C/SF

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

5. Lease Designation and Serial No.
LC-062052

6. If Indian, Allottee or Tribe Name

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

7. If Unit or CA, Agreement Designation

SUBMIT IN TRIPLICATE

SEP - 6 1991
O. C. D.
ARTESIA, OFFICE

1 Type of Well
[X] Oil Well [ ] Gas Well [ ] Other

8. Well Name and No.
Marathon Shugart"B" No. 1

2 Name of Operator
Marathon Oil Company

9. API Well No.
30-015-25955

3 Address and Telephone No.
P.O. Box 552, Midland, TX 79702 (915) 682-1626

10. Field and Pool, or Exploratory Area
Second Bone Spring Carbonate

4 Location of Well (Footage, Sec., T., R., M., or Survey Description)
Unit M: 660' FWL & 470' FSL, Sec. 11, T-18-S, R-31-E,
Eddy County, New Mexico

11. County or Parish, State
Eddy County, NM

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

TYPE OF SUBMISSION	TYPE OF ACTION	
[ ] Notice of Intent	[ ] Abandonment	[ ] Change of Plans
[X] Subsequent Report	[ ] Recompletion	[ ] New Construction
[ ] Final Abandonment Notice	[ ] Plugging Back	[ ] Non-Routine Fracturing
	[ ] Casing Repair	[ ] Water Shut-Off
	[ ] Altering Casing	[ ] Conversion to Injection
	[X] Other Run Step Rate and Injectivity Test	[ ] 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.)

Marathon Oil Company initiated operations on 5/23/91 to preform a step rate and injectivity test as follows:

1. Shut well down. MIRU PU. Unbeamed well & layed down 99-7/8" steel rods & 12-3/4" steel rods. 3/4" rods had severe paraffin buildup. Ran back in hole w/3/4" rods. RU hot oiler. Pumped 35 bbls of hot oil down tbg. RD hot oiler. FOOH w/229-3/4" steel rods & a 2" x 1 1/4" x 16' x 18' x 20' RHBC pump. ND wellhead. NU BOP. Released TAC & POOH w/192 jts of 2 3/8" tbg. Closed pipe rams, installed tbg valves. SDFN.
TL 36 BO TR 0 BO, 0 BW

2. SITP = 5 psig. FOH w/77 jts of 2 3/8" tbg, TAC, SN & mud anchor. RIH w/2 jts of 2 3/8" tbg. Bull plugged, 2-3/8" SN, 1 jt 2-3/8" tbg, slotted-bug, 2 jts 2-3/8" tbg

(See Attachment I)

14. I hereby certify that the foregoing is true and correct
Signed C.A. Bagwell Title Engineering Technician Date 8/16/91

(This space for Federal or State office use)
Approved by _____ Title _____ Date _____
Conditions of approval, if any:

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

ATTACHMENT I

2. 2-3/8" x 5-1/2" Guiberson Uni-Packer VI, on 261 jts of 2-3/8" x 4.7#/ft., J-55, EUE tbg w/2 2-3/8" x 8' pump jts. Set pkr w/5000# tension @ 8018' w/slotted sub @ 8088' (slotted from 8089'-8094'). Btm of tbg @ 8191'. ND BOP and NU wellhead. Installed 2" valve in tbg. RDMO PU. Let well SI.
TL 35 BO TR 0 BO, 0 BW

3. SITP = 50 psig. SICP = 80 psig. RU Reeco swab unit. Spotted 500 bbls swab tank. RIH w/swab, hit fluid @ 7600'. Made 6 swab runs, waiting 1 hr between last 4 runs. Recov'd a total of 5 BO & 5 BW in 6 hrs. RD Reeco. Ending tbg press 0 psig w/100 psig csg press. SWI. SDFN. Spotted 4 steam cleaned frac tanks.
TL 35 BO TR 5 BO, 5 BW

4. POOH w/bombs to change chart. RIh w/bomb.
TL 35 BO TR 5 BO, 5 BW

5. SITP = 315 psig. SICP = 310 psig. POOH w/MOC pressure bomb. RU John West Engineering, Inc. RIH w/pressure bomb, tagged bull plug @ 8191', pulled tension in cable. BHP = 441 psig w/BHT of 123.5°F @ 10:37 am MST. Gauged frac tanks yielding 1,846 bbls of wtr. Pumped 50 bbls of wtr, unable to catch pressure. Conducted step rate test as followsL (Note: pressures & rates are averages.)

