

12/1/03

12/16/03

WVS

LR

PLR033364729

Southern U.S. Business Unit
Domestic Production

WVS

**Marathon
Oil Company**P.O. Box 552
Midland, TX 79702-0552
Telephone 432/682-1626

November 21, 2003

RECEIVED

DEC 01 2003

William Jones
New Mexico Energy, Minerals, and Natural Resources Department
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

OIL CONSERVATION
DIVISION

Dear Mr. Jones:

Marathon Oil Company respectfully requests approval for a single well injectivity test in the MOC Federal #7 well, located in Unit N of Section 1 of T21S & R23E in Eddy County, New Mexico. The injectivity test is being designed to evaluate the feasibility of a future waterflood for the Canyon reservoir in the Dagger Draw South field.

Enclosed please find an original and one copy of the completed OCD Form C-108, Application for Authorization to Inject. As you suggested for a single well injectivity test during our discussion on the phone on October 23, 2003, Marathon Oil Company is requesting administrative approval for this application. As required for administrative approval, enclosed please find a draft of the legal advertisement published in the Carlsbad Current-Argus. In addition, we have provided a copy of this application to the Oil Conservation Division's District Office in Artesia, New Mexico, and a copy to the Bureau of Land Management in Carlsbad, New Mexico as surface owner of record.

Your attention to this matter is appreciated. Please contact me for questions at 432-687-8314 before 1/1/04, or 713-296-2983 after 1/1/04.

Sincerely,

A handwritten signature in cursive script that reads 'Allen C. Brummert'.

Allen C. Brummert

xc w/ Enclosure:

Tim Gum

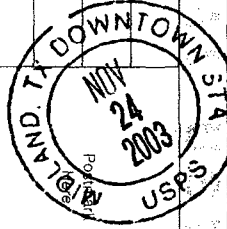
District Supervisor

New Mexico Energy, Minerals, and Natural Resources Department
Oil Conservation Division
1301 W. Grand Avenue
Artesia, New Mexico 88210

7001 0320 0003 9459 1275

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

Postage	\$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$



Sent To
Street, Apt. No.,
or PO Box No. 1301 W. GRAND AVE.
City, State, ZIP+4
TIM BURN, DISTRICT SUPERVISOR, OGD
ARTESIA, NM 88210

PS Form 3800, January 2001 See Reverse for Instructions

APPLICATION FOR AUTHORIZATION TO INJECT

- I. PURPOSE: ☒ Secondary Recovery ☐ Pressure Maintenance ☐ Disposal ☐ Storage
Application qualifies for administrative approval? ☒ Yes ☐ No
- II. OPERATOR: Marathon Oil Company
ADDRESS: PO Box 552 Midland, TX 79702 (Before 1/1/04)
PO Box 3128 Houston, TX 77253 (After 1/1/04)
CONTACT PARTY: Allen C. Brummert
PHONE: 432-687-8314 (Before 1/1/04)
713-296-2983 (After 1/1/04)
- III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection.
Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project? ☐ Yes ☒ No
If yes, give the Division order number authorizing the project: _____
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
- VII. Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected;
 2. Whether the system is open or closed;
 3. Proposed average and maximum injection pressure;
 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
 5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- *VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any.
- *X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).
- *XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
- NAME: Allen C. Brummert TITLE: Reservoir Engineer
SIGNATURE: Allen C Brummert DATE: 11/21/03
E-MAIL ADDRESS: ACBrummert@MarathonOil.com
- * If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal: _____

C-108
Application for Authorization to Inject
Marathon Oil Company

MOC Federal #7
Unit N 1-21S-23E
890' FSL & 1750' FWL
Eddy County, New Mexico

I. Purpose

Marathon Oil Company will re-inject produced water into the Canyon (Upper Pennsylvanian) reservoir of the MOC Federal #7 as part of a single-well injectivity test to evaluate the feasibility of a future waterflood in the Dagger Draw South field.

