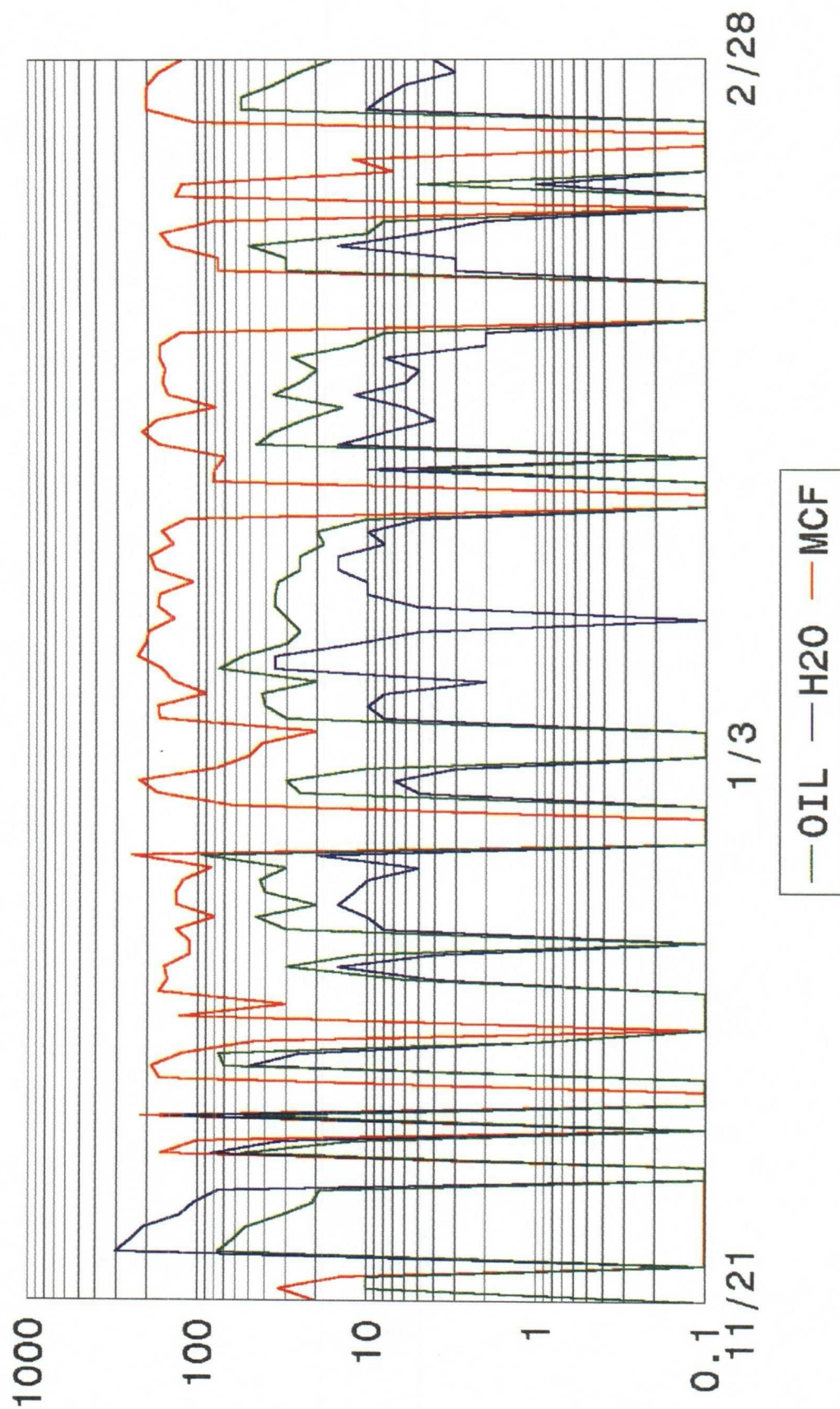
BOPD
 BWPD
 MCFPD

Attachment VI-A

YEARS

Lydia Rentz No. 7-A

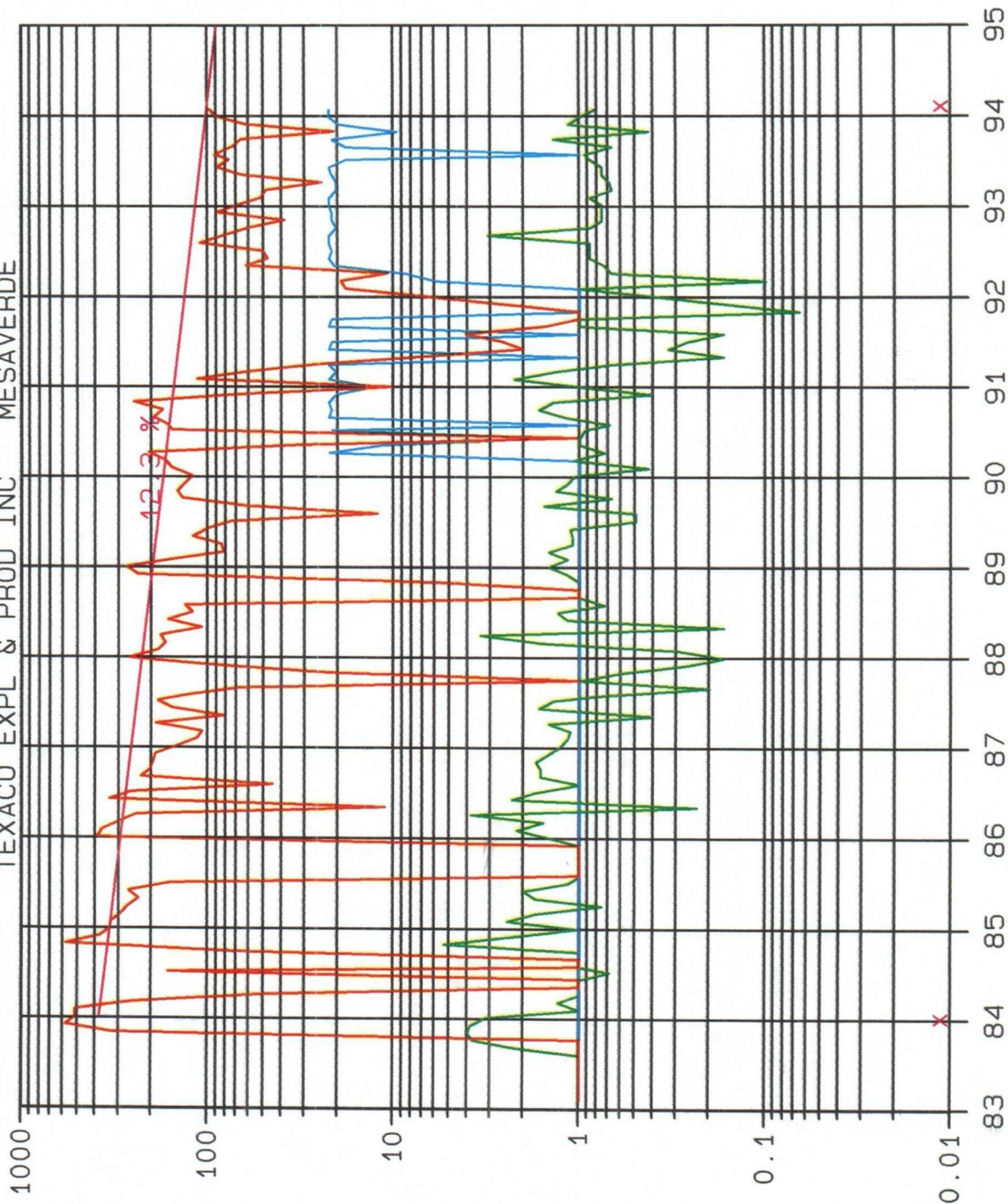
Production



C W ROBERTS 000007 BLANCO (MESAVERDE) MV

TEXACO EXPL & PROD INC MESAVERDE

LEASE DATA
 LSE 25N03W17J00N
 FLD 8007074
 OPER 158628
 ZONE MESAVERDE
 25N-3W-17
 COUNTY 039
 STATE 30
 300392310200
 STATUS 1-94
 CO 4 MBO
 CG 478 MMCF
 CW 23 MBW
 BOPD 1
 BWPD 22
 MCFPD 97
 WELLS 1
 CI 0 MBWI
 BWIPD 0



