DHC 4-15-96
DIVISION
1228
PM 8 52

Manzano Oil Corporation

P.O. Box 2107
Roswell, New Mexico 88202-2107
(505) 623-1996
FAX (505) 625-2620

March 25, 1996

Mr. David Catanach
New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87501

Re: "SV" Bobwhite Federal #1
Unit L, Sec 4, T19S, R34E
Lea County, New Mexico

Dear Mr. Catanach:

Your administrative approval is requested to permit down-hole commingling of Bone Springs and Delaware production per Rule 303-C-2 on the above captioned well.

There is no evidence of fluid incompatibility and we do not expect any waste or reservoir damage due to down-hole commingling in the well bore. Ownership in the two pools is common and correlative rights will not be violated. Down-hole commingling will allow the recovery of additional hydrocarbons from this well. Both zones are unable to flow and will have to be artificially lifted by rod and beam pump.

The subject well was drilled and completed in the Bone Springs formation. It was then recompleted in the Delaware formation. Currently the well is producing from the Delaware formation.

Attached please find pertinent data regarding this application as outlined in Rule 303-C-2. If you have any questions or need any further information regarding this application, please feel free to call.

Very truly yours,

David Sweeney

David Sweeney
Drilling & Production Superintendent

DS:ah

Enclosures

RULE 303-C-2 INFORMATION

(A) Manzano Oil Corporation
P.O. Box 2107
Roswell, NM 88202-2107

(B) "SV" Bobwhite Federal #1
Unit L, Sec 4, T19S, R34E
Lea County, New Mexico
Bone Springs/Delaware

(C) Acreage plat is attached.

(D) A current C-116 is attached.

(E) Since this is a newly drilled and completed well, neither zone has enough production history for 12 months of production data, therefore, we are requesting that this requirement be waived. The Bone Springs production decline indicates a limited reservoir and should continue at a decline of 50-75% the first year and level off at a 20-25% decline thereafter. The Delaware should see a typical decline of 30-50% the first year and level off at a 15% decline thereafter. A well history report is attached.

(F) Bottom Hole Pressure Data:

Bone Springs:	Datum -5927,	Pressure at Datum	1350 psi
Delaware:	Datum -3945,	Pressure at Datum	1235 psi

Bone Springs BHP calculated from DST.
Delaware BHP calculated.

(G) Fluid characteristics:

There is no evidence of fluid incompatibility. See attached water & oil analysis.

RULE 303-C-2 INFORMATION (Continued)

(H) Value of commingled fluids:

	BOPD	API GRAVITY	$/BBL	REV/DAY
Bone Springs Oil	35	36.0	$18.23	$ 638.05
Delaware Oil	32	38.0	$18.23	$ 546.90
Total	67			$1,184.95

(I) Formula for allocation:

Based on well test, the Bone Springs is allocated 52% for oil and 46% for gas. The Delaware is allocated 48% for oil and 54% for gas.

	BOPD	TOTAL COMMINGLED PRODUCTION		PERCENT
Bone Springs Oil	35	67	=	52%
Delaware Oil	32	67	=	48%

	MCFGPD	TOTAL COMMINGLED PRODUCTION		PERCENT
Bone Springs Gas	25	54	=	46%
Delaware Gas	29	54	=	54%

(J) All offset operators have been notified by copy of the attached letter. A copy of this application was sent to the Bureau of Land Management in Carlsbad, New Mexico.

Unocal Corporation, Attn: Mike Nixson, P.O. Box 3100, Midland, Texas 79702
Bureau of Land Management, P.O. Box 1778, Carlsbad, New Mexico 88220