II. Operator

Before 1/1/2004

Allen C. Brummert
Marathon Oil Company
PO Box 552
Midland, TX 79702-0552

After 1/1/2004

Allen C. Brummert
Marathon Oil Company
PO Box 3128
Houston, TX 77253

III. Well Data

See Attachment A

IV. Project Expansion

This is not an expansion of an existing project.

V. Map

See Attachment B

VI. Table of all Wells within Area of Review

See Attachment C

VII. Proposed Operation

1. The proposed average daily injection volume is estimated to be 1000 BWPD, and the proposed maximum daily injection volume is estimated to be 5000 BWPD for this well.
2. The system will be a closed system.
3. The proposed average injection pressure is estimated to be 750 psi, and the proposed maximum injection pressure is estimated to be 1550 psi.
4. The source of the injection water will be nearby production wells completed in the Cisco & Canyon (Upper Pennsylvanian) reservoir of the South Dagger Draw Upper Pennsylvanian Associated Gas Pool and the Indian Basin Upper Pennsylvanian Gas Pool.

VIII. Geologic Data

The Cisco & Canyon (Upper Pennsylvanian) reservoir is a fine to coarse crystalline dolomite with vugular and intercrystalline porosity. The measured depth to the top of the productive dolomite is 7510' in the MOC Federal #7, and the average thickness is 250'. The proposed injection zone is perforated from 7762' – 7844' in the MOC Federal #7.

The known fresh water zone overlying the proposed injection zone is the San Andres aquifer located to 1100 feet below the surface. There are now underlying fresh water aquifers.

IX. Proposed Stimulation Program

The proposed injection interval may be acidized with HCL acid.

X. Well Logs

Well logs have been previously submitted to the New Mexico Oil Conservation Division.

XI. Fresh Water Analyses

No fresh water wells exist within a one mile radius of the MOC Federal #7.

XII. Hydrologic Connection to Sources of Drinking Water

See Attachment D for the signed affirmation stating no evidence of open faults or other hydrologic connection between the proposed injection zone and any underground source of drinking water.

XIII. Proof of Notice

Marathon Oil Company has sent a certified letter, shown in Attachment E, to the Bureau of Land Management, the only owner of surface land on which the MOC Federal #7 is located.

Other than Marathon Oil Company, there are no other leasehold operators within one-half mile of the proposed injection well.

A letter to the Carlsbad Current-Argus, with the attached public notice, is shown in Attachment F.

Attachment A1

III. Well Data

Section A:

1. Lease Name: MOC Federal #7

Location: 890' FSL & 1750' FWL, Sec. 1, T21S, R23E, Eddy County, NM

2. Casing and Cement

<u>Casing Size</u>	<u>Setting Depth</u>	<u>Sacks Cement</u>	<u>Hole Size</u>	<u>Top of Cement</u>
16"	65'	unknown	20"	to surface
9-5/8"	1222'	750	12.25"	circ 416 sx to surface
7"	8047'	1280	8.75"	1 st stage circ 68 sx to surface 2 nd stage circ 77 sx to surface

3. Tubing: 3-1/2", 9.3# internally plastic coated at about 7750'.
4. Packer: Set at about 7750'.

Section B

1. Injection Formation: Canyon
Field or Pool Name: South Dagger Draw Upper Pennsylvanian Associated Gas Pool
2. Injection Interval: 7762' - 7844' perforated
3. Original purpose of well: Drilled as a producer from the Upper Penn
4. Other perforated intervals, bridge plugs, cement plugs: None
5. Next higher oil & gas zone: Cisco
Next lower oil & gas zone: Strawn

See current and proposed wellbore schematics (Attachments A2 and A3)

Spud: 01/18/95
G.L. Elev.: 3743'
K.B.: 3761'

16" Conductor Casing
Set at 65', Cement to Surface
W/readi-mix.

Intermediate Casing
9 5/8" 36#, Csg.
Set at 1222', Cmt. W/750 sks.
Circ. 416 sks.

