

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

RECEIVED

MAY - 8 1991

O. C. D.
ARTESIA OFFICE

FORM APPROVED

Budget Bureau No. 1004-0135

Expires: March 31, 1993

5. Lease Designation and Serial No.

NM-01119

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

8. Well Name and No.

Yates "C" Federal

9. API Well No.

22

10. Field and Pool, or Exploratory Area

Avalon - Delaware

11. County or Parish, State

Sec 4, T21S - R27E

1. Type of Well

☐ Oil Well ☐ Gas Well ☒ Other SWD

2. Name of Operator

Exxon Corp.

3. Address and Telephone No.

P. O. Box 1600, Midland, TX 79702

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

1557' FNL & 660' FWL, Sec 4, T21S- R27 E

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 Change injection interval
☐ 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.)*

See attached procedure.

RECEIVED
MAY 2 8 31 AM '91
O.C.D.
ARTESIA

Please expedite if possible. Subject to Like Approval by State

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

Signed

(This space for Federal or State office use)

Approved by

Conditions of approval, if any:

Alex M. Correa Title Administrative Specialist

Date 5-1-91

Title

Date 5/6/91

GENERAL INSTRUCTIONS

This form is designed for submitting proposals to perform certain well operations, and reports of such operations when completed, as indicated, on Federal and Indian lands pursuant to applicable Federal law and regulations, and, if approved or accepted by any State, on all lands in such State. Instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office.

SPECIFIC INSTRUCTIONS

Item 4—If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

Item 3—Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by local Federal and/or State offices. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones, or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to top of any left in the hole; method of closing top of well; and date well site conditioned for final inspection looking to approval of the abandonment.

NOTICE

The Privacy Act of 1974 and the regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et. seq., 351 et. seq., 25 U.S.C. et. seq.; 43 CFR 3160.

PRINCIPAL PURPOSE — The information is to be used to evaluate, when appropriate, approve applications, and report completion of secondary well operations, on a Federal or Indian lease.

ROUTINE USES:

(1) Evaluate the equipment and procedures used during the proposed or completed subsequent well operations.

(2) Request and grant approval to perform those actions covered by 43 CFR 3162.3-2(2).

(3) Analyze future applications to drill or modify operations in light of data obtained and methods used.

(4)(5) Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions.

EFFECT OF NOT PROVIDING INFORMATION — Filing of this notice and report and disclosure of the information is mandatory once an oil or gas well is drilled.

The Paperwork Reduction Act of 1980 (44 U.S.C. 3501, et. seq.) requires us to inform you that: This information is being collected in order to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.

This information will be used to report subsequent operations once work is completed and when requested, to obtain approval for subsequent operations not previously authorized.

Response to this request is mandatory for the specific types of activities specified in 43 CFR Part 3160.

BURDEN HOURS STATEMENT

Public reporting burden for this form is estimated to average 25 minutes per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management, (Alternate) Bureau Clearance Officer, (WO-771), 18 and C Streets, N.W., Washington, D.C. 20240, and the Office of Management and Budget, Paperwork Reduction Project (1004-0135), Washington, D.C. 20503.

FIELD: Avalon

BACKGROUND: Well will currently accept no fluid at permitted pressure.
Field is in a critical water disposal situation.

OBJECTIVE: Plug back current injection zone. Perf, acidize, and possibly frac zone higher in the Delaware to re-establish injectivity.

FORMATION CHARACTERISTICS

Formation	BHP (psi)	Anticipated Max. Surf. Pres.	Workover Fluid*	H2S (ppm)
Delaware	2,800	<1000 psi	Prod Water	-21,000

BOP SPECIFICATIONS

Class: III

H2S service equip. req.: Yes

Variances: No (Annular BOP required for PPI acid treatment).

