

1/8338097 SWD

8/30/02

# P REMIER OIL AND GAS, INC.

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August 13, 2002

AUG 15 2002

Oil Conservation Division  
1220 South Saint Francis Drive  
Santa Fe, New Mexico 87505

Attn: William V. Jones Jr. PE

**Re: Administrative Application for SWD  
Dale H. Parke "A" Tract 1 No. 16  
Section 22-17S-30E  
Eddy County, New Mexico**

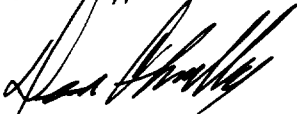
Dear Mr. Jones:

Premier Oil and Gas is in receipt of our returned application accompanied by your letter dated July 16, 2002. As discussed during our telephone conversation, we would request that application continue to be processed and therefore are returning to your attention. Also, enclosed in triplicate, please find the information requested in your letter.

- A.) Engineering Summary
- B.) New Area of Review Map
- C.) Notification List
- D.) Proof of Publication

We are aware that time will be given for parties to object if they choose to. We would ask that you do not hesitate to contact me should you require additional information, so that your review can be completed at the expiration of the waiting period. Thank you for your assistance with this matter. I apologize for any inconveniences that may have been caused.

Sincerely,



Dean Chumbley  
Authorized Agent

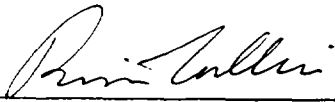
DC/mm  
Enclosures

Engineering Summary  
Dale H. Parke "A" Tract 1 No. 16  
C-108 Application  
26 July, 2002

Premier Oil & Gas does not believe that water disposal into the captioned well will affect nearby Yeso/Paddock producing wells or result in net waste of hydrocarbons. Our reasons for believing this are summarized below.

- The proposed well is structurally low to all Yeso/Paddock producers. The Yeso is water productive in the proposed well. The top of the Yeso is 58 feet lower than the Yeso in the closest producer, the Parke 12. The Parke 12 is structurally lower than any other producer in this area.
- We believe that the injected water will tend to move in an east-west orientation along the Yeso structural axis rather than moving up dip to any producers. The proposed well is located on the flank of a structure oriented on an east-west axis and dipping in excess of 400 feet per mile in a southward direction. All the Yeso producers near this well are located significantly higher (58' to 330') up the structure.
- The Parke 16 is currently perforated in the upper portion of the Yeso. We plan to perforate and treat the lower part of the Yeso when we prepare the well for SWD service. Calculations show that the lower portion of the Yeso has 70% of the porosity-thickness in this well. Because permeability typically increases logarithmically with linear increases in porosity, it can be inferred that the lower portion of the Yeso will take well in excess of 70% of the injected water even further down dip from any producing wells.
- An analogous SWD well, the E.L. Federal No. 8, is disposing into the Yeso 1900 feet southeast of the Parke 16. After 720,000 bbls of water injected, there has been no effect on nearby Yeso producing wells.
- If for some reason the injected water moved radially away (including up dip) from the Parke 16, calculations show that it would take approximately 20 years for the first injected water to reach the nearest producer (Parke 12) located 866' feet away. A 70% displacement efficiency is assumed. The calculations are attached. The total area displaced by the injected water after 20 years is 54 acres.
- If the injected water did move up dip to the nearest producing well, an argument could be made that the injected water actually increases the net hydrocarbon production by displacing oil, that wouldn't be produced otherwise, to the nearest producer.
- Premier Oil & Gas plans to monitor nearby producing wells for any signs that production is being affected by water disposal in the Parke 16. If we see evidence that injection is affecting nearby producers, we will halt injection and determine if the injected water is beneficial or detrimental to nearby production.

In summary, we believe that water injection into the Dale Parke "A" Tract 1 No. 16 will not affect any producing wells or result in net waste of hydrocarbons because the water will be injected down dip of producing wells, the water will not travel up dip, the water will travel down dip of the producers along the east-west strike of the Yeso structural trend, and the water will affect only 54 acres during the first 20 years of injection.