Attachment A2
Current Wellbore Diagram
MOC Federal No.7
Date: 10/30/2001
U.L. "N", 890' FSL, 1750' FWL
Sec. 1, T-21-S, R-23-E
Eddy Co., N.M.

Well Name: MOC #7

Date Job: 11/10/1998

Co. Man: Grandpa (R. J. Goodrich)

KB: 15

# Joints	Size	Weight	Grade	Cplg	Length	Top	Bottom
				KBC	15.00	0.00	15.00
245	2 7/8"	6.5#	L-80	8rd	7541.15	15.00	7556.15
	Tbg Anchor				2.41	7556.15	7558.56
10	2 7/8"	6.5#	L-80	8rd	308.50	7558.56	7867.06
	SN				1.10	7867.06	7868.16
	Perf. Sub				4.23	7868.16	7872.39
	Mud Anchor				31.62	7872.39	7904.01
	Collar w/ Bull plug				0.80	7904.01	7904.81
						7904.81	7904.81
						7904.81	7904.81
						7904.81	7904.81
						7904.81	7904.81
						7904.81	7904.81
						7904.81	7904.81
255	Total # Joints						

Rod Report

	1 1/2" x 26'	Polish Rod					
	1 3/4" x 16'	PR Liner					
2	1 1/4" x 3'	Pony Rod					
102	1 1/4"	Fibercom					
158	1"	N-97					
	33k	Shear Tool					
1	1"	N-97					
	2 1/2" x 1 1/2" x 2'	Pump					
	1 1/4" x 16'	Gas Anchor					
261	Total # Rods						

Pump Report

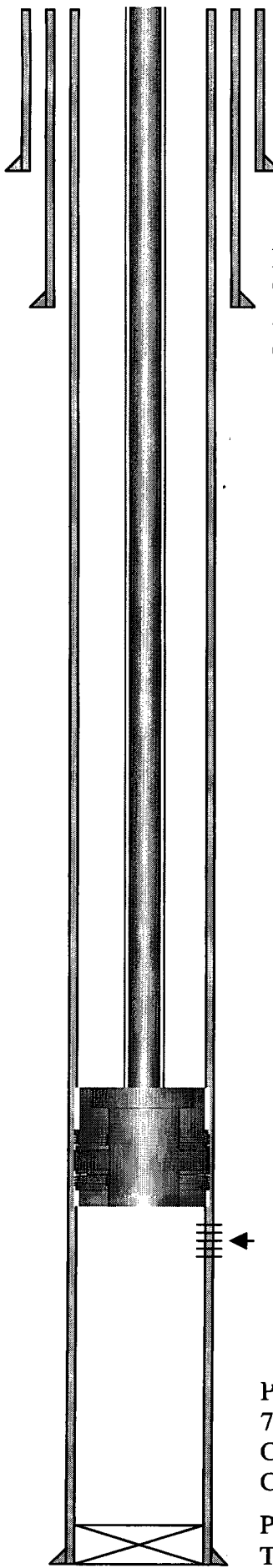
Size: 2 1/2" x 1 1/2" x 26' Trico RXBC Pump # M5-068

Comments: Top Perf: 7762'
Bottom Perf: 7844'
PBTD: 7952'

Perforations:
7762 - 7844

Production Casing
7" 23# & 26#, Set at 8047',
Cmt. W/1280 sks.
Circ. 77 sks.

PBTD: 7952'
TD: 8047'



Spud: 01/18/95
G.L. Elev.: 3743'
K.B.: 3761'

16" Conductor Casing
Set at 65', Cement to Surface
W/readi-mix.

Intermediate Casing
9 5/8" 36#, Csg.
Set at 1222', Cmt. W/750 sks.
Circ. 416 sks.

3-1/2" IPC tbg & pkr @ ~7750'

Perforations:
7762 - 7844

Production Casing
7" 23# & 26#, Set at 8047',
Cmt. W/1280 sks.
Circ. 77 sks.