BOPD BWPD MCFPD

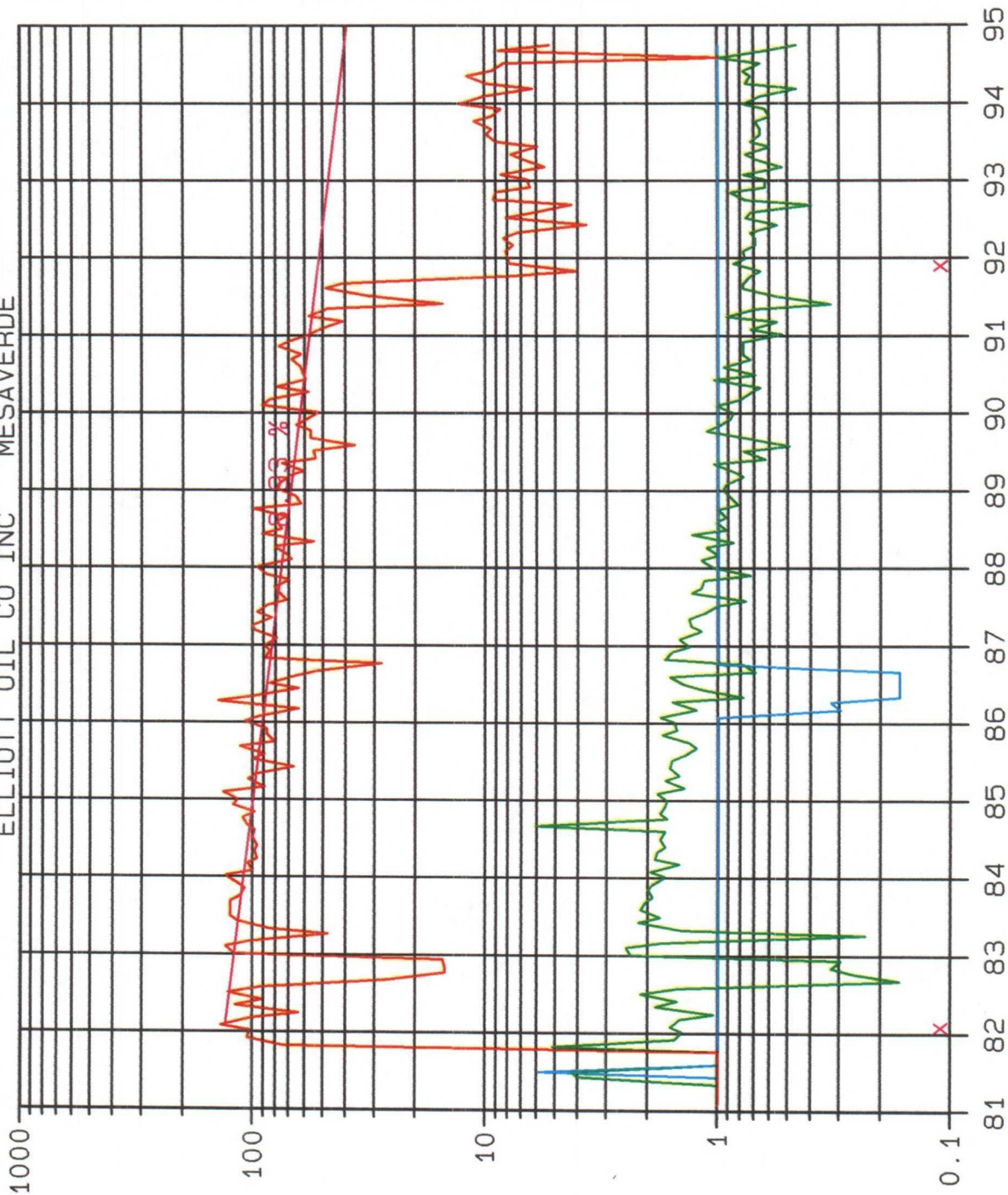
Attachment VII-A

YEARS

ORA 000001 BLANCO (MESAVERDE) MV

ELLIOTT OIL CO INC MESAVERDE

LEASE DATA
 LSE 25N03W21E00N
 FLD 8007074
 OPER 215469
 ZONE MESAVERDE
 25N-3W-21
 COUNTY 039
 STATE 30
 300392257500
 STATUS 9-94
 CO 6 MBO
 CG 304 MMCF
 CW 0 MBW
 BOPD 0
 BWPD 0
 MCFPD 5
 WELLS 1
 CI 0 MBWI
 BWIPD 0



BOPD
 BWPD
 MCFPD

Attachment VII-B

YEARS

NORTHWEST NEW MEXICO PACKER-LEAKAGE TEST

Operator TEXACO E & P INC. Lease LYDIA RENTZ Well No. 7

Location of Well: Unit C Sec. 20 Twp. 25N Rge. 3W County RIO ARriba

	NAME OF RESERVOIR OR POOL	TYPE OF PROD. (OIL OR GAS)	METHOD OF PROD. (Flow or Art. Lift)	PROD. MEDIUM (Tbg. or Csg.)
Upper Completion	BLANCO MESAVERDE	GAS	FLOW	TBG.
Lower Completion	LINDRETH GALLUP DAKOTA WEST	GAS	FLOW	TBG.

PRE-FLOW SHUT-IN PRESSURE DATA

Upper Completion	Hour, Date shut-in 11-91	Length of time shut-in	Si press. psig	Stabilized (Yes or No)
Lower Completion	Hour, Date shut-in	Length of time shut-in	Si press. psig	Stabilized (Yes or No)

FLOW TEST NO. 1

Commenced at (hour, date)*				Zone producing (Upper or Lower)	
TIME (hour, date)	LAPSED TIME SINCE*	PRESSURE		PROD. ZONE	REMARKS
