

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

N.M. Oil Cons. Division

P.O. Box 1980  
Hobbs, NM 88241

FORM APPROVED  
Budget Bureau No. 1004-0135  
Expires: March 31, 1993

**SUNDRY NOTICES AND REPORTS ON WELLS**

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.  
Use "APPLICATION FOR PERMIT—" for such proposals

**SUBMIT IN TRIPLICATE**

1. Type of Well  
☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator  
**Mitchell Energy Corporation**

3. Address and Telephone No.  
**P.O. Box 4000, The Woodlands, Texas 77387-4000 (713) 377-5500**

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)  
**Unit Letter F, 1980' FNL and 1980' FWL  
Sec. 31, T19S, R33E**

5. Lease Designation and Serial No.

**NM-67111**

6. If Indian, Allottee or Tribe Name

**N/A**

7. If Unit or CA, Agreement Designation

**N/A**

8. Well Name and No.

**Geronimo Federal No. 4**

9. API Well No.

**30 025 31315**

10. Field and Pool, or Exploratory Area

**Geronimo (Delaware) and  
Gem (Bone Spring)**

11. County or Parish, State

**Lea County, NM**

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

- ☐ Notice of Intent  
☒ Subsequent Report  
☐ Final Abandonment Notice

TYPE OF ACTION

- ☐ Abandonment  
☐ Recompletion  
☐ Plugging Back  
☐ Casing Repair  
☐ Altering Casing  
☒ Other Request for approval  
to commingle  
☐ Change of Plans  
☐ New Construction  
☐ Non-Routine Fracturing  
☐ Water Shut-Off  
☐ Conversion to Injection  
☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\*

Mitchell request that we be granted approval to downhole commingle the Geronimo (Delaware) and Gem (Bone Spring) formations in the subject well. To aid you in processing this request, I have attached the approval letter from the State of New Mexico OCD along with various other information.

RECEIVED  
JUL 29 11 50 AM '96  
OIL & GAS  
ARTIFICIAL LIFT  
SECTORS

4. I hereby certify that the foregoing is true and correct

Signed George Mullen

Title **George Mullen  
Regulatory Affairs Specialist**

Date **7-26-96**

(This space for Federal or State office use)

**(ORIG. SGD.) ALEXIS C. SWOBODA**

Approved by  
Conditions of approval, if any:

Title **PETROLEUM ENGINEER**

Date **8/22/96**

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

\*See Instruction on Reverse Side

Form 3160-5  
(June 1990)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

SUNDRY NOTICES AND REPORTS ON WELLS

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Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

Mitchell Energy Corporation

3. Address and Telephone No.

PO Box 4000; The Woodlands, Tx 77387-4000

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Unit Letter F: 1980' FNL and 1980' FWL of Section 31  
Township 19S, Range 33E

FORM APPROVED

Budget Bureau No. 1004-0135

Expires: March 31, 1993

5. Lease Designation and Serial No.

NM-67111

6. If Indian, Allottee or Tribe Name

N/A

7. If Unit or CA, Agreement Designation

N/A

8. Well Name and No.

Geronimo Federal 4

9. API Well No.

30-025-31315

10. Field and Pool, or Exploratory Area

Geronimo Delaware and  
Gem Bone Springs

11. County or Parish, State

Lea County, New Mexico

2. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

☐ Notice of Intent  
☐ Subsequent Report  
☐ Final Abandonment Notice

TYPE OF ACTION

☐ Abandonment  
☐ Recompletion  
☐ Plugging Back  
☐ Casing Repair  
☐ Altering Casing  
☒ Other Commingled Delaware  
and Bone Springs  
☐ Change of Plans  
☐ New Construction  
☐ Non-Routine Fracturing  
☐ Water Shut-Off  
☐ Conversion to Injection  
☐ Dispose Water

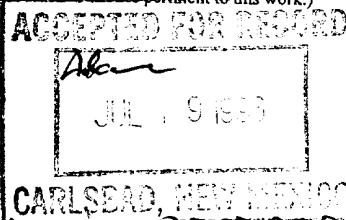
(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

See Attachment

OPERATOR:

COMMINGLING APPROVAL IS REQUIRED.  
YOU NEED TO SUBMIT APPLICATION  
FOR APPROVAL.



RECEIVED

JUL 25 1996

PRODUCTION  
REGULATORY AFFAIRS

I hereby certify that the foregoing is true and correct

Signed Bob Paulk Title Staff Production Engineer Date 6-12-96

(This space for Federal or State office use)

Approved by \_\_\_\_\_ Title \_\_\_\_\_ Date \_\_\_\_\_  
Conditions of approval, if any:

18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

\*See Instruction on Reverse Side

**Geronimo Federal Well No. 4**  
**Lea County, New Mexico**

Sundry Notice

05/10/96 POOH w/ rods and tubing. RIH w/ CIBP to 3710' and RTTS tool. Located hole in casing between 3553-3570'.

05/11/96 Located second hole in casing between 3187-3218' w/ RTTS tool.

05/12/96 Set CIBP at 3455' and cemented interval 3187-3218' with 300 sacks of Premium Plus w/ 350 SCF nitrogen per bbl slurry. Reversed out 1 bbl of cement.

05/13-14/96 DO 76' of cement and pressure tested interval 3187-3218' to 1000 psi for 30 minutes. Swab fluid level to 3000'.

05/15/96 No fluid entry overnight. DO CIBP at 3455'. Pressure tested casing. Interval 3553-3570' still leaking with PIR of 1/4 BPM at 1300 psi..

05/16/96 Spot 20 sacks 4.3 bbls slurry Micro-Matrix cmt w/ 1% CaCl<sub>2</sub>. Pressured up to 900 psi w/ an estimated 1 bbls of cmt out of the casing.

05/17-18/96 WO cement.

05/19/96 DO cement to 3570'. PIR 1/4 BPM at 800 psi.

05/20/96 Spot 50 sacks of Class C w/ 2% CaCl<sub>2</sub> w/ an estimated 3/4 bbls of cmt out of the casing. Pressure tested to 2000 psi.