PBTD: 7952'
TD: 8047'

Attachment A3
Proposed Wellbore Diagram

MOC Federal No.7

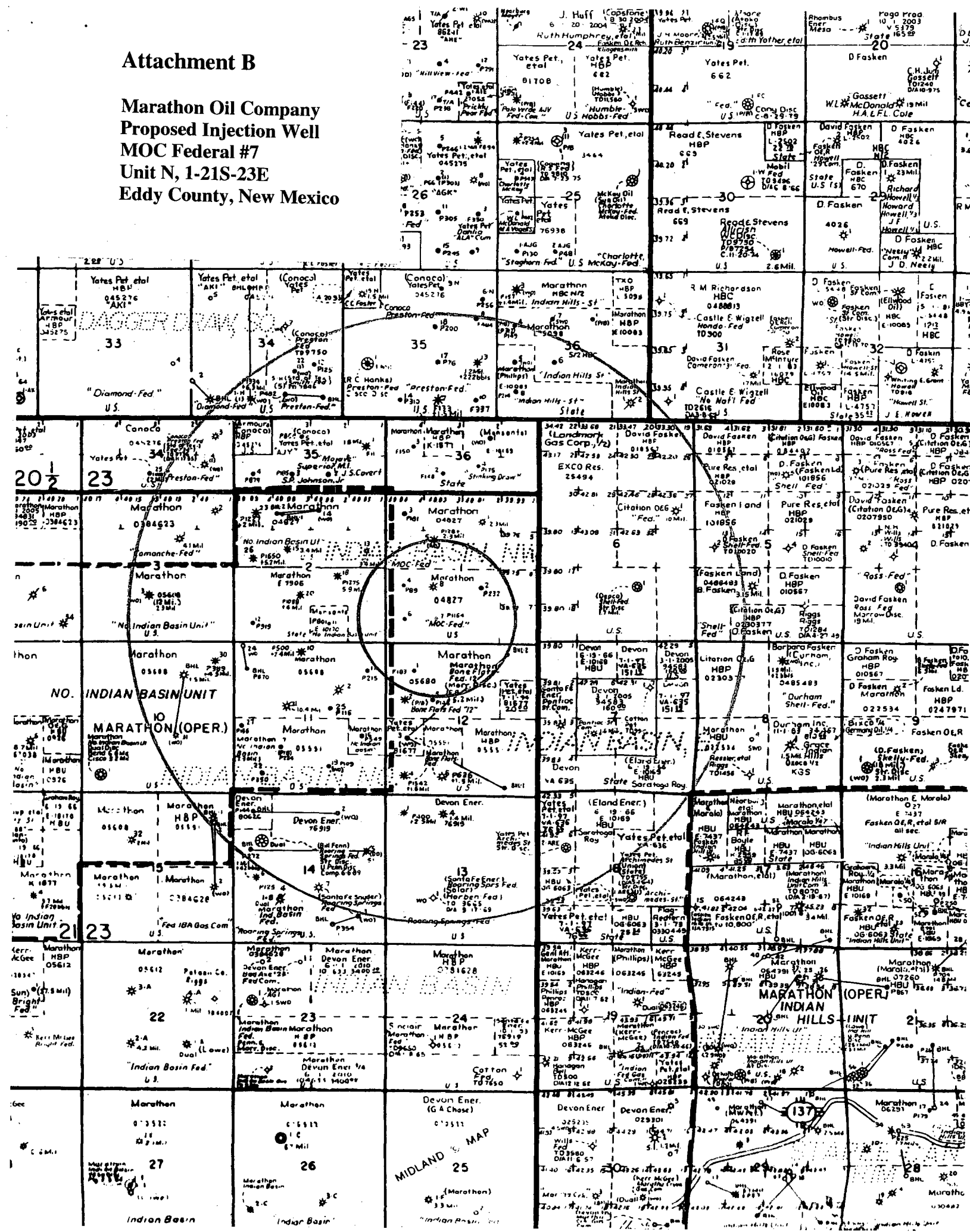
Date: 10/30/2001

U.L. "N", 890' FSL, 1750' FWL

Sec. 1, T-21-S, R-23-E

Eddy Co., N.M.