PIPE PERFORMANCE

	Burst (w/l.lsf)	Drift	Capacity (bbl/ft)	Depth Set* (feet)
Tubing: 2-3/8"/4.7#/J55 (PC)	7,000 psi	1.947"	.00387	3,879
Prod. Csg: 5-1/2"/14 #/K55	3,881 psi	4.887"	.0244	surf - 4777'
5-1/2"/15.5#/K55	4,372 psi	4.825"	.0238	4777' - 6976'
5-1/2"/17 #/K55	4,836 psi	4.767"	.0232	6976' - 7596'

Capacity of tbg./csg (14 #) annulus: .0164 bbl/ft

Capacity of tbg./csg (15.5#) annulus: .0158 bbl/ft

PROCEDURE:

1. Test rig anchors per Ops Bulletin #52 and send charts to Rosemarie Whitlock in Midland.
2. Before MIRU well service unit, check SITP and the pressure on the casing annulus. Report annular pressures found to the Exxon supervisor and discuss appropriate and safe blow down procedures. Attempt to bleed annulus pressures to zero. For annular pressures that will not bleed to zero, first review with field superintendent, then inform the subsurface engineer. Document all pressure activity on morning report.
3. Bullhead kill mud to perfs. Use acid soluble polymer/calcium carbonate mud (available from Kill Mud & Chemicals, Inc. in Denver City, TX. Contact: Tommy Hall - 806-592-3113).

Note: Calculate kill-weight using [SITP + Hydrostatic head of injection fluid at mid-perf (4,141') + 300 psi overbalance]

4. Ensure well is dead, then nipple down injection tree and nipple up Class III BOP to tubing head. Test per company guidelines.

5. Unset Baker Lok-set packer and circulate hole with kill mud.
6. POH with tubing and BHA. KEEP HOLE FULL OF MUD WHEN PULLING PIPE. PULL SLOWLY TO AVOID SWABBING WELL IN.
7. Send packer and on-off tool to be redressed if necessary.
8. MIRU wireline and class II lubricator/wireline BOP assembly and test per company guidelines.
9. If a GR/CCL is not available in files for this interval, run one from 4,000' up to 2,500'. Correlate Schlumberger CNL-LDT dated 8-21-83. Note corrected collars on WAMO perforating record.
10. RIH with CIBP and set above existing perfs at approximately 3,925'. Dump bail 30' of cement on top of CIBP. Nipple down lubricator.

* WAMO ENTRY *			
Plug Set:		Type plug	Tagged
---- Depth ----			(yes/no)
Top' Bottom'		CIBP(WIRELINE SET)	

11. RIH with work string to PSTD and displace mud with field brine. Return mud to mud company for credit.
12. Test CIBP and casing to 2000 psi. Insure well is dead, then POH with work string.
13. Nipple up Class II lubricator to perforate as follows:

Perforate:

Service Company* JARRE Jarrel Services
 Gun Type* RHSC RETRIEVABLE HOLLOW STEEL CARRIER (FSF)
 Gun Size* 4 (inches)
 Correlation log type Schlumberger CNL-LDT dated 8-21-83
 Zero pnt KB (14.0 ft. above G.L.)
 Press Diff N/A (psi) when shot underbalanced
 Phasing 120
 Location 5940' FSL & 660' FWL; Sec 4; T-21-S; R-27-E
 Corrected collars N/A
 Correlation tie in point GR spikes @ 3.803; 3.714; 3.598; 3.538; 2.846'

top of Interval	Bottom of Interval	Spacing	Shots per ft	Total
<u>3.250'</u>	<u>3.350'</u>	<u>4'</u>	<u>1</u>	<u>26</u>
<u>3.410'</u>	<u>3.522'</u>	<u>4'</u>	<u>1</u>	<u>29</u>
<u>3.610'</u>	<u>3.790'</u>	<u>4'</u>	<u>1</u>	<u>46</u>

(if spacing = 4 and shots/ft = 1, then every 4 ft shoot 1 holes)

Note: Notify office if pressure is observed after perforating.

RD wireline.

14. Nipple up annular BOP (if not already done) and test per company guidelines.

15. RIH with a 5-1/2" PPI assembly w/ 10' packer element spacing on workstring. Use 21 joints of tubing w/ turned down collars at top of string. Hydrotest to 5000 psi while RIH. Set packer at 3,200' and test backside to 500 psi.
16. Break down perfs with 15% NeFeHCl as follows:

* * WAMO ENTRY * *			
<u>Stimulate:</u>			
Service Co*	DOWEL	DOWELL-SCHLUM	
Type Fluid*	15 HCL	15% HYDROCHLORIC ACID	
Total job Vol		(Gals)	
Total acid Vol	4,200	(Gals)	
Max Rate		(BPM)	
Type Diverter*	PKR	PPI PKR	
Upper Depth	3,250	(ft)	
Lower Depth	3,790	(ft)	
temp Pkr Depth		(ft)	
Flush Vol		(bbls)	
<u>Additives:</u>			
Function*		amt	Brand name
INHI	ACID INHIBITOR	1 GPT	Dowell A-76 or equiv
NEA	NON EMULSIFIER	1 GPT	Corexit 8546 or equiv
FECO	IRON CONTROL	5 GPT	U-28 or equivalent