Step No.	Tbg Press	Rate BHD	BHP	Elapsed Time	Cum Vol bbl	Csg Press
1	3.7 (Vac)	724.8	784	30 min	15.1	310
2	4.6 (Vac)	1080.0	860	30 min	32.6	-
3	5.0 (Vac)	1416.8	1023	30 min	67.1	-
4	5.4 (Vac)	2126.4	1280	30 min	111.4	-
5	6.2 (Vac)	3523.2	1734	30 min	184.8	-
6	7.5 (Vac)	4924.8	2369	30 min	236.6	-
	(1 1/2" meter failed, replaced w/2" & resumed test)					
7	1265	5529.6	3208	15 min	318.1	800
	(Ended test due to service company load pump failed)					

Bottom hole ISIP = 3449 psig. Conducted 2-hr falloff test. RD John West Engineering. Gauged tanks yielding 1475 bbls. Service company volume = 368 bbls vs frac tank gauge of 371 bbls. Closed well in. SDFN. POOH w/bombs to change chart. RIH w/bomb.
TL 35 BO TR 5 BO, 5 BW

6. SITP = Vac. SICP = 425 psig. MIRU PU. Blew csg down. ND wellhead, NU BOP.Unset Guiberson Uni-Packer VI & POOH w/2 3/8" x 8' pup jts, 261 jts of 2 3/8", 4.7#/ft J-55 tbg, 2 3/8" x 5 1/2" Uni-VI pkr. Laid down assembly below pkr consisting of 5 jts 2 3/8" tbg, slotted sub, & bull-plugged collar. RIH w/5 1/2" pkr, SN on 257 jts of tbg (left out 2 pup jts & 4 jts of tbg). ND BOP, set pkr & pulled 1000# tension. NU wellhead. Btm of pkr @ 7859' w/SN @ 7848'. Top perf @ 7963' or 115' below pkr. Released rig. Installed Halliburton flow meter to tbg. SWIFN. Top frac tanks off w/ fresh wtr.
TL 35 BO, 317 BW TR 5 BO, 5 BW

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ATTACHMENT I

7. SITP = 60 psig. SICP = 0 psig. Finished RD PU. Spotted Star Tool Triplex pump. Connected pump to frac tanks & tbg. Started injectivity test @ 9:00 am MST with a rate of 1,000 BWPD @ 0 psig tbg press.
TL 35 BO, 371 BW TR 5 BO, 5 BW

8. Injected 925 BW in 22 hrs. Initial press = Vac. Final press = 1000 psig. Well caught press after 304 BW pumped.
TL 35 BO, 371 BW TR 5 BO, 5 BW

9. Injected 975 BW in 24 hrs with an avg press of 1300 psig. Reached 1600 psig (0.20 psi/ft maximum) @ a cumulative injected vol of 1776 BW.
TL 35 BO, 371 BW TR 5 BO, 5 BW

10. Injected 733 BW in 24 hrs @ avg tbg press of 1500 psig.
TL 35 BO, 371 BW TR 5 BO, 5 BW

11. Injected 637 BW in 24 hrs @ an avg tbg press of 1570 psig.
TL 35 BO, 3004 BW TR 5 BO, 5 BW

12. Injected 617 BW in 24 hrs @ an avg tbg press of 1580 psig. RU Cardinal survey w/f lubricator. Ran temp, RA intensity & velocity shot surveys across Bone Spring Second Carbonate w/the well taking fluid at an avg rate of 0.4 BPM. Survey showed no flow below 8,175'. Avg calculated inj rate during velocity shots was 561 BWPD. Field calculated flow rates & percentages as follows:

Perfs	O,BPD	% of Flow
7963'81'	73	13
8072'-8120'	359	64
8121'-8170'	129	23
8190'-8195'	0	0
8215'-8228'	0	0

13. Injected 517 BW in 24 hrs @ an avg tbg press of 1525 psig.
TL 35 BO, 4775 BW TR 5 BO, 5 BW

14. Injected 511 BW in 24 hrs @ an avg tbg press of 1580 psig.
TL 35 BO, 4775 BW TR 5 BO, 5 BW

15. Injected 495 BW in 24 hrs w/TP=1380 psig - 1580 psig (changed out pump @ 4:00 pm).
TL 35 BO, 4775 BW TR 5 BO, 5 BW

16. Injected 524 BW in 24 hrs w/TP=1540 psig.
TL 35 BO, 4775 BW TR 5 BO, 5 BW

17. Injected 495 BW in 24 hrs w/TP=1540 psig.
TL 35 BO, 4775 BW TR 5 BO, 5 BW

18. Injected 439 BW in 24 hrs w/TP=1560 psig.
TL 35 BO, 7239 BW TR 5 BO, 5 BW

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ATTACHMENT I

19. SITP = Vac. SICP = 0 psig. RU John West Engineering, Inc. RIH w/7500 psig bomb. FL @ 1200'. Landed bomb @ 7850'. BHP = 3381 psig. Loaded tbg & started test @ 12:00 pm MST. Conducted test as follows:

Step No.	Duration Min.	Avg Rate	Tbg Press (psia)	BHP (Psia)	Cum Inj (bbl)
1	30	465.9	126.1	3502.6	9.1
2	30	638.4	408.5	3771.9	22.4
3	30	700.8	624.2	3980.8	37.0
4	30	1363.2	1271.2	4522.9	65.4
5	30	1987.2	1967.6	5049.9	107.8
6	30	2875.2	2778.1	5574.9	167.7
7	30	3528.0	3300.0	5724.6	216.7

Shut down 7th step early due to overheating pump engine. Bottomhole ISDP = 5725 psig. Bottom press dropped to 4991.9 psig in 1 hr. RD John West. RU Star Tool pump. Resumed injectivity test.

20. Injected 293 BW in 12 hrs for a daily rate of 586 BWPD @ a TP of 1580 psig.
TL 35 BO, 7765 BW TR 5 BO, 5 BW

21. Injected 293 BW in 12 hrs for a daily rate of 586 BWPD @ TP of 1580 psig.

22. Injected 424 BW in 24 hrs w/TP of 1580 psig.

23. Injected 404 BW in 24 hrs w/TP of 1580 psig.

24. Injected 339 BW in 22 hrs. TP = 1580 psig for the first 14 hrs, then after a 2 hr shut-down TP = 1450 psig.
TL 35 BO, 9766 BW TR 5 BO, 5 BW

25. Injected 339 BW in 22 hrs. TP = 1580 psig for the first 14 hrs, then after a 2 hr shut-down TP = 1450 psig.
TL 35 BO, 9766 BW TR 5 BO, 5 BW

26. Injected 371 BW in 24 hrs w/1580 psig TP.
TL 35 BO, 10,137 BW TR 5 BO, 5 BW

27. Injected 355 BW in 24 hrs w/1540 psig TP.
TL 35 BO, 10,137 BW TR 5 BO, 5 BW

28. Injected 389 BW in 24 hrs w/1580 psig TP.
TL 35 BO, 10,137 BW TR 5 BO, 5 BW

29. Injected 317 BW in 21 hrs w/1580 psig TP.
TL TR 5 BO, 5 BW

30. Injected 424 BW in 24 hrs w/1580 psig TP.
TL 35 BO, 11,622 BW TR 5 BO, 5 BW

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ATTACHMENT I

31. Injected 332 BW in 24 hrs w/1580 tbg psi. Shut well in. RD Star Tool. RU X-Pert Well Service. SITP 1400 psig. Open well to frac tank. Well flowed 36 BW in 3 hrs then died. ND wellhead. NU BOP. Attempts to unseat pkr unsuccessful. RU swab lubricator. Made 6 SR in 2 hrs. Swabbed 18 BW w/FFL @ 2100' f/surface. Attempt to unseat unsuccessful. RU pump truck. Pump 30 BW down annulus. Started working tbg. Getting 2 bumps, indicating on-off tool. Release FL on-off tool. Equalize tbg & csg. Latch onto on-off tool. Working tbg, jarring down on pkr. Unseat pkr. POOH w/70 stds. Closed well in. SDFN.
TL 35 BO, 11,984 BW TR 5 BO, 5 BW

32. Finish POH w/tbg. L/O Uni VI pkr. RIH w/2 3/8" mud Jt (slotted) S/N, 11 Jt 2 3/8" J-55 tbg, 5 1/2" x 2 3/8" T.A.C. & 259 Jts 2 3/8" - J-55 8rd tbg. Set T.A.C. in 14,000 tension land tbg w/T.A.C.@ 7839' S/N @ 8384' tbg tail @ 8316'. WIH w/1" 10' gas anchor, 2" x 1 1/4" x 16' x 18' x 20' RHBC pump, 1 - 2' x 7/8" ponyrod 229 3/4" rods, 99 7/8" rods, 2 - 2' - 7/8" rods & 1 - 6' - 7/8" ponyrod w/1 1/4" x 22' polish rod w/12' liner. Hung well on. Load & test @ 500 psi. Check pump action, rig down X-Pert. Put well on production.
TL 35 BO, 11,984 BW TR 5 BO, 23 BW

FINAL TEST.