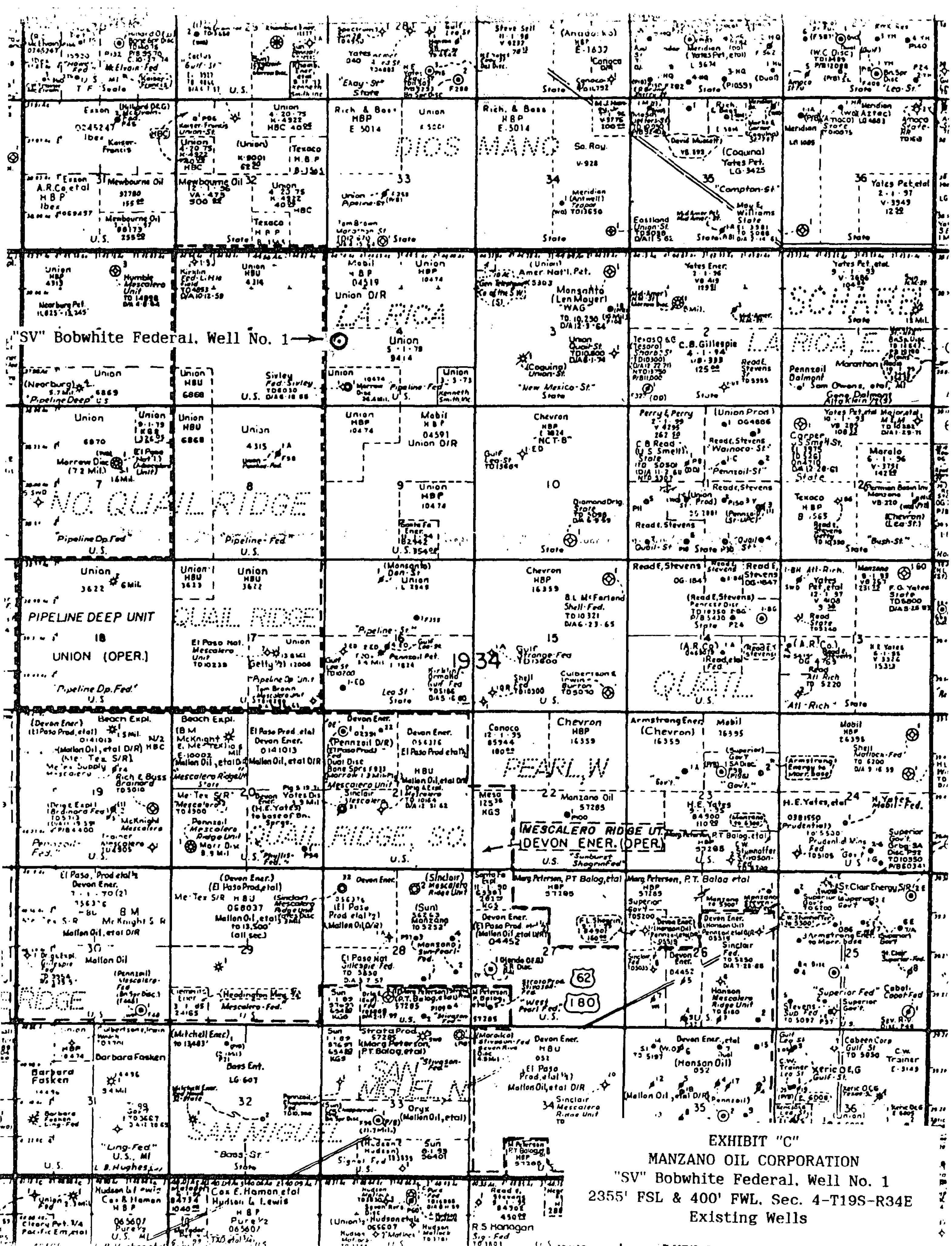


EXHIBIT "C"

MANZANO OIL CORPORATION

"SV" Bobwhite Federal, Well No. 1

2355' FSL & 400' FWL, Sec. 4-T19S-R34E

Existing Wells

EXHIBIT "D"

Submit 2 copies to Appropriate District Office.
DISTRICT I
P.O. Box 1980, Hobbs, NM 88240
DISTRICT II
P.O. Drawer DD, Artesia, NM 88210
DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-116
Revised 1/1/89

GAS - OIL RATIO TEST

Operator	Pool	County
Manzano Oil Corporation	Wildcat Delaware	Lea

Address	TYPE OF TEST - (X)			
P.O. Box 2107, Roswell, NM 88202-2107	Scheduled [X]	Completion [ ]	Special [X]	

LEASE NAME	WELL NO.	LOCATION				DATE OF TEST	STATUS	CHOKE SIZE	TBG. PRESS.	DAILY ALLOW/- ABLE	LENGTH OF TEST HOURS	PROD. DURING TEST				GAS - OIL RATIO CU.FT/BBL.
		U	S	T	R							WATER BBLS.	GRAV. OIL	OIL BBLS.	GAS M.C.F.	
"SV" Bobwhite Federal	1	L	4	19S	34E	3/19/96	P				24	33	37.0	32	25	781

Instructions:

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Division.

Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60° F. Specific gravity base will be 0.60.

Report casing pressure in lieu of tubing pressure for any well producing through casing.

(See Rule 301, Rule 1116 & appropriate pool rules.)

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

David Sweeney

Signature

David Sweeney, Drlg & Prod Supt

Printed name and title

3/25/96 (505) 623-1996

Date Telephone No.

EXHIBIT "D"

Submit 2 copies to Appropriate
District Office.
DISTRICT I
P.O. Box 1980, Hobbs, NM 88240
DISTRICT II
P.O. Drawer DD, Artesia, NM 88210
DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-116
Revised 1/1/89

GAS - OIL RATIO TEST

Operator	Pool	County
Manzano Oil Corporation	E.K. Bone Spring	Lea

Address	TYPE OF TEST - (X)	Scheduled	Completion	Special
P.O. Box 2107, Roswell, NM 88202-2107		[ ]	[ ]	[X]

LEASE NAME	WELL NO.	LOCATION U	S	T	R	DATE OF TEST	STATUS	CHOKE SIZE	TBG. PRESS.	DAILY ALLOW/-ABLE	LENGTH OF TEST HOURS	PROD. DURING TEST WATER BBLS.	GRAV. OIL	OIL BBLS.	GAS M.C.F.	GAS - OIL RATIO CU.FT/BBL.
"SV" Bobwhite Federal	1	L	4	19S	34E	1/30/96	P				24	3	38.0	35	26	743

Instructions:

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Division.

Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60° F. Specific gravity base will be 0.60.

Report casing pressure in lieu of tubing pressure for any well producing through casing.

(See Rule 301, Rule 1116 & appropriate pool rules.)

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

David Sweeney

Signature

David Sweeney, Drlg & Prod. Supt

Printed name and title

March 25, 1996 (505) 623-1996

Date Telephone No.

EXHIBIT "E"

WELL HISTORY REPORT

DATE: 3/19/96

OPERATOR: Manzano Oil Corporation

WELL NAME & WELL NO.: "SV" Bobwhite Federal #1

LEASE NAME: "SV" Bobwhite Federal

API NUMBER: 30-025-32963

LEASE DESIGNATION & SERIAL NO.: NM-9414

LOCATION: Unit L, NW/4SW/4, 2355'FSL & 400'FWL

SECTION: 4, **TOWNSHIP:** 19 South, **RANGE:** 34 East

COUNTY: Lea, **STATE:** New Mexico

FIELD: E.K. Bone Spring

ELEVATION: 3874'GR

DRILLING CONTRACTOR: ZiaDril, Inc., Rig #3

TYPE OF DRILLING RIG: Rotary

SPUD DATE: 5/22/95

T.D. DATE: 7/25/95

RIG RELEASED: 7/29/95

WELL COMPLETED: 10/20/95

CASING PROGRAM: 5/23/95 - 13-3/8" - 48,54.5 & 61# - Set @ 400' we/415 sx Cl C. Circulate to surface.
6/8/95 - 9-5/8" - 36 & 40# - Set @ 5335' w/2100 sx Lite + 200 sx Cl C. Circulate 300 sx to surface.
7/29/95 - 5-1/2" - 17 & 20# - Set @ 14,547' w/631 sx Cl H + 1005 sx Cl H.