Procedure:

- Spot, stake down, and pressure test equipment to 5,000 psi.
 - Perform PPI procedure on each perf from bottom to top (up to two perfs per setting). After perfs are broken down (max 5000 psi), pump at maximum rate without exceeding 1,000 psi surface treating pressure. Treat with 1.0 bbl acid per perf (two bbl per setting).
 - After all perfs are broken down, POH and set packer at approximately 3000', and fish fluid plug and spot control valve. Flush acid with tubing capacity of 2% KCl
17. Unset packers and POH with workstring & PPI assembly.
18. RIH with redressed Lok-set packer and on-off tool on 2-3/8" PC tubing. Space out to allow setting packer at 3,200' ±

* WAMO ENTRY *								
<u>Equipment RIH:</u>								
Piece of	Size	Wt	Grade*	Conn*	Cond*	#jnts	Top depth	Bottom depth
Equipment*								
PACKER	5-1/2				3			
ON-OFF TOOL					3			
TBG PLASTIC	2-3/8	4.7	J-55	EUE	3			

19. Displace hole with packer fluid (approx 52 bbl):
- 2% KCl with 10 gal/100 bbl Corexit 7672 bactericide
and 20 gal/100 bbl Corexit 7720 corrosion inhibitor.

20. Set packer at 3,200' +/-, nipple down BOP's, and nipple up injection tree.
21. RWTI and monitor injection rates and pressures daily until further notice. Depending on established rate and pressure, a frac job may be required.

***** AWAIT INSTRUCTIONS BEFORE CONTINUING *****

OPTIONAL FRAC TREATMENT

22. On instructions from office, shut off injection source and check SITP, if any. Kill well if necessary. *Contact office if necessary to kill well. If mud contacts pump, will sprain acid frac with acid.*
23. MIRU well service unit. Ensure well is dead, then nipple down injection tree and nipple up Class III BOP to tubing head. Test per company guidelines.
24. Unset packer and POH with tubing and BHA.
25. SION to allow temperature to stabilize.
26. MIRU Dowell/Schlumberger and tagging company to frac and tag well. Run a before-frac base temp log the morning of the frac.

Fracture:

Depth (ft) Top 3,250 Bottom 3,790
 Rate (bpm): max 40 average _____
 Press (psi): max _____ average _____
 Service Co* DOWELL DOWELL-SCHLUM

Frac Composition: Dowell YF135 (Crosslinked low-residue guar) System.

Function*	amt	Brand name
KCI	167 PPT	2% KCI water
GELL	7.9 GPT	J-877 liq slurry gel
XLIN	1.2 PPT	L-10 Borate X-linker
PH	0.3 GPT	U-28
BACT	0.25 GPT	M-76
SURF	2.0 GPT	TFA-380B
BREA	3.0 PPT	J-218
BREA	1.5 GPT	J-318 Breaker aid.

Breaker and breaker aid as required for 4- 6 hr break.

Sand Stage (ppga)	Stage Fluid Vol (gals)	Cumul. Fluid Vol (gals)	Stage Dirty Vol (bbl)	Cumul. Dirty Vol (bbl)	Stage Proppant (lb)	Cumul. Proppant (lb)	Prop. Size*
Pad	35,000	35,000	833.3	833.3	0	0	
1.0	4,500	39,500	112.0	945.4	4,500	4,500	12/20
2.0	7,000	46,500	181.9	1,127.2	14,000	18,500	12/20
3.0	9,000	55,500	243.6	1,370.8	27,000	45,500	12/20
4.0	12,000	67,500	337.8	1,708.7	48,000	93,500	12/20
5.0	13,500	81,000	394.7	2,103.4	67,500	161,000	12/20
Flush	3,600	84,600	85.7	2,189.1	0	0	
TOTALS	84,600		2,189.1		161,000		

*Use 16/30 mesh if 12/20 not available.