**Marathon Oil Company
Proposed Injection Well
MOC Federal #7
Unit N, 1-21S-23E
Eddy County, New Mexico**



Attachment C: Table of Wells Within Area of Review

WELL NAME	OPERATOR	LOCATION	TYPE OF WELL	TD	PBSD	SPUD DATE	INITIAL COMP DATE	PERFED INTERVALS	PRODUCING FORMATION	CASING PROGRAM		
										Conductor	Intermediate	Production
MOC FED 2	MOC	1980' FSL 1980' FEL SEC 1, T21S, R23E	OIL	8100'	8015'	3/18/1995	4/25/1995	7555' - 7860'	Cisco & Canyon	16" @ 60', cmt to surface.	9-5/8" @ 1200' cmt w/ 1000 sx; top off w/ 190 sx, circ 25 sx to surface.	7" @ 8100', 1st stage cmt w/ 350 sx, circ 84 sx to surface; 2nd stage cmt w/ 750 sx, circ 187 sx to surface.
MOC FED 4	MOC	1980' FSL 660' FWL SEC 1, T21S, R23E	OIL	8020'	8000'	9/2/1994	10/30/1994	7486' - 7850'	Cisco & Canyon	16" @ 63', cmt to surface.	9-5/8" @ 1230', cmt w/ 800 sx, circ 330 sx to surface.	7" @ 8020', 1st stage cmt w/ 400 sx, circ 50 sx to surface; 2nd stage cmt w/ 750 sx, circ 179 sx to surface.
MOC FED 5	MOC	1650' FNL 1650' FWL SEC 1, T21S, R23E	OIL	7975	7890'	11/22/1994	1/17/1995	7474' - 7814'	Cisco & Canyon	16" @ 72', cmt to surface.	9-5/8" @ 1205', cmt w/ 1000 sks; top off w/ 20 sx to surface.	7" @ 7980', 1st stage cmt w/ 300 sx, circ 149 sx to surface. 2nd stage cmt w/ 865 sx, circ 212 sx to surface.
MOC FED 6	MOC	860' FSL 660' FWL SEC 1, T21S, R23E	OIL	8022'	7939	1/15/1996	3/4/1996	7528' - 7880'	Cisco & Canyon	13-3/8" @ 40', cmt to surface.	9-5/8" @ 1206', cmt w/ 655 sx, circ 200 sx to surface.	7" @ 8022', 1st stage cmt w/ 450 sx, circ 60 sx to surface; 2nd stage cmt w/ 800 sx, circ 130 sx to surface.
MOC FED 8	MOC	2030' FSL 1650' FWL SEC 1, T21S, R23E	OIL GAS	9660'	9565'	2/24/1996	4/12/1996 10/22/1998	7682' - 7866' 9210' - 9447'	Cisco & Canyon Morrow	13-3/8" @ 16', cmt to surface.	9-5/8" @ 1208', cmt w/ 625 sks; top off w/ 265 sx to surface.	7" @ 9660', 1st stage cmt w/ 840 sx, circ 78 sx to surface; 2nd stage cmt w/ 1000 sx, circ 71 sx to surface.
Bone Flats 12 - 1	MOC	990' FNL 990' FWL SEC 12, T21S, R23E	OIL	8090'	8080'	7/7/1994	8/13/1994	7506' - 7900'	Cisco & Canyon	16" @ 52', cmt to surface.	9-5/8" @ 1230', cmt w/ 800 sx, circ 300 sx to surface.	7" @ 8090', 1st stage cmt w/ 360 sx; 2nd stage cmt w/ 675 sx, circ 88 sx to surface.

in SECTION 1
 (UPPER Penn) Average DAILY Per WELL: 168602/4_{oil}/300_{water}

Attachment D: Hydrologic Connection to Sources of Drinking Water

Marathon Oil Company has examined the available geologic and engineering data and has found no evidence of open faults or other hydrologic connection between the proposed injection zone and any underground source of drinking water.