		Upper Completion	Lower completion		
9-8-94					
9-9-94	24 HRS.	980	390		BOTH ZONES SHUTIN
9-10-94	48 HRS.	980	480		
9-11-94	72 HRS.	980	528		
9-12-94	96 HRS.	980	550		
9-13-94	120 HRS.	980	333		UPPER SHUTIN LOWER FLOW 24 HRS.
9-14-94	144 HRS.	980	405		UPPER SHUTIN LOWER FLOW 24 HRS.
9-15-94	168 HRS.	980	378		UPPER SHUTIN LOWER FLOW 24 HRS.

Production rate during test

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

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

MID-FLOW SHUT-IN PRESSURE DATA

Upper Completion	Hour, Date shut-in	Length of time shut-in	Si press. psig	Stabilized (Yes or No)
Lower Completion	Hour, Date shut-in	Length of time shut-in	Si press. psig	Stabilized (Yes or No)

RETURN ADDRESS completed on the reverse side?

5. Signature (Addressee)
 6. Signature (Agent)

Wurtis S. Little, Oil & Gas
 2346 E. 20th St.
 Farmington, NM 87499

3. Article Addressed to:

4a. Article Number
 P 337 994 952

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☒ Return Receipt for Merchandise

7. Date of Delivery
 3-6-95

8. Addressee's Address (Only if requested and fee is paid)

Thank you for using Return Receipt Service.