(Brady Sand)

FRAC PROCEDURE:

- a. Install a 5,000 psi minimum W.P. tree saver and frac head for 5-1/2" casing on BOP stack (will frac down casing).
- b. Install relief valve on 8-5/8" X 5-1/2" annulus that is set to vent at 1,000 psi. Route relief line to pit and stake down.
- c. Test treating lines to 4,000 psi with water. Set auto shutdown at 3,800 psi (expected treating pressure is <2000 psi).
- d. Frac well according to the above schedule. Pump at 40 BPM. Do not exceed 3,800 psi surface pressure. Hold 1,000 psi on 5-1/2" X 8-5/8" annulus and monitor.
- e. Displace frac with approximately 76 bbls of clean slick 2% KCl water to leave approximately 100' - 150' of sand above perfs. Switch from frac to flush as quickly as possible.

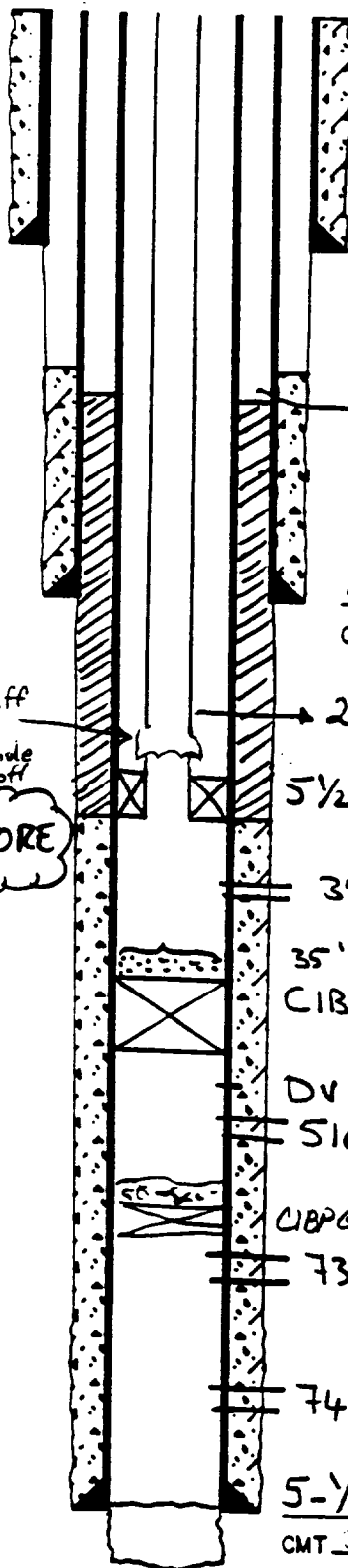
DO NOT OVERDISPLACE!

- f. Run 1, 3, and 6 hour shut-in after-frac gamma ray and temperature logs.
27. RD Dowell and leave well SION to let frac heal. Note any pressure before opening well up next morning. Bullhead brine or acid soluble mud to kill if necessary.
28. RIH with open-ended work string and check for fill above perfs. Clean out if necessary.
29. Flow/swab back load. After load is recovered, kill well if necessary and POH with work string.
30. RIH with redressed seal assembly and on-off tool (if well had to be killed, put blanking plug in on-off tool before RIH) on 2-3/8" PC tubing. Space out and set packer at 3,200' ±
31. Unjay from on-off tool and displace hole with packer fluid (approx 52 bbl): *If mud is in hole, collect and return to mud w. for credit.*
2% KCl with 10 gal/100 bbl Corexit 7672 bactericide
and 20 gal/100 bbl Corexit 7720 corrosion inhibitor.
32. Space out, jay back onto on-off tool, nipple down BOP's, and nipple up injection tree.
33. Rig up slickline and retrieve blanking plug (if present); then if well is not dead, flow back to clear wellbore and perfs of any residual mud.
34. RWTI. Monitor injection rates and pressures daily until further notice.

WELLBORE SKETCH AND WELL HISTORY

ELEV.: KB 14 ABOVE G.L.

LEASE & WELL NAME: YATES FED. "C" #2
 FIELD: Burton Flat COUNTY: EDDY ST.:
 LOCATION: 1557' FNL and 660' FWL OF
SEC. 4, T21S, R27E
 DATE: 4/30/90 BY: 999 REV: 2/6/91 BY:



13-3/8" • 605'
 CMT 975 SX

TOC @ 1200'

8-5/8" • 2496'
 CMT _____ SX

2-3/8" H₂O 4.7" P.C.