 10 Nov 2003

Richard C. Stever
Geologist
Marathon Oil Company

Attachment E

Southern U.S. Business Unit
Domestic Production



P.O. Box 552
Midland, TX 79702-0552
Telephone 432/682-1626

November 21, 2003

Leslie Theiss
Field Manager
Bureau of Land Management
620 E. Green St.
Carlsbad, New Mexico 88220

Dear Ms. Theiss:

Enclosed please find a copy of OCD Form C-108, Application for Authorization to Inject. The application is for the proposed MOC Federal #7 well located on Unit N of Section 1, T21S & R23E in Eddy County, New Mexico.

Please contact me for questions at 432-687-8314 before 1/1/04, or 713-296-2983 after 1/1/04.

Sincerely,

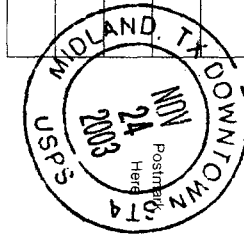
A handwritten signature in cursive script that reads 'Allen C. Brummert'.

Allen C. Brummert

7001 0320 0003 9459 0971

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

Postage \$
Certified Fee
Return Receipt Fee (Endorsement Required)
Restricted Delivery Fee (Endorsement Required)
Total Postage & Fees \$



Sent to
LESLIE THEISS, FLEAMANATE EQ BLM
Street, Apt. No.:
or PO Box No. **620 E GREENE ST**
City, State, ZIP+4 **CHASRAD NM 88220**
PS Form 3800, January 2001 See Reverse for Instructions

Attachment F

Southern U.S. Business Unit
Domestic Production



**Marathon
Oil Company**

P.O. Box 552
Midland, TX 79702-0552
Telephone 432/682-1626

November 21, 2003

Carlsbad Current-Argus
Classified Department
620 S. Main Street
Carlsbad, New Mexico 88220

Dear Carlsbad Current-Argus:

Marathon Oil Company desires to place the public notice, shown below, in the classified section of your newspaper for one day, as required by the New Mexico Oil Conservation Division. Please place this notice in your paper on Sunday, November 23, 2003 or quickly thereafter, and forward an affidavit along with your bill to the undersigned at the above address.

Please contact me for questions at 432-687-8314.

Sincerely,


Allen C. Brummert

Public Notice

Marathon Oil Company, PO Box 552, Midland, TX 79702 has filed Form C-108, Application for Authorization to Inject, with the New Mexico Oil Conservation Division seeking approval for an injection well. The proposed well, the MOC Federal #7 located on Unit N of Section 1, Township 21 South and Range 23 East of Eddy County, New Mexico, will be used to re-inject nearby produced water from the Cisco and Canyon (Upper Pennsylvanian) formations of the South Dagger Draw Upper Pennsylvanian Associated Gas Pool and the Indian Basin Upper Pennsylvanian Gas Pool at a depth of 7762 – 7842 feet with a maximum pressure of 1550 psi and a maximum rate of 5000 BWPD.

Any party opposing the aforementioned must file an objection or request for hearing with the New Mexico Oil Conservation Division, 1220 South St. Francis Drive, Santa Fe, New Mexico, 87505 within 15 days. Additional information can be obtained by contacting Marathon Oil Company at 432-687-8314.



**Marathon
Oil Company**

P.O. Box 552
Midland, TX 79702-0552
Telephone 432/682-1626

December 5, 2003

RECEIVED

DEC 15 2003

Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, NM 87505

William Jones
New Mexico Energy, Minerals, and Natural Resources Department
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Dear Mr. Jones:

Enclosed please find a copy of the "Affidavit of Publication" to complete the requirements of Form C-108, Application for Authorization to Inject for the proposed single well injectivity test in the MOC Federal #7 well, located in Unit N of Section 1 of T21S & R23E in Eddy County, New Mexico. Form C-108 was sent to you under separate cover on November 21, 2003.