TOTAL DEPTH: 14,809'

P.B. DEPTH: 11,735'

TOP OF CEMENT: 7,200'CBL

DRILLSTEM TEST: DST #1 Bone Spring, DST #2 Wolfcamp

CORED: No

LOGGING PROGRAM: GR/CNL, CBL-CCL-GR, DLL, Density, Sonic Logs

PERFORATIONS: Devonian Open Hole (14,586-14,809') CIBP @ 14,490' w/35' cmt
Bone Spring (9745-9801') (9697-9703') (9536-9554') (8337-8348') (8059-8064')
Delaware (7801-19')

WELL HISTORY (CONTINUED)
PAGE 2

STIMULATION: 8/19/95 - Open hole (14,567-14,640') 500 gal 20% NEFE acid
8/23/95 - Open hole (14,640-14,678') 1000 gal 20% NEFE acid
9/05/95 - Open hole (14,567-14,678') 5000 gal 20% NEFE acid
9/21/95 - Open hole (14,678-14,809') CIBP set @ 14,490' w/35'cmt
9/27/95 - Bone Spring (9745-9801') 2000 gal 15% NEFE
9/30/95 - (9745-9801') Frac w/35k# Hydrogel w/65k# 16/30 Sd + 27k# 16/30 Sure D-C resin coated sand
10/06/95 & 10/07/95 - Bone Spring (9697-9703') 4000 gal 20% acid
12/21/95 - Bone Spring (9536-9554')
12/28/95 & 12/29/95 - (8337-8348') 4000 gal 20% NEFE
1/03/96 & 1/04/96 - Bone Spring (8058-8064') 2500 gal 20% NEFE
2/10/96 - Delaware (7809-7819') 1000 gal 10% NEFE

GAS PURCHASER: Conoco

OIL PURCHASER: Unocal

WELL STATUS: Producing

GEOLOGIST:

GEOLOGICAL FORMATION TOPS:

Delaware	5,930	Atoka	12,466
Bone Spring	7,920	Morrow LS	12,827
1st Bone Spring	9,196	Morrow CLSTS	13,180
2nd B.S. Carb	9,536	Miss LS	13,859
2nd Bone Spring	9,726	Devonian	14,580
3rd Bone Spring	10,512		
Wolfcamp	10,800		
Lower Wolfcamp	11,078		
Cisco	11,916		
Strawn	12,206		

PRESENT

EXHIBIT "E"
Page Three

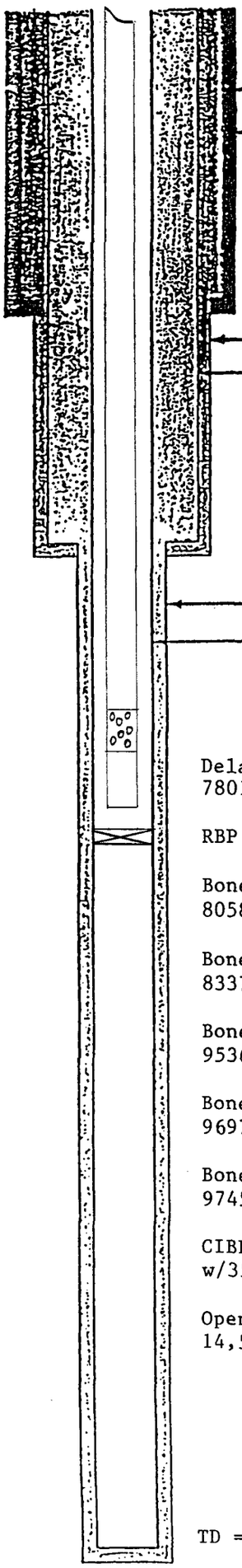
WELL BORE SKETCH

OPERATOR/LEASE/WELL: Manzano Oil Corporation, "SV" Bobwhite Federal #1

LOCATION: Unit L, NW/4SW/4, 2355'FSL & 400'FWL, Sec 4, T19S, R34E, Lea County, NM

FIELD/POOL: E.K. / Bone Spring

PLUG BACK DEPTH: 14,490' **KB:** 3,892' **ELEVATION:** 3,874'GR



Hole Size: 17-1/2"

SURFACE CASING:
Size: 13-3/8" **Weight:** 48,54.5&61 **Grade:** J-55
Set at: 400' **w/** 415 **Sacks cement**
Circulate: 100 **Sacks to surface**
Remarks:

Hole Size: 12-1/4"

INTERMEDIATE CASING:
Size: 9-5/8" **Weight:** 36 & 40 **Grade:** J-55
Set at: 5335' **w/** 2300 **Sacks cement**
Circulate: 300 **Sacks to surface**
Cement Top: Calc _____ **Temp Survey:** _____
Remarks:

Hole Size: 7-7/8"

PRODUCTION CASING:
Size: 5-1/2" **Weight:** 17 & 20 **Grade:** N-80
Set at: 14,547' **w/** 1636 **Sacks cement**
Cement Top: Calc: 7200'CBL **Temp Survey:** _____
Remarks: DV tool @ 11,515'
1st stage = 631 sx C1 H
2nd stage = 1005 sx C1 H

Delaware
7801-19'

RBP @ 7950'

Bone Spring
8058-64'

Bone Spring
8337-48'

Bone Spring
9536-9554'

Bone Spring
9697-9703'

Bone Spring
9745-9801'

CIBP @ 14,490'
w/35' cement

Open Hole
14,586-14,809'

TUBING:
Size: 2-7/8" **Weight:** 6.5 **Grade:** N-80
Number of Jts: 250 **Set at:** 7884'
Packer set at:
Bottom Arrangement:

RODS:
Size: 3/4, 7/8 & 1 **Number:** 156-3/4;83-7/8;82-1
Gas Anchor Set at:
Pump set at: 7853'
Arrangement:

TD = 14,809'

PROPOSED

EXHIBIT "E"
Page Four

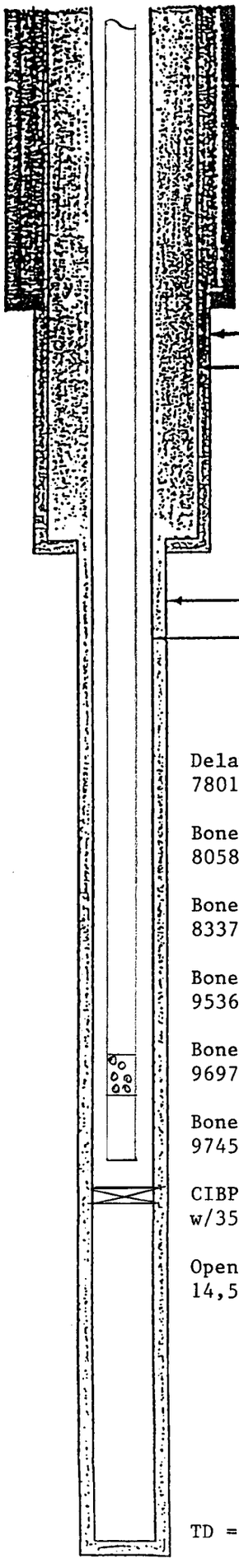
WELL BORE SKETCH

OPERATOR/LEASE/WELL: Manzano Oil Corporation, "SV" Bobwhite Federal #1

LOCATION: Unit L, NW/4SW/4, 2355'FSL & 400'FWL, Sec 4, T19S, R34E, Lea County, NM

FIELD/POOL: E.K. / Bone Spring

PLUG BACK DEPTH: 14,490' **KB:** 3,892' **ELEVATION:** 3,874'GR



Hole Size: 17-1/2"

SURFACE CASING:
Size: 13-3/8" **Weight:** 48,54.5&61 **Grade:** J-55
Set at: 400' **w/** 415 **Sacks cement**
Circulate: 100 **Sacks to surface**
Remarks:

Hole Size: 12-1/4"

INTERMEDIATE CASING:
Size: 9-5/8" **Weight:** 36 & 40 **Grade:** J-55
Set at: 5335' **w/** 2300 **Sacks cement**
Circulate: 300 **Sacks to surface**
Cement Top: Calc _____ **Temp Survey:** _____
Remarks:

Hole Size: 7-7/8"

PRODUCTION CASING:
Size: 5-1/2" **Weight:** 17 & 20 **Grade:** N-80
Set at: 14,547' **w/** 1636 **Sacks cement**
Cement Top: Calc: 7200'CBL **Temp Survey:** _____
Remarks: DV tool @ 11,515'
1st stage = 631 sx C1 H
2nd stage = 1005 sx C1 H

Delaware
7801-19'

Bone Spring
8058-64'

Bone Spring
8337-48'

Bone Spring
9536-9554'