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

3. Article Addressed to:
 Elliot Oil Co.
 Box 1355
 Roswell, NM 88202

4a. Article Number
 P 081 443 730

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☒ Return Receipt for Merchandise

7. Date of Delivery
 3-6-95

8. Addressee's Address (Only if requested and fee is paid)

PS Form 3811, December 1991 *U.S. GPO: 1993-352-714

DOMESTIC RETURN RECEIPT

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

3. Article Addressed to:
 Schalk Development Co.
 PO Box 25825
 Albuquerque, NM 87125

4a. Article Number
 P 081 443 731

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☒ Return Receipt for Merchandise

7. Date of Delivery
 7

8. Addressee's Address (Only if requested and fee is paid)

PS Form 3811, December 1991 *U.S. GPO: 1993-352-714

DOMESTIC RETURN RECEIPT



LYDIA RENTZ No. 7A

CURRENT COMPLETION
w/ Proposed Mesa Verde Completion

LOCATION:

1650' FNL & 1650' FEL
SW/NE, Sec. 20, T25N, R03W
Rio Arriba County

LOCATION: KB - 7258'
GL - 7243'

FORMATION TOPS:

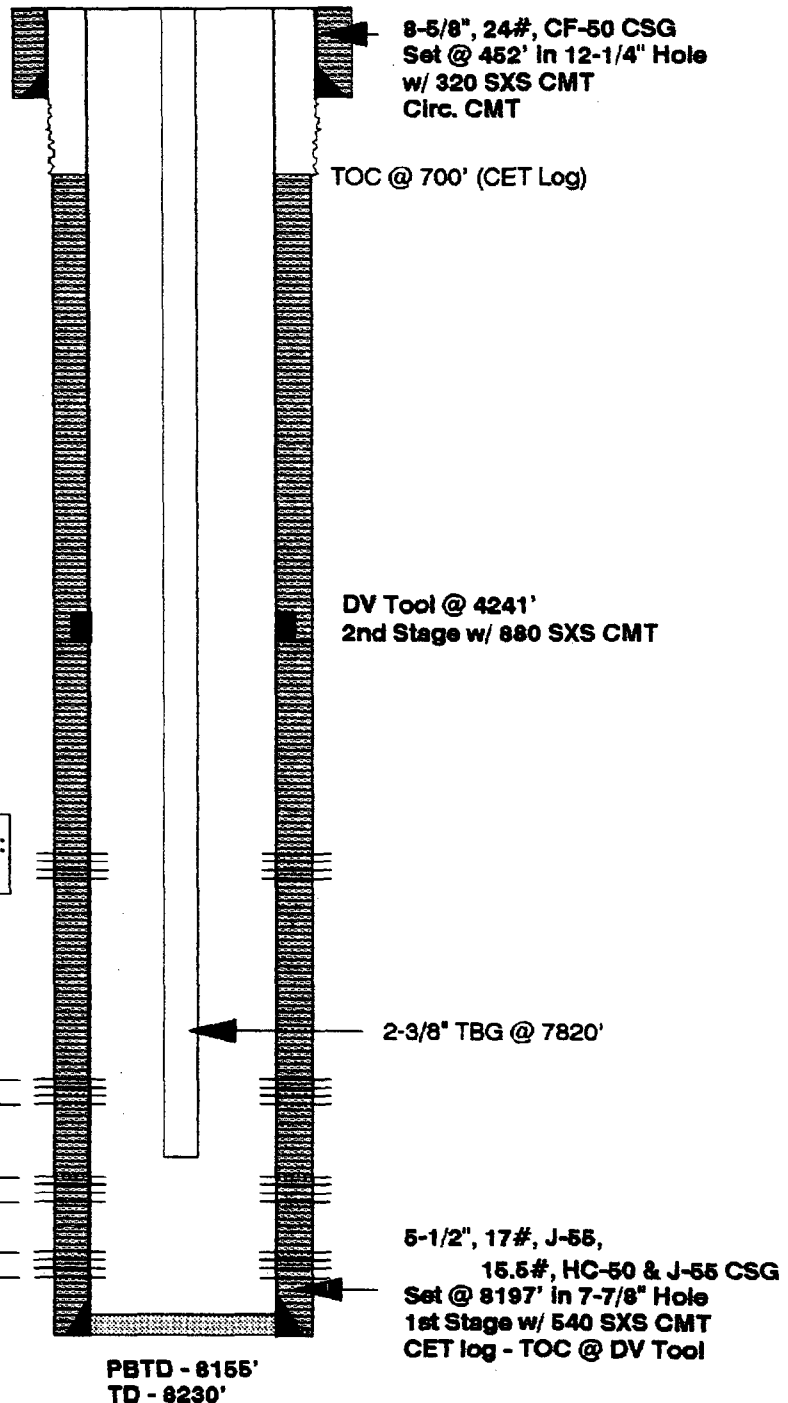
Ojo Alamo 3342'
Kirtland 3456'
Fruitland 3546'
Pictured Cliffs 3704'
Lewis 3834'
Chacra 4614'
Cliff House 5394'
Menefee 5448'
Pt. Lookout 5914'
Mancos 6056'
El Vado 6764'
Gallup 7028'
Niobrara 7057'
Sanostee 7538'
Carlile 7653'
Greenhorn 7835'
Graneros 7898'
Dakota 7933'
Morrison 8157'