Also enclosed, please find a copy of the United States Postal Service return receipts of certified mail for proof that Form C-108 was received by the Oil Conservation Division in Artesia, New Mexico, and the Bureau of Land Management in Carlsbad, New Mexico as surface owner of record.

Please contact me for questions at 432-687-8314 before 1/1/04, or 713-296-2983 after 1/1/04.

Sincerely,

A handwritten signature in cursive script that reads "Allen C. Brummert".
Allen C. Brummert

xc w/ Enclosure:

Tim Gum
District Supervisor
New Mexico Energy, Minerals, and Natural Resources Department
Oil Conservation Division
1301 W. Grand Avenue
Artesia, New Mexico 88210

Any party opposing the
aforementioned must file
an objection or request
for hearing with the New
Mexico Oil Conservation
Division, 1220 South St.
Francis Drive, Santa Fe,
New Mexico, 87505 with-
in 15 days. Additional in-
formation can be obtained
by contacting Marathon
Oil Company at 432-
687-8314.

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. William Jones
Oil Conservation Division
1220 S. St. Francis Dr.
Santa Fe, NM 87505

2. Article Number

(Transfer from service label)

7001 0320 0003 9459 1268

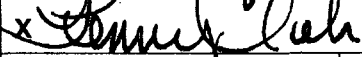
PS Form 3811, August 2001

Domestic Return Receipt

102595-02-M-10

COMPLETE THIS SECTION ON DELIVERY

A. Signature



- ☐
- Agent
-
- ☐
- Addressee

B. Received by (Printed Name)

PENNY CLARK

C. Date of Delivery

12/1/01

D. Is delivery address different from item 1? ☐ YesIf YES, enter delivery address below: ☐ No

DEC - 1 2001

3. Service Type

- ☒
- Certified Mail
- ☐
- Express Mail
-
- ☐
- Registered
- ☒
- Return Receipt for Merchandise
-
- ☐
- Insured Mail
- ☐
- C.O.D.

4. Restricted Delivery? (Extra Fee)

☐ Yes

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. Tim Gum
District Supervisor
Oil Conservation Division
1301 W. Grand Ave.
Artesia, NM 88210

2. Article Number

(Transfer from service label)

7001 0320 0003 9459 1275

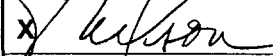
PS Form 3811, August 2001

Domestic Return Receipt

102595-02-M-10

COMPLETE THIS SECTION ON DELIVERY

A. Signature



- ☐
- Agent
-
- ☐
- Addressee

B. Received by (Printed Name)

L. NELSON

C. Date of Delivery

11-25-01

D. Is delivery address different from item 1? ☐ YesIf YES, enter delivery address below: ☐ No

3. Service Type

- ☒
- Certified Mail
- ☐
- Express Mail
-
- ☐
- Registered
- ☒
- Return Receipt for Merchandise
-
- ☐
- Insured Mail
- ☐
- C.O.D.

4. Restricted Delivery? (Extra Fee)

☐ Yes

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Ms. Leslie Theiss
Field Manager
Bureau of Land Management
620 E. Greene St.
Carlsbad, NM 88220

2. Article Number

(Transfer from service label)

7001 0320 0003 9459 0971


PS Form 3811, August 2001

Domestic Return Receipt

102595-02-M-10

COMPLETE THIS SECTION ON DELIVERY

A. Signature



- ☐
- Agent
-
- ☐
- Addressee

B. Received by (Printed Name)

L. THEISS

C. Date of Delivery

11-25

D. Is delivery address different from item 1? ☐ YesIf YES, enter delivery address below: ☐ No

3. Service Type

- ☒
- Certified Mail
- ☐
- Express Mail
-
- ☐
- Registered
- ☒
- Return Receipt for Merchandise
-
- ☐
- Insured Mail
- ☐
- C.O.D.

4. Restricted Delivery? (Extra Fee)

☐ Yes