A handwritten signature in cursive script, reading "Brian Collins".

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Brian Collins

Dale Parke A Tract 1 No. 16

Proposed SWD

Unit L, Section 22, T17S, R30E

Thickness (ft.)	Porosity	Porosity Thickness	Cumulative Porosity Thickness
4	0.1	0.4	0.4
4	0.08	0.32	0.72
2	0.08	0.16	0.88
5	0.1	0.5	1.38
4	0.08	0.32	1.7
4	0.11	0.44	2.14
2	0.075	0.15	2.29
4	0.095	0.38	2.67
5	0.08	0.4	3.07
4	0.12	0.48	3.55
6	0.095	0.57	4.12
3	0.075	0.225	4.345
4	0.08	0.32	4.665
2	0.095	0.19	4.855
6	0.075	0.45	5.305
2	0.07	0.14	5.445
3	0.14	0.42	5.865
3	0.13	0.39	6.255
4	0.1	0.4	6.655
5	0.11	0.55	7.205
6	0.095	0.57	7.775
6	0.105	0.63	8.405
		8.405	
10	0.105	1.05	1.05
5	0.06	0.3	1.35
3	0.13	0.39	1.74
3	0.105	0.315	2.055
4	0.09	0.36	2.415
6	0.16	0.96	3.375
5	0.135	0.675	4.05
6	0.13	0.78	4.83
3	0.14	0.42	5.25
20	0.095	1.9	7.15
10	0.145	1.45	8.6
2	0.08	0.16	8.76
5	0.1	0.5	9.26
3	0.12	0.36	9.62
3	0.095	0.285	9.905
8	0.105	0.84	10.745
30	0.1	3	13.745
3	0.125	0.375	14.12
12	0.1	1.2	15.32
6	0.105	0.63	15.95
2	0.115	0.23	16.18
4	0.14	0.56	16.74
2	0.1	0.2	16.94
3	0.11	0.33	17.27
2	0.08	0.16	17.43
4	0.12	0.48	17.91
3	0.09	0.27	18.18
4	0.1	0.4	18.58
5	0.08	0.4	18.98
6	0.105	0.63	19.61
		19.61	

Porosity - Thickness Calculations

Upper  
Yeso

Lower  
Yeso

Dale H. Parke "A" Tract 1 No. 16  
Proposed SWD  
Unit L, Section 22-T17S-R30E

Calculation of Time Required for Injected Water to Reach the Nearest Producing Well

Assumptions:

Distance to nearest well =	866 feet
Avg. injection rate =	800 bwpd
Displacement efficiency =	70%
Irreducible water saturation =	30%
Total porosity-feet =	28.02
Water volume factor =	1.00
Pattern =	Radial from well

When radius = 866 feet, the affected area is:

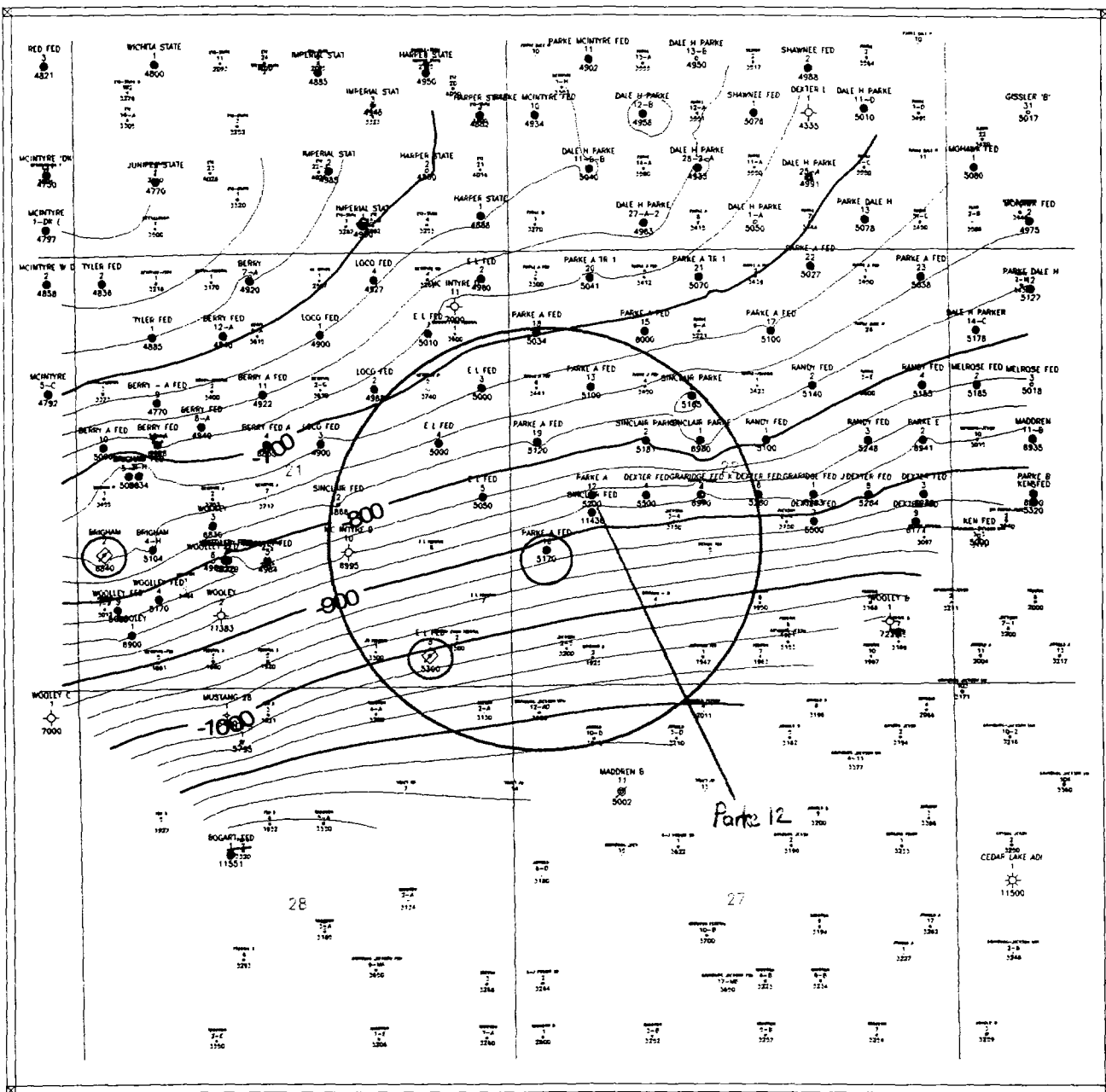
$$A = \pi r^2 = \frac{\pi (866 \text{ ft})^2}{43560 \text{ ft}^2/\text{ac}} = 54 \text{ acres}$$

Volume water injected:

$$\begin{aligned} N &= \frac{7758 A H \phi (1-S_{wi}) (\text{efficiency})}{B_w} \\ &= 7758 (54)(28.02)(1-.3)(0.70)/1.00 \\ &= 5.75 \text{ MMBW} \end{aligned}$$

Time to inject 5.75 MMBW @800 bwpd:

$$T = \frac{5.75 \text{ MMBW}}{800 \text{ bwpd}} = 7190 \text{ days} = 19.7 \text{ years}$$



- Proposed SWD (Parke 16)
- Existing SWD (EL Fed. 8)
- Area of Review

#### LEGEND

- Oil Producer
- Oil Well (Abd)
- ✕ Injection Well
- ◇ SWD Well
- ☆ Gas Well
- ♦ PA well