05/21-22/96 DO cement. Pressure tested interval 3553-3570' to 1000 psi. Leaked off 100 psi in 15 minutes. Swabbed FL to 3200'. Fluid entry 200' in 2 hours. DO CIBP at 3710'.

05/22-25/96 DO cement retainer at 7670', CIBP at 7805' and CIBP at 8984'.

05/26/96 RIH w/ 2-7/8" tubing w/ EOT at 9320' and tubing anchor at 7544'.

05/27-28/96 SD for holiday.

05/29/96 RIH w/ rods and 2-1/2"x1-1/2"x24' RHBC pump.

05/30-6/5/96 Pumped 1234 bbls water.

06/06/96 Pumped 16 BOPD, 162 BWPD at 5 SPM x 168" stroke.

10-10-90  
(October 1990)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

SUBMIT IN DUPLICATE

FOR APPROVAL  
DATE 10/31/91

OPERATOR'S COPY  
DESIGNATION AND SERIAL NO.  
NM-67111

WELL COMPLETION OR RECOMPLETION REPORT AND LOG \*

1. TYPE OF WELL: OIL WELL ☒ GAS WELL ☐ DRY ☐ Other \_\_\_\_\_  
2. TYPE OF COMPLETION: NEW WELL ☐ WORK OVER ☐ DEEPEN ☐ FLAG BACK ☐ DIFF. EMER. ☒ Other commingle zones

3. NAME OF OPERATOR  
Mitchell Energy Corporation

4. ADDRESS AND TELEPHONE NO.  
PO Box 4000; The Woodlands, TX 77387-4000

5. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)  
At surface 1980' FNL and 1980' FWL

RECEIVED

JUL 25 1996

PRODUCTION  
REGULATORY AFFAIRS

At top prod. interval reported below

At total depth

14. PERMIT NO. DATE ISSUED

12. COUNTY OR PARISH  
Lea

13. STATE  
NM

15. DATE SPUDDED 16. DATE T.D. REACHED 17. DATE COMPL. (Ready to prod.) 18. ELEVATIONS (DP, RKB, RT, GR, ETC.) \* 19. ELEV. CASINGHEAD  
5-30-96

20. TOTAL DEPTH, MD & TVD 21. PLUG, BACK T.D., MD & TVD 22. IF MULTIPLE COMPLETIONS, HOW MANY 23. INTERVALS DRILLED BY ROTARY TOOLS CABLE TOOLS  
10,295

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD) \*  
7592-7836' Delaware  
9004-9270' Bone Springs

25. TYPE ELECTRIC AND OTHER LOGS RUN 26. WAS DIRECTIONAL SURVEY MADE 27. WAS WELL CORRED

28. CASING RECORD (Report all strings set in well)					
CASING SIZE/GRADE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	TOP OF CEMENT, CEMENTING RECORD	AMOUNT PULLED

29. LINER RECORD					30. TUBING RECORD		
SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT *	SCREEN (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)
					2-7/8"	9320'	

31. PERFORATION RECORD (Interval, size and number)

See attachment

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED

33. PRODUCTION							
DATE FIRST PRODUCTION		PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump)				WELL STATUS (Producing or shut-in)	
6-6-96		Pumping 2-1/2" X 1-1/2" x 24' RHBC				producing	
DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
6-11-96	24	open	→	30	1	183	TSTM
FLOW, TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)	
20	10	→	30	1	183	43	

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)

35. LIST OF ATTACHMENTS  
perforation history

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED Ralph Lawh TITLE Staff Production Engineer DATE 6-13-96

\*(See Instructions and Spaces for Additional Data on Reverse Side)

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**Geronimo Federal Well No. 4**  
**Lea County, New Mexico**

**Perforation History:**

7592-7595'	(.4")	4 shots	03/05/93
7601-7618'	(.4")	18 shots	03/06/93
7680-7692'	(.4")	4 shots	03/06/93
7698-7701'	(.4")	7 shots	03/06/93
9004-9078'	(.4")	26 shots	09/10-12/91
9158-9270'	(.4")	26 shots	09/10-12/91



NEW MEXICO ENERGY, MINERALS  
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION  
2040 South Pacheco Street  
Santa Fe, New Mexico 87505  
(505) 827-7131

ADMINISTRATIVE ORDER DHC-1226

Mitchell Energy Corporation  
P.O. Box 4000  
The Woodlands, Texas 77387-4000

RECEIVED

MAY - 1 1996

Attention: Mr. George Mullen

PRODUCTION  
REGULATORY AFFAIRS

*Geronimo Federal Well No.4  
Unit F, Section 31, Township 19 South, Range 33 East, NMPM,  
Lea County, New Mexico.  
Geronimo Delaware Pool (27400) and  
Gem Bone Spring Pool (27220) Pools*

Dear Mr. Mullen:

Reference is made to your recent application for an exception to Rule 303.A. of the Division Rules and Regulations to permit the above described well to commingle production from the subject pools in the wellbore.

It appearing that the subject well qualifies for approval for such exception pursuant to the provisions of Rule 303.C., and that reservoir damage or waste will not result from such downhole commingling, and correlative rights will not be violated thereby, you are hereby authorized to commingle the production as described above and any Division Order which authorized the dual completion and required separation of the zones is hereby placed in abeyance.

In accordance with the provisions of Rule 303.C., the daily allowable producing rates from the subject well are hereby established as follows:

Oil 187 B/D	Gas 374 Mcf/D	Water 374 B/D
-------------	---------------	---------------

Assignment of allowable to the well and allocation of production from the well shall be on the following basis:

Geronimo Delaware Pool	Oil 60%	Gas 60%
Gem Bone Spring Pool	Oil 40%	Gas 40%

FURTHER: The operator shall notify the Hobbs District Office of the Division upon implementation of the commingling process.