PROPOSED MESA VERDE PERFS:
5916' - 5928', 4 SPF

GALLUP PERFS:
7057'-72' 4 SPF, 0.39" Holes
Frac w/ 88158 gl XL gel, 222000# 20/40 Sand

U. DAKOTA PERFS:
7935'-48', 4 SPF, 0.39" Holes
Frac w/ 9634 gl HCL, 68712 gl XL gel,
156270# 20/40 Sand

L DAKOTA PERFS:
8085'-8115', 4 SPF, 0.39" Holes
Frac w/ 45160 gl XL gel, 62641# 20/40 Sand



LYDIA RENTZ NO. 7-A
Mesaverde Workover Procedure

1. **MIRUSU, POOH w/ rods, NDWH, NUBOP, POOH w/ 2-3/8" tubing.**
2. **RIH w/ 5-1/2" RBP on 2-3/8" TBG, set RBP @ 6020'. Test RBP and CSG to 3000 psi. Dump one SK of sand on top of RBP. Spot 500 gals 15% HCL across perf interval. POOH w/ TBG.**
3. **RU wireline and GIH with a 4" OD Schlumberger "Heg" cased carrier gun and perforate the following Mesaverde Interval with 4 SPF (0.39" holes), 90 degree phasing:**

<u>Interval</u>	<u>Ft</u>	<u>Holes</u>
5916-5928	12'	48

4. **RU Service Company. Install Frac Tree. Break down perfs (flush acid) with 2 % KCL water (establish rate and pressure).**
5. **Fracture stimulate perforated interval using 119,000 # 20/40 Brady Sand and 51,775 Gal 40 # Linear Gel. Tail Brady Sand with 24,000 # resin coated sand.**

16,000 gals Pad
1,000 gals 1 ppg
2,000 gals 2 ppg
3,000 gals 3 ppg
5,000 gals 4 ppg
5,000 gals 5 ppg
10,000 gal. ppg
4,000 gals 6 ppg (Resin Sand)
5,775 gals Flush

Max Pressure 3000 psi
Average rate 40 BPM

6. **Shut well in overnight to allow resin coating to cure.**
7. **Flow back. RIH with 2-3/8" TBG to 5922'. Cleanout if necessary. Swab/flow test Mesaverde interval. NDBOP, NUWH, RDMOSU. Obtain shut-in pressure and fluid level. Put Mesaverde on production and test.**
8. **If Mesaverde completion is successful, notify NMOCD Aztec District office with our intent to commingle. MIRUSU, NDWH, NUBOP. POOH with 2-3/8" TBG. RIH w/ retrieving head on 2-3/8" TBG and POOH w/ RBP @ 6020'. GIH and cleanout to PBTD. POOH. RIH w/ rods, pump and 2-3/8" production tubing. NDBOP, NUWH, RDMOSU. Put well on downhole commingled production (MV and GP/DK). Obtain stable commingled oil, gas, and water production rates for allocation formula.**
9. **If Mesaverde completion is unsuccessful, cement squeeze Mesaverde. MIRUSU, NDWH, NUBOP. POOH RIH w/ retrieving head on 2-3/8" tubing and POOH w/ RBP @ 6020'. GIH and cleanout to PBTD. POOH. RIH with Gallup/Dakota production equipment. NDBOP, NUWH, RDMOSU. Return well to G/DK production.**