### Parke A 16 SWD Proposal Sec 22 - 17S - 29E Eddy Co., NM Structure Top Glorieta Sst (CI=25')

1:24000

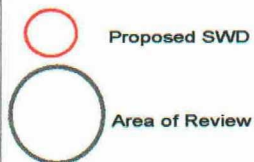
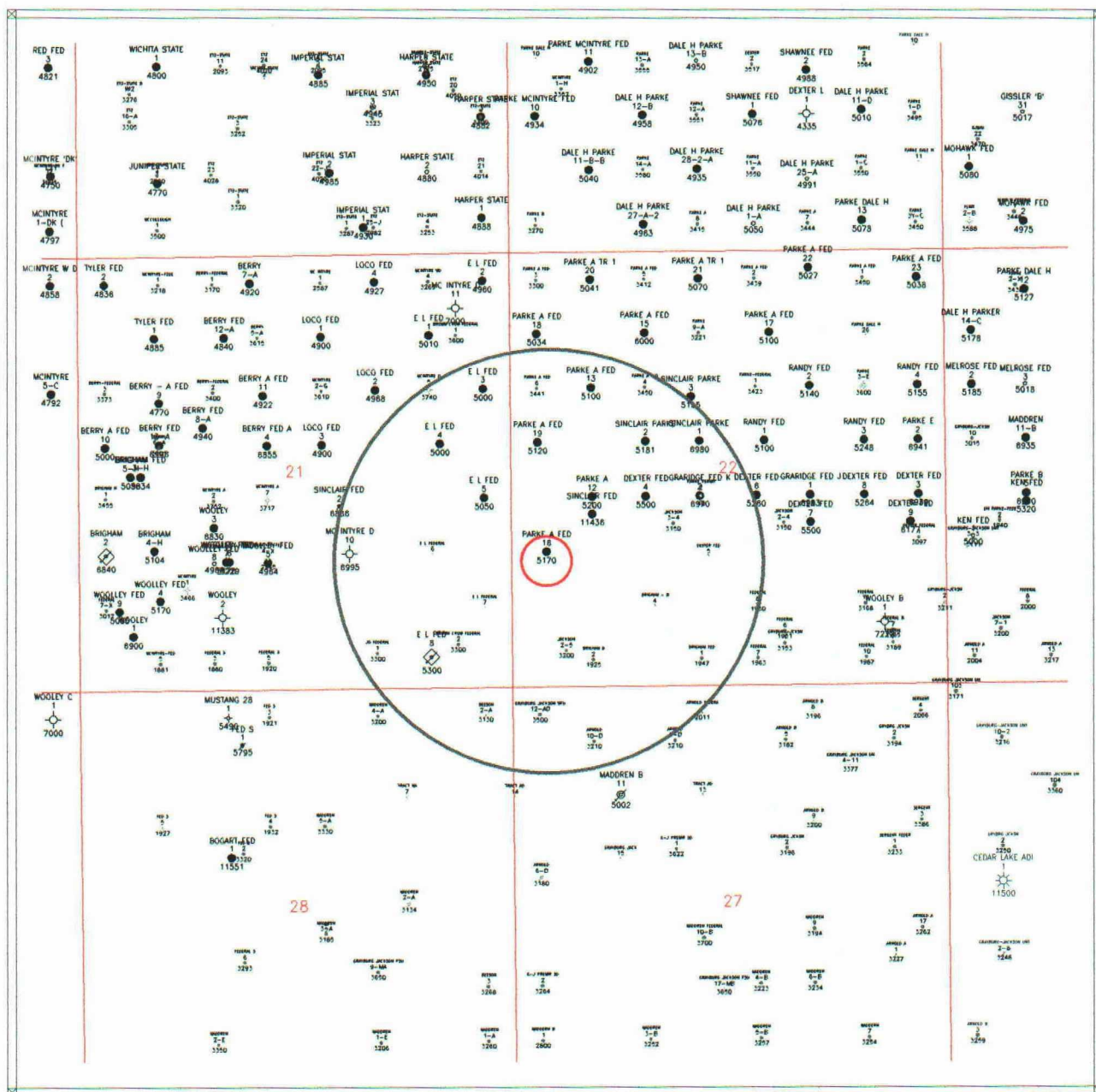
1" = 2000'

mkj July 2002

Glorieta structure mirrors Yaso structure

Dip is to south.