5 1/2" BAKER LOK SET PKR
 @ 3879

3976' - 4306' (383 shots)

35' of CMT on top of CIBP
 CIBP @ 5108

DV TOOL @ 5150'
 5166' - 76' (4SPF)

CIBP @ 7300'
 7365' - 92' (4SPF)

7426' - 42' (4SPF)

5-1/2" • 7596'
 CMT 3120 SX

CASING RECORD

SURFACE CASING

O.D.	WT/FT	GRADE	SET
13-3/8	48 #		60
8-5/8	24 #	K-55	24'

PRODUCTION CASING

5-1/2	14, 15.5, 17	K-55	75

TUBING

NO. JTS.	O.D.	THD.	TYPE	WT.	GDE.
122	2-3/8	P.C.		4.7	

WELL HISTORY:

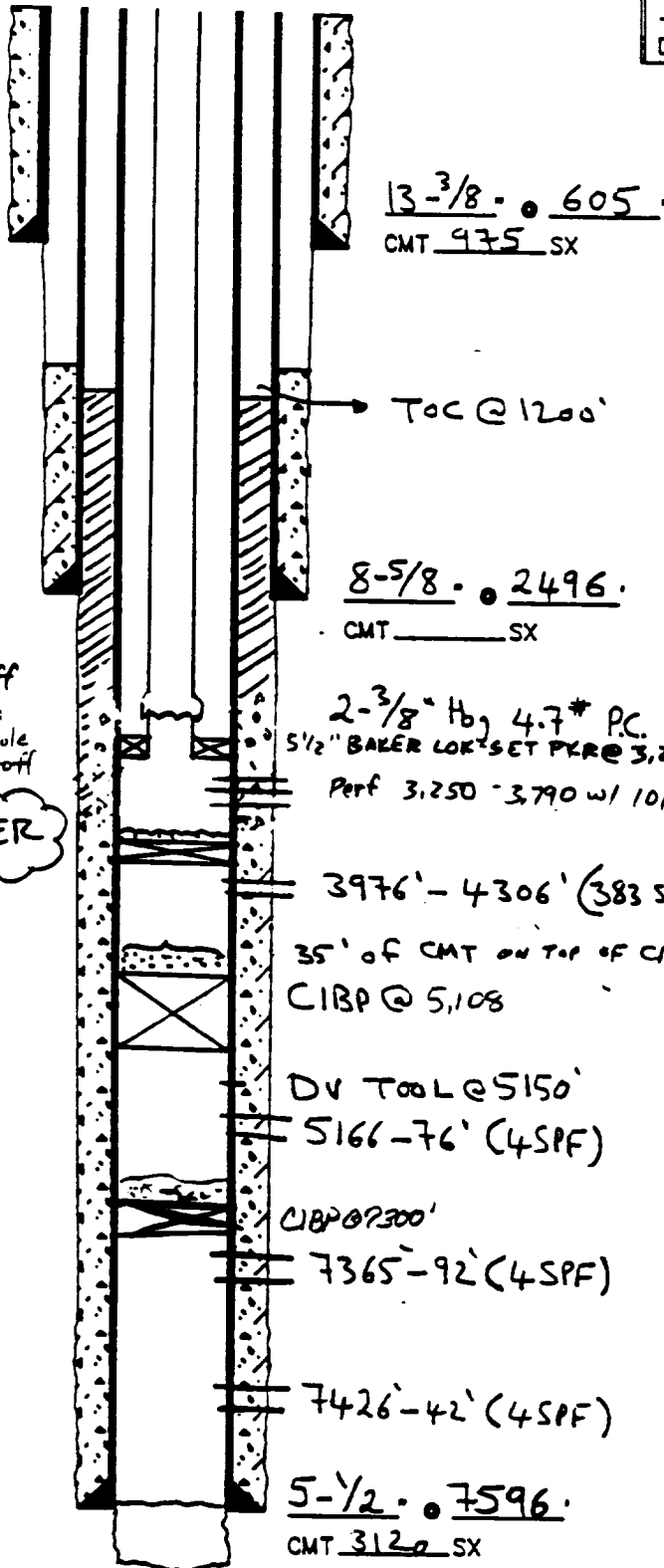
7/83 SPURRED WELL
 8/83 Perf 7426-42'
 9/83 Acidized w/ 2000 gal 7 1/2% A₂
 Frac perf w/ 2000 gal 11E Frac
 Co₂ + 3300 # 20-40 Sand
 10/83 Perf 7365-92' Frac w/ 60,000
 YFCO₂ Frac fl + 5000 # 20-40
 2/85 Perf 5166-76' & Acidized w/ 1
 15% NE HCl
 Frac w/ 8500 gal XL4, 21000 #
 20-40 Sand, 40 TONS Co₂
 11/85 Convert To SWD
 Set CIBP @ 5096' & perf @
 3976'-4306', Frac w/ 146,000 #
 20-40 sand, 100,000 gal 3 1/2 KCl
 Pumped 150 BBLs of produced water
 @ 50 BPH @ 550 psi. SITP 300
 6/87 Drill out cement and CIBP @ 5096'.
 Clean out to 7426'. Set CIBP @ 7300'
 w/ 50000 sand on top. Set CIBP @ 510
 & spnt 25000 sand on plug.
 9/90 Acidize w/ 2500 gals 15% HCl
 No help!