ORIG: CENTRAL RECORDS MNDIN

XC: ED EARLES / JEFF WILLIFORD MND4N

PAT NOYES MND4N

LARRY CUNNINGHAM MND4N

CAROL OSBORNE MNDIN

SUSAN NORMAN MND3N

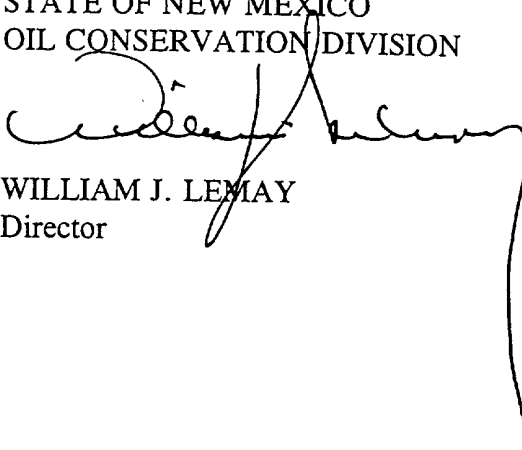
*Administrative Order DHC-1226*  
*Mitchell Energy Corporation*  
*April 23, 1996*  
*Page 2*

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Pursuant to Rule 303.H., the commingling authority granted by the order may be rescinded by the Division Director if, in his opinion, conservation is not being best served by such commingling.

Approved at Santa Fe, New Mexico on this 23rd day of April, 1996.

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION



WILLIAM J. LEMAY  
Director

S E A L

WJL/BES

cc: Oil Conservation Division - Hobbs  
Bureau of Land Management - Carlsbad

**VIA FEDERAL EXPRESS**

March 14, 1996

Mr. William J. Lemay  
Oil Conservation Division  
2040 S. Pacheco  
Santa Fe, New Mexico 87505

Re: GERONIMO FEDERAL WELL NO. 4  
Geronimo (Delaware) Pool  
Gem (Bone Spring) Pool  
Lea County, New Mexico

Dear Mr. Lemay:

Mitchell Energy Corporation hereby respectfully requests an exception to Rule 303-A to downhole commingle the Delaware and Bone Spring zones in the subject well.

To aid you in processing this request, I have enclosed, in duplicate, the following:

- |  |  |
|--|--|
| 1) Present Wellbore Diagram                | 6) Proposed Allocation Formula   |
| 2) Proposed Wellbore Diagram               | 7) Plat  |
| 3) Well Chronological                      | 8) Memo stating that royalty and working interests are common for both zones |
| 4) Water Analysis for both zones           | 9) Certificate of Service  |
| 5) Production Decline Curves for each zone |  |

Should you require additional information or if I can be of any further help in this matter, kindly advise.

Very truly yours,

MITCHELL ENERGY CORPORATION

Original Signed By  
GEORGE MULLEN

George Mullen  
Regulatory Affairs Specialist

GM:mw  
303-Altr.GM

Enc.

cc: Manzano Oil Corporation P.O. Box 2107 Roswell, NM 88202	Bureau of Land Management 620 East Greene St. Carlsbad, NM 88220	Oil Conservation Division P.O. Box 1980 Hobbs, NM 88240
bcc: Mark Whitley - MND-4N Ed Earles - MND-4N Pat Noyes - MND-4N	Carol Osborne - MND-1N Central Records - MND-1N	



**Geronimo Federal #4**  
**Geronimo (Delaware)**  
**Lea Co., NM**

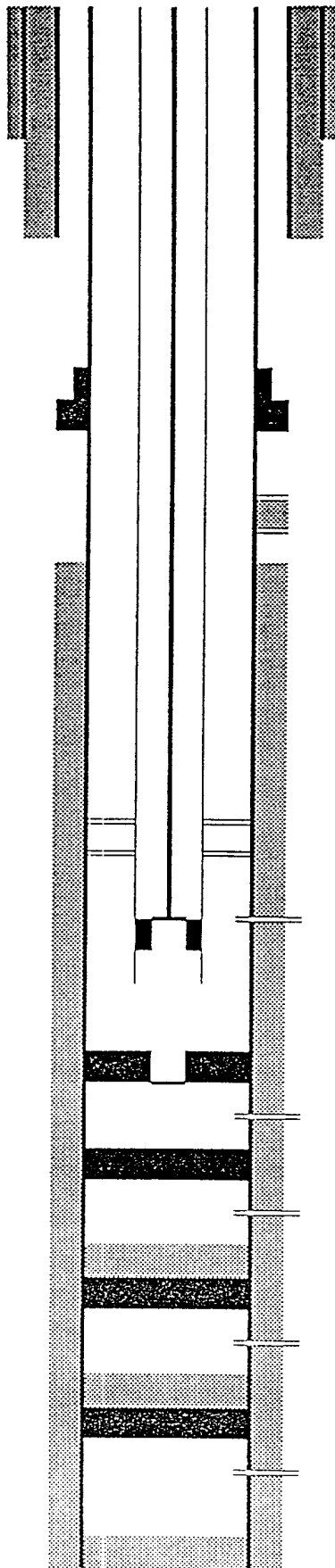
Unit F, Sec 31, T19S, R33E

JGC 6-29-95

Present

KB: 3588'

GL: 3577'



13-3/8", 54.4#, K-55, ST&C @ 538'

cmt w/ 525 sx

8-5/8", 32#, K-55, ST&C @ 2917'

cmt w/ 1100 sx

DV tool @ 3493', cmt 2nd stage w/ 200 sx

ECP @ 3495'

Casing leak 3566-97', sqz w/ 850 sx to 2500#

TOC @ 3630'

2-7/8", 6.5#, N-80, EUE 8rd tbg

Norris 97' 76 rod string

TA @ 7505'

7592-7618' (22 holes), Delaware

SN @ 7599'

EOT @ 7631'

Howco cmt retainer @ 7670' (never pumped through)

7680-7701' (11 holes), Delaware

CIBP @ 7805'

7822-36' (28 holes), Delaware

CIBP w/ 30' cmt @ 8984'

9004-9270' (52 holes), 1st Bone Spring sand

CIBP w/ 30' cmt @ 10325'