Strike/structural axis is east-west



LEGEND	
●	Oil Producer
×	Oil Well (Abd)
⊗	Injection Well
⊙	SWD Well
⊛	Gas Well
+	PA well
•	Location
•	Expired location

Marbob Energy Corp

Parke A 16 SWD Proposal

Sec 22 - 17S - 29E Eddy Co., NM

Structure Top Glorieta Sst (CI=25')

1:24000		
1" = 2000'		mkj July 2002

**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:

Williams &amp; Son Cattle Company

P O Box 30

Maljamar, NM 88264

Parke A Tr. 1 #16

2. Arti  
(Tra

7002 0860 0006 7056 5091

PS Form 3811, August 2001

Domestic Return Receipt

102595-01-M-2509

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

X

☐ Agent  
☐ Addressee

B. Received by ( Printed Name)

C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes  
If 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.
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1. Article Addressed to:

Nadel &amp; Gssman Permian

601 N. Marienfeld, Ste. 508

Midland, TX 79701

Parke A Tr. 1 #16

2.

7002 0860 0006 7056 5107

PS Form 3811, August 2001

Domestic Return Receipt

102595-01-M-2509

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C. Date of Delivery

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

3. Service Type

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

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☐ Yes**SENDER: COMPLETE THIS SECTION**

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1. Article Addressed to:

Bureau of Land Management

2909 W. 2nd St.

Roswell, NM 88201

Parke A Tr. 1 #16

2.

7002 0860 0006 7056 5114

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C. Date of Delivery

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

3. Service Type

☒ Certified Mail ☐ Express Mail  
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☐ Insured Mail ☐ C.O.D.

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☐ Yes



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1. Article Addressed to:

Marbob Energy Corporation

P O Box 227

Artesia, NM 88211-0227

Parke A Tr 1 #16

7002 0860 0006 7056 5060

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☐ Agent☐ Addressee

B. Received by (Printed Name)

C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes  
If 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**

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- 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:

Mack Energy Corporation

P O Box 1767

Artesia, NM 88211-1767

Parke A Tr. 1 #16

7002 0860 0006 7056 5077

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Domestic Return Receipt

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**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

X

☐ Agent☐ Addressee

B. Received by (Printed Name)

C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes  
If 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**

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1. Article Addressed to:

BP / Arco Permian

P O Box 3092

Houston, TX 77253

Parke A Tr. 1 #16

7002 0860 0006 7056 5084

PS Form 3811, August 2001

Domestic Return Receipt

102595-01-M-2509

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

X

☐ Agent☐ Addressee

B. Received by (Printed Name)

C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes  
If 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**

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- 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:

The Eastland Oil Company  
P O Drawer 3488  
Midland, TX 79702

Parke A Tr 1 #16

2.

7002 0860 0006 7056 5039

PS Form 3811, August 2001

Domestic Return Receipt

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**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

X

☐ Agent☐ Addressee

B. Received by ( Printed Name )

C. Date of Delivery

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**

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- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Phillips Petroleum Company  
4001 Penbrook  
Odessa, TX 79762

Parke A Tr 1 #16

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Domestic Return Receipt

102595-01-M-2509

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A. Signature

X

☐ Agent☐ Addressee

B. Received by ( Printed Name )

C. Date of Delivery

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

7002 0860 0006 7056 5046

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- 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:

Shahara Oil Corporation  
P O Box 3232  
Carlsbad, NM 88221

Parke A Tr 1 #16

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Domestic Return Receipt

102595-01-M-2509

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature

X

☐ Agent☐ Addressee

B. Received by ( Printed Name )

C. Date of Delivery

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

7002 0860 0006 7056 5053