TD: 7600' PBD: 7543'

WELLBORE SKETCH AND WELL HISTORY

ELEV.: KB _____, 14' ABOVE G.L.

LEASE & WELL NAME: YATES FED. "C" # 2
 FIELD: Burton Flat COUNTY: EDDY ST.:
 LOCATION: 1557' FNL and 660' FWL OF
SEC. 4, T21S, R27E
 DATE: 4/30/90 BY: AAA REV.: 2/6/91 BY: _____



CASING RECORD

SURFACE CASING

O.D.	WT/FT	GRADE	SET
13-3/8	48 #		60
8-5/8	24 #	K-55	24

PRODUCTION CASING

5-1/2	14, 15.5, 17	K-55	75

TUBING

NO. JTS.	O.D.	THD.	TYPE	WT.	GDE.
122	2-3/8	BR	EUE	4.7	J-55

WELL HISTORY:

7/83 SPUNDED WELL
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 9/83 Acidized w/ 2000 gal 7 1/2% Ac
 Frac perf w/ 2000 gal 16 Frac
 Co₂ + 3300 # 20-40 Sand
 10/83 Perf 7365-92' Frac 15/40, 00
 YFCO₂ Frac fl + 5800 # 20-40
 2/85 Perf 5166-76' & Acidized w/ 15% NE HCl
 Frac 15/8500 gal XL4, 21000 #
 20-40 Sand, 40 TONS Co₂
 11/85 Convert To SWD
 Set CIBP @ 5096' & perf @
 3976'-4306', Frac 2/164,000 #
 20-40 Sand, 100,000 gal 3 1/2 KCl
 Pumped 150 BBLs of produced water
 @ 50 BPH @ 550 psi. SITP 300
 6/87 Drill out cement and CIBP @ 5096'.
 Cement to 7426'. Set CIBP @ 7300'
 w/ 50 cc cement on top. Set CIBP @ 510
 & spot 25 cc cement on plug.
 9/90 - Acid w/ 2500 gal 15% HCl. No

TD: 7600' PBD: 7543'

PERFORATION SHEET

(SERVICE COMPANY COPY)

Perforate:

Service Company* JARRE Jarrel Services
 Gun Type* RHSC RETRIEVABLE HOLLOW STEEL CARRIER (FSF)
 Gun Size* 4 (inches)
 Correlation log type Schlumberger CNL-LDT dated 8-21-83
 Zero pnt KB (14.0 ft. above G.L.)
 Press Diff N/A (psi) when shot underbalanced
 Phasing 120
 Location 5940' FSL & 660' FWL; Sec 4; T-21-S; R-27-E
 Corrected collars N/A
 Correlation tie in point GR spikes @ 3.803; 3.714; 3.598; 3.538; 2.846'

top of Interval	Bottom of Interval	Spacing	Shots per ft	Total
<u>3.250'</u>	<u>3.350'</u>	<u>4'</u>	<u>1</u>	<u>26</u>
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<u>3.610'</u>	<u>3.790'</u>	<u>4'</u>	<u>1</u>	<u>46</u>

Example: if spacing = 4 and shots/ft = 1, then every 4 ft shoot 1 hole.