10342-67' (40 holes), Bone Spring

PBTD 10460'

5-1/2", 17#, K-55 & N-80, LT&C @ 10497'

cmt 1st stage w/ 1450 sx

Geronimo Federal #4  
Geronimo (Delaware & Bone Spr. )  
Lea Co., NM

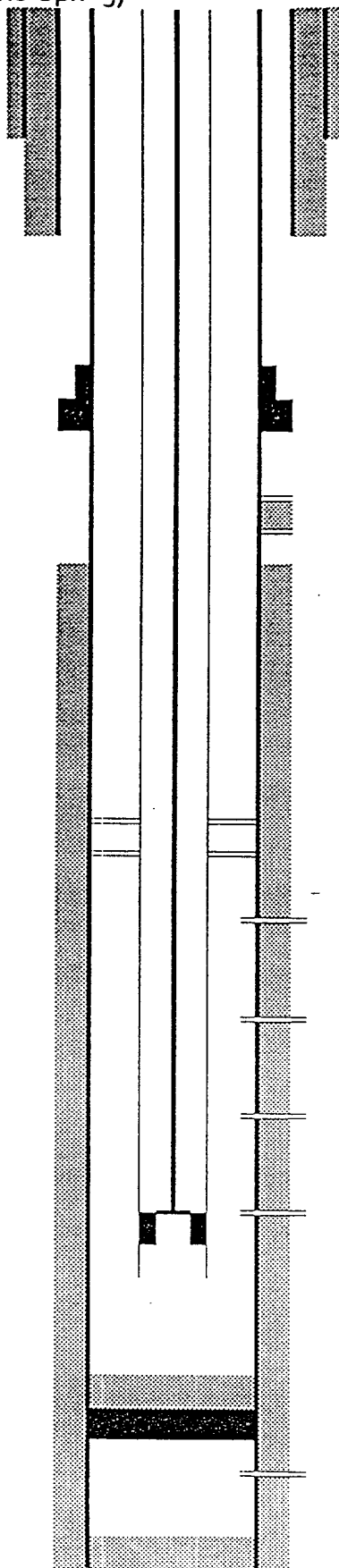
Unit F, Sec 31, T19S, R33E

JGC 6-29-95

Proposed

KB: 3588'

GL: 3577'



TD 10500'

13-3/8", 54.4#, K-55, ST&C @ 538'  
cmt w/ 525 sx

8-5/8", 32#, K-55, ST&C @ 2917'  
cmt w/ 1100 sx

DV tool @ 3493', cmt 2nd stage w/ 200 sx  
ECP @ 3495'

Casing leak 3566-97', sqz w/ 850 sx to 2500#

TOC @ 3630'

2-7/8", 6.5#, N-80, EUE 8rd tbg

Norris '97' 76 rod string

TA @ ±7500'

7592-7618' (22 holes), Delaware

7680-7701' (11 holes), Delaware

7822-36' (28 holes), Delaware

9004-9270' (52 holes), 1st Bone Spring sand

SN @ ±9300'

EOT @ ±9332'

CIBP w/ 30' cmt @ 10325'

10342-67' (40 holes), Bone Spring

PBTD 10460'

5-1/2", 17#, K-55 & N-80, LT&C @ 10497'  
cmt 1st stage w/ 1450 sx

Geronimo Federal #4  
Geronimo (Delaware)  
Lea Co., NM  
Well Chronological

8/07/95

Page 1

ate	Activity
7/10/91	Spud. 17-1/2" hole.
7/11/91	Set 13-3/8", 54.4#, K-55, ST&C @ 538'. Cmt w/ 525 sx C + 2% CaCl2 + 1/4#/sx FC. Cmt circ to surface.
7/15/91	Set 8-5/8", 32#, K-55, ST&C @ 2917'. 11" hole. Cmt w/ 800 sx lite + 15#/sx salt + 1/4#/sx FC followed by 300 sx C + 2% CaCl2. Cmt circ to surface.
8/06/91	TD 10500'. 7-7/8" hole. Ran temperature log showing fluid losses at approx. 3800' (dry drilling at TD).
8/08/91	Set 5-1/2", 17#, K-55 & N-80, LT&C @ 10497'. DV tool @ 3493'. ECP @ 3495'. PBTD 10415'. Cmt 1st w/ 1450 sx 50/50 Poz H + 2% gel + 0.7% CF2. Inflate ECP. Cmt 2nd w/ 200 sx C + 2% CaCl2.
8/16/91	Drill DV tool.
8/17/91	Drill cmt to 10460'. Test csg to 2000 psi.
8/19/91	Ran GR-CCL-CBL w/ TOC @ 3630'. No cmt above DV tool. Perf 10342-52' (20 holes) & 10357-67' (20 holes), Bone Spring.
8/20/91	Acidize 10342-67' (40 holes total) w/ 4000 gals 15% HCL.
8/21/91	Set Lufkin M640-305-168 pumping unit.
8/22/91	Ran 2-7/8" tbq for pumping hookup. EOT @ 10401', SN @ 10369', & TA @ 10212'.
8/23/91	Ran Norris '97' 76 rod string.
9/01/91	P-24, TP & CP 30 psi, 3 BO, 7 BW, well pumped off.
9/06/91	Began workover to move uphole.
9/09/91	Set CIBP @ 10325' capped w/ 30' cmt. Perf 1st Bone Spring sand 9158-68' (6 holes), 9184-90' (4 holes), 9198-9216' (10 holes), & 9265-70' (6 holes). Acidize 9158-9270' (26 holes total) w/ 1375 gals 15% HCL.
9/10/91	Frac 9158-9270' w/ 42000 gals 40# gel + 63000# 20/40 Ottawa + 42000# 16/30 resin coated.
9/11/91	Perf 9004-12 (9 holes) & 9046-78' (17 holes).

8/07/95

Page 2

Date	Activity
9/12/91	Acidize 9004-78' (26 holes total) w/ 1000 gals 15% HCL. Frac 9004-78' w/ 36500 gals 40# gel + 47000# 20/40 Ottawa + 30000# resin coated.
9/14/91	Ran 2-7/8" pumping hookup. EOT @ 8904', SN @ 8868', & TA @ 8551'.
9/16/91	Ran Norris '97' 76 rod string.
10/27/91	P-24, TP & CP 30 psi, 70 BO, 307 BW, 53 MCFPD, 12x144" SPM.
8/05/92	Install D-Jax POC.
2/18/93	Start Delaware recompletion.
2/19/93	Set CIBP @ 8984' capped w/ 30' cmt. Perf 7822-36' (28 holes). Acidize w/ 1500 gals 15% NeFe.
2/22/93	Frac 7822-36' w/ 13350 gals 35# linear gel + 26000 gals 35# x-link gel + 12840# 20/40 Ottawa (pipeline frac).
2/23/93	Ran 2-7/8" pumping hookup. EOT @ 7884', SN @ 7851' & TA @ 7784'. Ran rods & pump.
2/27/93	Well pumped off w/ no fluid entry.
3/04/93	Set CIBP @ 7805'. Perf 7680-92' (7 holes) & 7698-7701' (4 holes). Acidize 7680-7701' w/ 1500 gals 15% NeFe.
3/05/93	Perf 7592-95' (4 holes) & 7601-18' (18 holes).
3/06/93	Test csg from 7469' to surface to 3000 psi.
3/07/93	Ream through rough csg @ 3495' (ECP) w/ string mill. Acidize 7592-7618' w/ 2000 gals 15% NeFe.
3/08/93	Frac 7592-7701' (33 holes total) w/ 97000 gals gel + 221000# 16/30 Ottawa + 36000# 16/30 resin coated Ottawa.
3/11/93	Placed well on pump.
4/05/93	P-24, TP 100 psi, CP 20 psi, 47 BO, 45 MCFPD, 345 BW.
4/06/93	Set Howco cmt retainer @ 7670'. Rerun pumping hookup.
4/19/93	P-24, TP 50 psi, CP 30 psi, 55 BO, 235 BW, 40 MCFPD. FL @ 3560'.
5/06/93	Replace pump.

8/07/95

ate	Activity
9/19/93	Pull rod on pump parted. Replaced pump.
0/16/93	Tbg leak, collar 10 jts above SN.
1/22/94	Pony rod part in top of string.
2/22/94	Rod part, 208th 3/4" rod (body break). Replaced pump.
3/31/95	Start workover to repair casing leak.
4/03/95	Locate hole between 3566 - 3597'. Pump into leak @ 600 psi @ 2.8 BPM. Set cmt retainer @ 3441'. Annulus test to 1500 psi.
4/04/95	1st sqz w/ 200 sx C + 2% CaCl2. Well on vacuum, overflush w/ 30 bbls. 2nd sqz w/ 500 gals Flochek followed by 200 sx C + 2% CaCl2. Overflush w/ 10 bbls.
4/05/95	3rd sqz, pump into hole @ 850 psi @ 2.5 BPM w/ FW followed by 250 sx lite + 4% gel + 10# gilsonite followed by 200 sx c + 3% CaCl2. Sqz to 2500#. Held for 5 min. Reverse out 2 bbls cmt.
4/06/95	Drill retainer & 130' cmt to 3571'. Test sqz to 1000 psi for 15 minutes.
4/07/95	RIH w/ 2-7/8", 6.5#, N-80, EUE 8rd pumping hookup. EOT @ 7631', SN @ 7599', & TA @ 7505'. RIH w/ 2-1/2" x 1-1/2" x 26' RHBC pump & Norris '97' rod string.



**Champion**  
Technologies, Inc.

*Committed To Improvement*

DELAWARE

**Water Analysis Report**

**Customer:** Mitchell Energy

3/5/96

**Address:**

**City:**

**State:**

**Zip:**

**Attention:** Gary Butler

**Date Sampled:** 2/28/96

**CC1:** Herb Singleton

**Date Received:** 2/28/96

**CC2:** Greg Colburn

**SALESMAN NAME:** Mike Edwards

**LEASE:** Geronimo

**SAMPLE POINT:** Geronimo Fed #1

**WELL:** Geronimo Fed #1

**REMARKS:**

**CHLORIDE:** 168000

**SULFATE:** 380

**BICARBONATE:** 85

**CALCIUM:** 32481

**MAGNESIUM:** 4981

**IRON:** 6

**BARIUM:** 6

**STRONTIUM:** 1172

**MEASURED pH:** 6.21

**TEMPERATURE:** 86

**DISSOLVED CO2:** 395

**MOLE PERCENT CO2 IN GAS:**

**DISSOLVED H2S:** 0.0

**PRESSURE (PSIA):** 100

**SODIUM (PPM):** 61863

**IONIC STRENGTH:** 4.75

**CALCITE (CaCO3) SI:** -0.26

**CALCITE PTB:** N/A

**GYPSUM (CaSO4) SI:** -0.08

**GYPSUM PTB:** N/A

**BARITE (BaSO4) SI:** 0.94

**BARITE PTB:** 3.2

**CELESTITE (SrSO4) SI:** 0.61

**CELESTITE PTB:** 130.8

SI calculations based on Tomson-Oddo



**Champion**  
Technologies, Inc.

**Committed To Improvement**

BONE SPRING

**Water Analysis Report**

**Customer:** Mitchell Energy

3/5/96

**Address:**

**City:**

**State:**

**Zip:**

**Attention:** Gary Butler

**Date Sampled:** 2/28/96

**CC1:** Herb Singleton

**Date Received:** 2/28/96

**CC2:** Greg Colburn

**SALESMAN NAME:** Mike Edwards

**LEASE:** Geronimo

**SAMPLE POINT:** Geronimo #5

**WELL:** Geronimo #5

**REMARKS:**

**CHLORIDE:** 100000  
**SULFATE:** 529  
**BICARBONATE:** 146  
**CALCIUM:** 2325  
**MAGNESIUM:** 534  
**IRON:** 6  
**BARIUM:** 3  
**STRONTIUM:** 479  
**MEASURED pH:** 6.52  
**TEMPERATURE:** 86  
**DISSOLVED CO2:** 526  
**MOLE PERCENT CO2 IN GAS:**  
**DISSOLVED H2S:** 0.0  
**PRESSURE (PSIA):** 100

**SODIUM (PPM):** 61230

**IONIC STRENGTH:** 2.83

<b>CALCITE (CaCO3) SI:</b>	-1.99	<b>CALCITE PTB:</b>	N/A
<b>GYPSUM (CaSO4) SI:</b>	-1.02	<b>GYPSUM PTB:</b>	N/A
<b>BARITE (BaSO4) SI:</b>	0.58	<b>BARITE PTB:</b>	1.3
<b>CELESTITE (SrSO4) SI:</b>	0.23	<b>CELESTITE PTB:</b>	79.7

SI calculations based on Tomson-Oddo



**Champion**  
Technologies, Inc.

**Committed To Improvement**

DELAWARE

**Water Analysis Report**

**Customer:** Mitchell Energy

3/5/96

**Address:**

**City:**

**State:**

**Zip:**

**Attention:** Gary Butler

**Date Sampled:** 2/28/96

**CC1:** Herb Singleton

**Date Received:** 2/28/96

**CC2:** Greg Colburn

**SALESMAN NAME:** Mike Edwards

**LEASE:** Geronimo

**SAMPLE POINT:** Geronimo #9

**WELL:** Geronimo #9

**REMARKS:**

**CHLORIDE:** 154000

**SULFATE:** 560

**BICARBONATE:** 109

**CALCIUM:** 28872

**MAGNESIUM:** 4860

**IRON:** 29

**BARIUM:** 4

**STRONTIUM:** 1110

**MEASURED pH:** 6.27

**TEMPERATURE:** 86

**DISSOLVED CO2:** 439

**MOLE PERCENT CO2 IN GAS:**

**DISSOLVED H2S:** 0.0

**PRESSURE (PSIA):** 100

**SODIUM (PPM):** 57281

**IONIC STRENGTH:** 4.36

**CALCITE (CaCO3) SI:** -0.37

**CALCITE PTB:** N/A

**GYPSUM (CaSO4) SI:** 0.02

**GYPSUM PTB:** 12.2

**BARITE (BaSO4) SI:** 0.85

**BARITE PTB:** 2.0

**CELESTITE (SrSO4) SI:** 0.70

**CELESTITE PTB:** 204.2

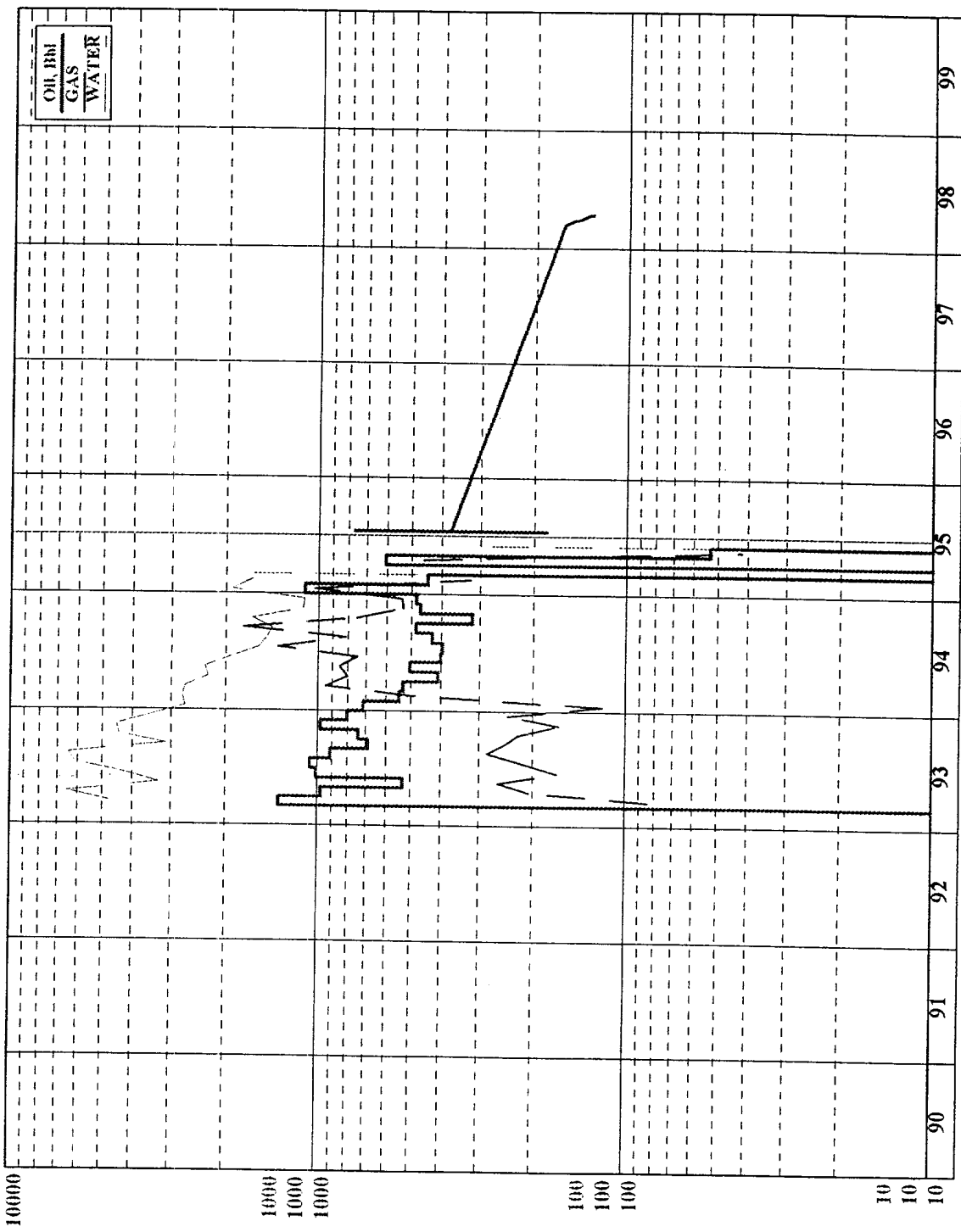
**SI calculations based on Tomson-Oddo**



PSD  
 Phase  
 Type  
 Decline(%)  
 q  
 Cum(M) 06/1995  
 Remaining(M)  
 Ultimate(M)  
 OGRE Cum(M)  
 OGRE Ult(M)  
 Segment  
 Type  
 Decline(%)  
 q  
 Limit  
 Forecast  
 Decline(%)  
 q  
 q actual  
 Cum(M) 06/1995  
 Remaining(M)  
 OGRE Cum(M)

07/01/1995  
 OIL  
 Exp  
 27.0  
 380  
 16.95  
 8.52  
 25.47  
 0.00  
 8.52  
 #0  
 Exp  
 27.0  
 380  
 34 IMOS  
 07  
 1995  
 27.0  
 375  
 16.95  
 8.52  
 0.00

GERONIMO FEDERAL 004  
 LEA COUNTY, NM  
 GERONIMO, DELAWARE FIELD

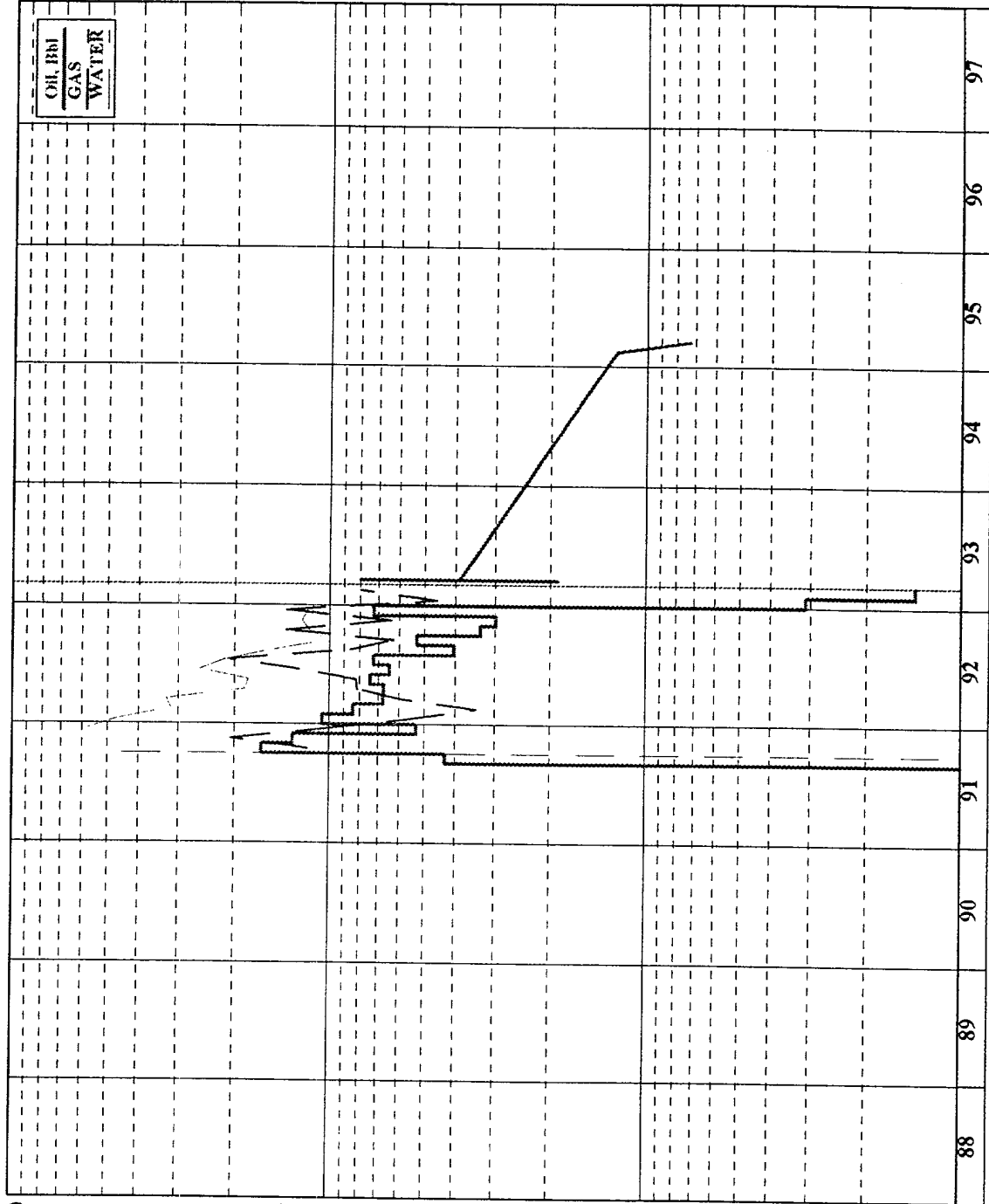


03/01/1993  
 OIL  
 Exp 45.0  
 400  
 11.61C  
 5.673  
 17.283  
 0.00C  
 5.673  
 #01  
 Exp 45.0  
 400  
 25 IMOS  
 0.0  
 1992  
 45.0  
 39C  
 11.61C  
 5.673  
 0.00C

PSD  
 Phase  
 Type  
 Decline(%)  
 qi  
 Cum(M) 02/1993  
 Remaining(M)  
 Ultimate(M)  
 OGRE Cum(M)  
 OGRE Ult(M)  
 Segment  
 Type  
 Decline(%)  
 qi  
 Limit  
 Forecast  
 Decline(%)  
 q  
 q actual  
 Cum(M) 02/1993  
 Remaining(M)  
 OGRE Cum(M)

**GERONIMO FEDERAL 004**  
**LEA COUNTY, NM**  
**GEM;BONE SPRING FIELD**

10000  
 10000  
 10000  
 10000  
 1000  
 1000  
 1000  
 100  
 100  
 100  
 10  
 10  
 10



OIL, RI  
 GAS  
 WATER

# GERONIMO FEDERAL #4

## PROPOSAL TO COMMINGLE

### PRODUCTION FROM GERIONIMO (DELAWARE) & GEM (BONE SPRING) ZONES

#### PRODUCTION HISTORY

BONE SPRING				
YR	MO	GAS (MCF)	OIL (BBL)	WATER (BBL)
1991	9	0	430	4500
	10	1177	1644	0
	11	2049	1310	0
	12	1051	530	5754
1992	1	571	1056	4650
	2	343	842	3160
	3	595	677	3270
	4	816	672	1860
	5	825	743	1807
	6	1249	646	2570
	7	2096	725	2149
	8	861	405	1508
	9	625	528	1020
	10	1377	334	1163
	11	639	299	1230
	12	1378	724	1181
1993	1	455	31	0
	2	799	14	0
		16,906	11,610	35,822

DELAWARE				
YR	MO	GAS (MCF)	OIL (BBL)	WATER (BBL)
1993	3	84	1344	4760
	4	205	980	6511
	5	261	530	3295
	6	166	1015	4290
	7	213	1063	6137
	8	282	912	6444
	9	246	688	3120
	10	223	738	4410
	11	164	981	4500
	12	241	804	3475
1994	1	118	713	2708
	2	494	545	2764
	3	948	531	2709
	4	801	410	2283
	5	852	503	2336
	6	746	401	1914
	7	1360	396	1571
	8	816	428	1468
	9	1755	485	1417
	10	752	318	1647
	11	533	468	1127
	12	535	482	1117
1995	1	1033	1111	1919
	2	322	443	1644
	3	0	0	0
	4	457	609	0
	5	42	53	274
	6	0	0	0
		11,564	7,896	26,898

Estimated Economic Remaining BONE SPRING Reserve = 5,700 BO

Estimated Economic Remaining DELAWARE Reserve = 8,500 BO

Combined Economic BONE SPRING & DELAWARE Reserve = 14,200 BO

Fraction of remaining reserve from BONE SPRING =  $5,700/14,200 = .40$

Fraction of remaining reserve from DELAWARE =  $8,500/14,200 = .60$

#### PROPOSED ALLOCATION FORMULA:

TOTAL PRODUCTION X (.40) = GEM (BONE SPRING) POOL  
TOTAL PRODUCTION X (.60) = GERONIMO (DELAWARE) POOL

24

19

20

25

30

29

T 19 S

R 33 E

36

3 1 10 5  
 Mitchell Energy  
 6  
 7 2  
 Mitchell Energy  
 8 4  
 SI  
 40 Ac.  
 9  
 Mitchell Energy

Manzano

31

32

Geronimo Federal  
 Lease  
 NM-67111  
 321.72 Ac.

1

6

5

12

Note:

Application to Commingle the  
 Bone Springs & Delaware  
 Formations in the MEC  
 Geronimo Fed. #4 well.



**Mitchell Energy Corporation**  
 P.O. BOX 4000 • THE WOODLANDS, TEXAS 77387-4000

OFFSET OWNERSHIP PLAT  
 GERONIMO FED. Well No. 4  
 1980' FNL & 1980' FWL (SE/NW)  
 Section 31, T-19-S, R-33-E  
 Lea County, New Mexico

DATE:

3-14-96

SCALE:

1"=2000"

## MEMORANDUM

TO: Jeff Williford / Production-Continental / Trident - 150

FROM: Mike O'Donnell / Property Administration / MND-1N

DATE: January 26, 1996

SUBJECT: **PROPOSED CASING LEAK SQUEEZE  
& COMMINGLING OPERATIONS**  
5023-04 Geronimo Federal Well No. 4  
Lea County, New Mexico

RECEIVED

JAN 31 1996

PRODUCTION  
REGULATORY AFFAIRS

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Pursuant to your memo dated January 9, 1996 to Pat Noyes regarding the above operations, we have reviewed the pertinent files and offer the following.

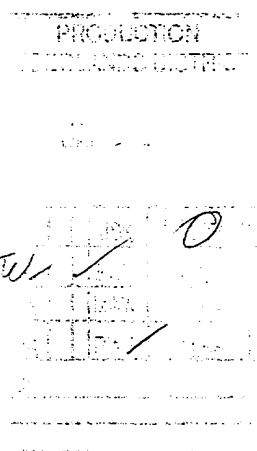
Our records indicate the subject well is located on the 321.72 gross and net acres covered by Federal Oil & Gas Lease NM NM-67111 (MEC # 40033-1), which is currently being maintained by production from the Geronimo Federal Wells No. 1, 2, 3, 5, 6, 7, 8, 9 & 10 (5023-01, 02, 03, 05, 06, 07, 08, 09 & 10).

MEC's rights extend to and cover both oil and gas at all depths and ownership is common at all depths. Therefore subject to regulatory approval production from the Delaware and the 1st Bone Spring are compatible for commingling.

Should you have any questions or if we can be of any assistance please advise.

  
MAO'D

cc: Roger B. Smith / Land / MND-4N  
Larry Cunningham / Land / MND-4N  
Pat Noyes / Production-Continental / MND-4N  
Cheryl Thompson

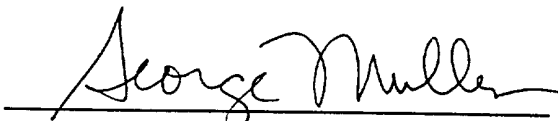


CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of Mitchell Energy Corporation's Application for Exception to Rule 303-A for its Geronimo Federal Well No. 4 was sent to each of the below named parties by certified mail on March 14, 1996.

Manzano Oil Corporation  
P.O. Box 2107  
Roswell, New Mexico 88202

Bureau of Land Management  
620 East Greene St.  
Carlsbad, New Mexico 88220

  
George Mullen