Bone Spring
9697-9703'

Bone Spring
9745-9801'

CIBP @ 14,490'
w/35' cement

Open Hole
14,586-14,809;

TUBING:
Size: 2-7/8" **Weight:** 6.5 **Grade:** N-80
Number of Jts: 312 **Set at:** 9850'
Packer set at:
Bottom Arrangement:

RODS:
Size: 3/4, 7/8, 1 **Number:**
Gas Anchor Set at:
Pump set at: 9850'
Arrangement:

TD = 14,809'

EXHIBIT "F"

"SV" Bobwhite Federal #1
Oil Production to Date

Month		Bone Spring	Delaware
October	1995	604.12	-0-
November		1,136.53	-0-
December		597.98	-0-
January	1996	1,642.40	-0-
February		(.82)	757.60
March		-0-	1,044.99
Total Production to Date		3,980.21	1,802.59

Hobbs District Lab

Date: 3/6/96

Well: Bob White #1

Company: Manzano

Subject: Analysis of mixing Delaware and BoneSprings formation water based on previously ran water analysis.

Ion determinations were taken from the previous analysis's and ratioed in the following manner:

1). 25% Delaware / 75% BoneSprings

2). 50% Delaware / 50% BoneSprings

3). 75% Delaware / 25% BoneSprings

Scaling Tendencies were as follows:

Ratio #	*Calcium Carbonate*	*Calcium Sulfate*
1	Probable	Possible
2	Probable	Probable
3	Probable	Probable

Please note that the above is a rough approximation. Some ion concentrations vary with pH (which cannot be averaged). Without actually physically mixing the two waters together and determining its characteristics it's difficult to assess the true scaling tendencies but based on the high concentrations of scaling ions present in the separate waters its likely scaling will occur when mixed.

BJ SERVICES

WATER ANALYSIS

Date: 2/12/96
Company: Manzano
Well Name: Bob White Fed #1
County: Lea
State: NM
Station: Hobbs

Report #: 1560
Sample #: Tank
Formation: Brushy Canyon
Depth: 7809-7819
H_2O Type: Produced
Requested By:

pH: 5.81
Temperature (°F): 70
Specific Gravity: 1.185

Sulfide: absent
Reducing Agents:
S.G. @ 60°F: 1.187

CATIONS	mg/l	me/l	ppm
Sodium (calc)	9632	419	8128
Calcium	21200	1060	17890
Magnesium	480	40	480
Iron (Fe++)	6.00	0.22	5.06
Iron (Fe+++)	0.00	0.00	0.00
ANIONS			
Chloride	52000	1465	43882
Sulfate	2400	50	2025
Bicarbonate	244	4	206
Phosphate			0.0
Total Dissolved Solids	85962		72542
Total Hardness as $CaCO_3$	55000		46414

Calcium Carbonate Scale: PROBABLE

Calcium Sulfate Scale: PROBABLE

Equivilent NaCl Concentration: 70884

Oil Sample : 36° API

Analyzed by:

BJ SERVICES

WATER ANALYSIS

Date: 2/12/96
Company: Manzano
Well Name: Bob White Fed #1
County: Lea
State: NM
Station: Hobbs

Report #: 1559
Sample #: Water Tank
Formation: BoneSprings
Depth: 8058-9800
H_2O Type: Produced
Requested By:

pH: 6.62
Temperature (°F): 70
Specific Gravity: 1.075

Sulfide: absent
Reducing Agents:
S.G. @ 60°F: 1.077

CATIONS	mg/l	me/l	ppm
Sodium (calc)	4708	205	4380
Calcium	6400	320	5953
Magnesium	480	40	480
Iron (Fe++)	9.00	0.32	8.37
Iron (Fe+++)	0.00	0.00	0.00
ANIONS			
Chloride	18000	507	16744
Sulfate	2400	50	2233
Bicarbonate	464	8	432
Phosphate			0.0
Total Dissolved Solids	32461		30196
Total Hardness as $CaCO_3$	18000		16744

Calcium Carbonate Scale: PROBABLE

Calcium Sulfate Scale: PROBABLE

Equivilent NaCl Concentration: 28906

Oil Sample : 38° API

Analyzed by: