AMEND SWD 5/30/00

# *Highlander Environmental Corp.*

*Midland, Texas*

May 12, 2000

**VIA Certified Mail**

Anadarko Petroleum Corp.
P. O. Box 1330
Houston, Texas 77251-1330

**Re: Application for Amendment to SWD-1 Permit, Dynegy Midstream Services, L.P., Unit Letter "L", Section 27, Township 22 South, Range 37 East, Lea County, New Mexico**

Dear Operator:
Dynegy Midstream Services, L.P. (Dynegy), operator of the Eunice South Gas Plant, has retained Highlander Environmental Corp. (Highlander) prepare an application to amend the permit for SWD-1. In accordance with New Mexico Oil Conservation Division (NMOCD) rules (Form C-108), a copy of the permit application is being provided to Anadarko Petroleum Corp., as an adjacent leaseholder within 1/2-mile of the SWD.

Please call Mr. Cal Wrangham (915) 688-0555, or myself at (915) 682-4559, if you have questions.

Sincerely,
*Highlander Environmental Corp.*

Mark J. Larson, CPG
Senior Project Manager

Encl.

cc: Cal Wrangham - Dynegy
Ronnie Baucom - Dynegy
Mark Ashley - NMOCD - Santa Fe, NM
Chris Williams - NMOCD - Hobbs, NM

*Highlander Environmental Corp.*

*Midland, Texas*

May 12, 2000

Mr. Mark Ashley
Petroleum Engineering Specialist
New Mexico Oil Conservation Division
2040 S. Pacheco
Santa Fe, New Mexico 87505

**Re: Amended Permit Application for SWD Well, Dynegy Midstream Services, L.P., South Eunice Gas Plant, Lea County, New Mexico**

Dear Mr. Ashley:

Dynegy Midstream Services, L.P. (Dynegy) has requested Highlander Environmental Corp. (Highlander) to prepare an amended permit application for an existing salt-water disposal well (SWD-1) at its South Eunice Gas Plant located approximately four (4) miles south of Eunice, New Mexico. The well (API # 30 25 21497) is permitted by the New Mexico Oil Conservation Division (NMOCD), and located in Unit Letter "L", northwest quarter (NW/4) of the southwest quarter (SW/4), Section 27, Township 22 South, Range 37 East, Lea County, New Mexico. Figure 1 presents a location and topographic map.

Ownership information is as follows:

Owner: Dynegy Midstream Services, L. P.

Address: 6 Desta Drive, Suite 3300
Midland, Texas 79705

Telephone: (915) 688-0555

FAX: (915) 688-0552

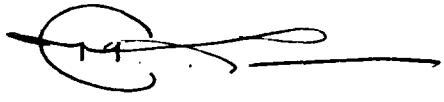
The well was drilled for Skelly Oil Company in November1961. Through several mergers and acquisitions, Dynegy assumed operation of the Eunice South Gas Plant from Texaco Exploration and Production Inc., in July 1998. The well was permitted for disposal of cooling tower, boiler and produced waters into the San Andres formation. The well was completed open-hole from 4010 to 4550 feet below ground surface (BGS). In November 1999, the well failed a mechanical integrity test (MIT), and Dynegy pulled the tubing and packer. It was discovered, at that time, that the packer was set near the bottom of the Grayburg formation, and fluid was discharged to the Grayburg and San Andres formations. The tubing and packer were placed into the

well, with the packer set at approximately 3814 feet BGS. The NMOCD witnessed the testing of the well, following placement of the tubing and packer. The NMOCD required Dynegy to amend the permit to include the Grayburg and San Andres formations.

On April 5, 2000, Dynegy notified offset operators within 1-mile of the SWD of its intent to amend the permit, to allow injection into the Grayburg and San Andres formations. Copies of the notifications and a drawing showing wells within 1-mile of the SWD were submitted to the NMOCD on April 5, 2000. On April 21, 2000, the NMOCD notified Dynegy that it must submit a completed application, in accordance with NMOCD Form C-108 (Application For Authorization To Inject). Appendix A presents the April 5, 2000 correspondence to the NMOCD. Appendix B presents NMOCD correspondence to Dynegy, dated April 21, 2000. Appendix C presents NMOCD Form C-108, and supporting documentation.

Please call Mr. Cal Wrangham with Dynegy at (915) 688-0555, or myself at (915) 682-4559, if you have questions.

Sincerely,
*Highlander Environmental Corp.*



Mark J. Larson, CPG
Senior Project Manager

Encl.

cc: Mr. Cal Wrangham - Dynegy
Mr. Ronnie Baucom - Dynegy
Mr. Chris Williams - NMOCD

# FIGURES

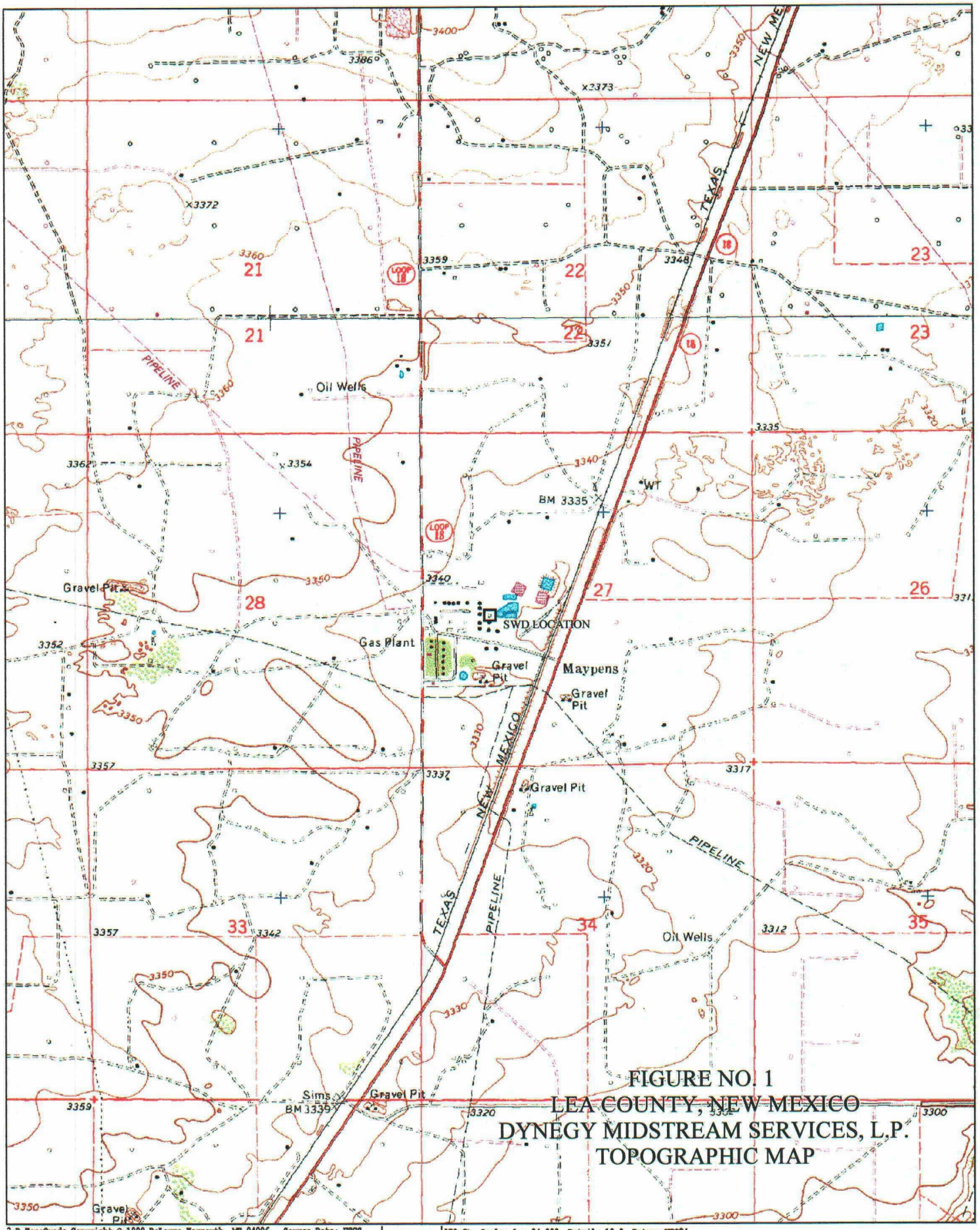



FIGURE NO. 1
LEA COUNTY, NEW MEXICO
DYNEGY MIDSTREAM SERVICES, L.P.
TOPOGRAPHIC MAP

 Source Data: USGS 950 ft Scale: 1 : 24,000 Detail: 13-0 Datum: WGS84

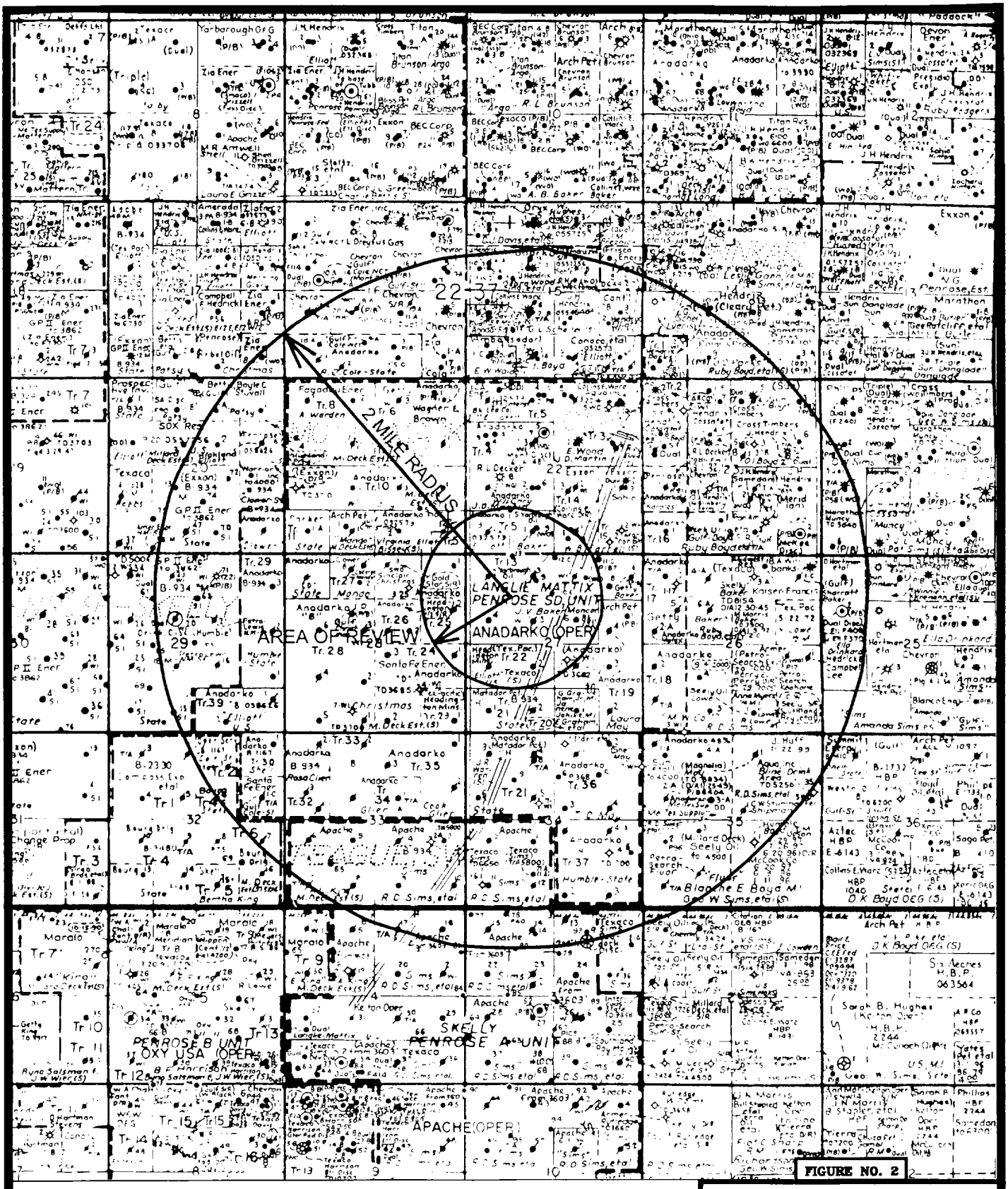



FIGURE NO. 2

TAKEN FROM
SOUTHEAST LEA COUNTY, NEW MEXICO
OWNERSHIP MAP

SCALE: 1"=4000'

LEA COUNTY, NEW MEXICO

DYNEGY MIDSTREAM SERVICES, L.P.

2 MILE & 1/2 MILE AREA OF REVIEW

*HIGHLANDER ENVIRONMENTAL CORP.*
*MIDLAND, TEXAS*

# Appendix A

## Dynegy Correspondence
## April 5, 2000

Dynegy Midstream Services, Limited Partnership
6 Desta Drive, Suite 3300
Midland, Texas 79705
Phone 915.688.0555
Fax 915.688.0552
www.dynegy.com

DYNEGY

April 5, 2000

Mr. Ben Stone
Oil Conservation Division
New Mexico Energy and Minerals Department
2040 South Pacheco
Santa Fe, NM 87505

Re: Disposal Well Order # 29

Dear Mr. Stone:

Dynegy Midstream Services, L. P. operates the Disposal Well at the South Eunice Plant located in Township 22 South, Range 37 East, Section 27, approximately 6 miles Southeast of Eunice, New Mexico in Lea County. The well operates under order # 29. It is currently permitted to inject into the San Andres formation. Dynegy would like to amend the order to include the Grayberg formation. The well has been pulled and inspected with Mr. L. W. Hill and Mr. E. L. Gonzales of your Hobbs district office present. The packer is set at 3814.53 feet. The well is complete but temporarily shut-in until we receive the order change from your office.

Dynegy has prepared an offset operators map covering a one (1) mile Radius of Exposure and have sent the offset operators a letter explaining the requested permit change. A copy of this information is enclosed.

Please contact me with any questions. (915) 688-0542.

Sincerely,

Cal Wrangham
ES&H Advisor
Dynegy Midstream Svc, L. P.

Cc:
Mike Hicks Dynegy
Ronnie Baucom/Dynegy
Bob Bary/Dynegy, Houston
Plant Files

**Dynegy Midstream Services, Limited Partnership**
6 Desta Drive, Suite 3300
Midland, Texas 79705
Phone 915.688.0555
Fax 915.688.0552
www.dynegy.com

DYNEGY

April 5, 2000

Sinclair Oil Company
PO Box 30825
Salt Lake City Utah 84130

Re: SWD #1
T22S, R37E, S27
Lea County, New Mexico

Dear Operator:

Dynegy Midstream Services, L. P. has applied with Mr. Ben Stone of the New Mexico Oil Conservation Division for an amendment of the well permit for SWD#1 (OCD Order #29). The well is located at the Eunice South Gas Processing Plant T22S, R37E, S27. The purpose of the amendment is to include the Grayberg formation into the well injection zone at 3818 feet. The well has been in service since 1961 discharging into the San Andres at 3985 Feet.

Attached is a copy of our permit amendment request for your information and review as an offset operator. Please contact me with any questions (915) 688-0542.

Sincerely,

Cal Wrangham

Cal Wrangham
ES&H Advisor
Dynegy Midstream Services, L. P.

**Dynegy Midstream Services, Limited Partnership**
6 Desta Drive, Suite 3300
Midland, Texas 79705
Phone 915.688.0555
Fax 915.688.0552
www.dynegy.com

DYNEGY

April 5, 2000

Texaco E&P Inc.
PO Box 3109
Midland, TX. 79702

Re: SWD #1
T22S, R37E, S27
Lea County, New Mexico

Dear Operator:

Dynegy Midstream Services, L. P. has applied with Mr. Ben Stone of the New Mexico Oil Conservation Division for an amendment of the well permit for SWD#1 (OCD Order #29). The well is located at the Eunice South Gas Processing Plant T22S, R37E, S27. The purpose of the amendment is to include the Grayberg formation into the well injection zone at 3818 feet. The well has been in service since 1961 discharging into the San Andres at 3985 Feet.

Attached is a copy of our permit amendment request for your information and review as an offset operator. Please contact me with any questions (915) 688-0542.

Sincerely,

Cal Wrangham

Cal Wrangham
ES&H Advisor
Dynegy Midstream Services, L. P.

**Dynegy Midstream Services, Limited Partnership**
6 Desta Drive, Suite 3300
Midland, Texas 79705
Phone 915.688.0555
Fax 915.688.0552
www.dynegy.com

DYNEGY

April 5, 2000

Exxon Company USA
PO Box 2180
Houston, TX. 77252-2180

Re: SWD #1
T22S, R37E, S27
Lea County, New Mexico

Dear Operator:

Dynegy Midstream Services, L. P. has applied with Mr. Ben Stone of the New Mexico Oil Conservation Division for an amendment of the well permit for SWD#1 (OCD Order #29). The well is located at the Eunice South Gas Processing Plant T22S, R37E, S27. The purpose of the amendment is to include the Grayberg formation into the well injection zone at 3818 feet. The well has been in service since 1961 discharging into the San Andres at 3985 Feet.

Attached is a copy of our permit amendment request for your information and review as an offset operator. Please contact me with any questions (915) 688-0542.

Sincerely,

Cal Wrangham

Cal Wrangham
ES&H Advisor
Dynegy Midstream Services, L. P.

**Dynegy Midstream Services, Limited Partnership**
6 Desta Drive, Suite 3300
Midland, Texas 79705
Phone 915.688.0555
Fax 915.688.0552
www.dynegy.com

DYNEGY

April 5, 2000

Hendrix John H Corporation
PO Box 3040
Midland, TX. 79702

Re: SWD #1
T22S, R37E, S27
Lea County, New Mexico

Dear Operator:

Dynegy Midstream Services, L. P. has applied with Mr. Ben Stone of the New Mexico Oil Conservation Division for an amendment of the well permit for SWD#1 (OCD Order #29). The well is located at the Eunice South Gas Processing Plant T22S, R37E, S27. The purpose of the amendment is to include the Grayberg formation into the well injection zone at 3818 feet. The well has been in service since 1961 discharging into the San Andres at 3985 Feet.

Attached is a copy of our permit amendment request for your information and review as an offset operator. Please contact me with any questions (915) 688-0542.

Sincerely,

Cal Wrangham

Cal Wrangham
ES&H Advisor
Dynegy Midstream Services, L. P.

**Dynegy Midstream Services, Limited Partnership**
6 Desta Drive, Suite 3300
Midland, Texas 79705
Phone 915.688.0555
Fax 915.688.0552
www.dynegy.com

DYNEGY

April 5, 2000

Burleson Lewis B Inc.
PO Box 2479
Midland, TX. 79702

Re: SWD #1
T22S, R37E, S27
Lea County, New Mexico

Dear Operator:

Dynegy Midstream Services, L. P. has applied with Mr. Ben Stone of the New Mexico Oil Conservation Division for an amendment of the well permit for SWD#1 (OCD Order #29). The well is located at the Eunice South Gas Processing Plant T22S, R37E, S27. The purpose of the amendment is to include the Grayberg formation into the well injection zone at 3818 feet. The well has been in service since 1961 discharging into the San Andres at 3985 Feet.

Attached is a copy of our permit amendment request for your information and review as an offset operator. Please contact me with any questions (915) 688-0542.

Sincerely,

Cal Wrangham

Cal Wrangham
ES&H Advisor
Dynegy Midstream Services, L. P.

**Dynegy Midstream Services, Limited Partnership**
6 Desta Drive, Suite 3300
Midland, Texas 79705
Phone 915.688.0555
Fax 915.688.0552
www.dynegy.com

DYNEGY

April 5, 2000

Chevron USA Inc.
PO Box 1150
Midland, TX. 79702

Re: SWD #1
T22S, R37E, S27
Lea County, New Mexico

Dear Operator:

Dynegy Midstream Services, L. P. has applied with Mr. Ben Stone of the New Mexico Oil Conservation Division for an amendment of the well permit for SWD#1 (OCD Order #29). The well is located at the Eunice South Gas Processing Plant T22S, R37E, S27. The purpose of the amendment is to include the Grayberg formation into the well injection zone at 3818 feet. The well has been in service since 1961 discharging into the San Andres at 3985 Feet.

Attached is a copy of our permit amendment request for your information and review as an offset operator. Please contact me with any questions (915) 688-0542.

Sincerely,

Cal Wrangham

Cal Wrangham
ES&H Advisor
Dynegy Midstream Services, L. P.

**Dynegy Midstream Services, Limited Partnership**
6 Desta Drive, Suite 3300
Midland, Texas 79705
Phone 915.688.0555
Fax 915.688.0552
www.dynegy.com

DYNEGY

April 5, 2000

Yarborough Oil Company
200 N. Loraine Suite 1400
Midland, TX. 79701

Re: SWD #1
T22S, R37E, S27
Lea County, New Mexico

Dear Operator:

Dynegy Midstream Services, L. P. has applied with Mr. Ben Stone of the New Mexico Oil Conservation Division for an amendment of the well permit for SWD#1 (OCD Order #29). The well is located at the Eunice South Gas Processing Plant T22S, R37E, S27. The purpose of the amendment is to include the Grayberg formation into the well injection zone at 3818 feet. The well has been in service since 1961 discharging into the San Andres at 3985 Feet.

Attached is a copy of our permit amendment request for your information and review as an offset operator. Please contact me with any questions (915) 688-0542.

Sincerely,

Cal Wrangham
ES&H Advisor
Dynegy Midstream Services, L. P.

**Dynegy Midstream Services, Limited Partnership**
6 Desta Drive, Suite 3300
Midland, Texas 79705
Phone 915.688.0555
Fax 915.688.0552
www.dynegy.com

DYNEGY

April 5, 2000

Arch Petroleum Inc.
777 Taylor St.
Ft Worth, TX. 76102

Re: SWD #1
T22S, R37E, S27
Lea County, New Mexico

Dear Operator:

Dynegy Midstream Services, L. P. has applied with Mr. Ben Stone of the New Mexico Oil Conservation Division for an amendment of the well permit for SWD#1 (OCD Order #29). The well is located at the Eunice South Gas Processing Plant T22S, R37E, S27. The purpose of the amendment is to include the Grayberg formation into the well injection zone at 3818 feet. The well has been in service since 1961 discharging into the San Andres at 3985 Feet.

Attached is a copy of our permit amendment request for your information and review as an offset operator. Please contact me with any questions (915) 688-0542.

Sincerely,

Cal Wrangham
ES&H Advisor
Dynegy Midstream Services, L. P

**Dynegy Midstream Services, Limited Partnership**
6 Desta Drive, Suite 3300
Midland, Texas 79705
Phone 915.688.0555
Fax 915.688.0552
www.dynegy.com

DYNEGY

April 5, 2000

Anadarko Petroleum Corporation
PO Box 1330
Houston, TX. 77251-1330

Re: SWD #1
T22S, R37E, S27
Lea County, New Mexico

Dear Operator:

Dynegy Midstream Services, L. P. has applied with Mr. Ben Stone of the New Mexico Oil Conservation Division for an amendment of the well permit for SWD#1 (OCD Order #29). The well is located at the Eunice South Gas Processing Plant T22S, R37E, S27. The purpose of the amendment is to include the Grayberg formation into the well injection zone at 3818 feet. The well has been in service since 1961 discharging into the San Andres at 3985 Feet.

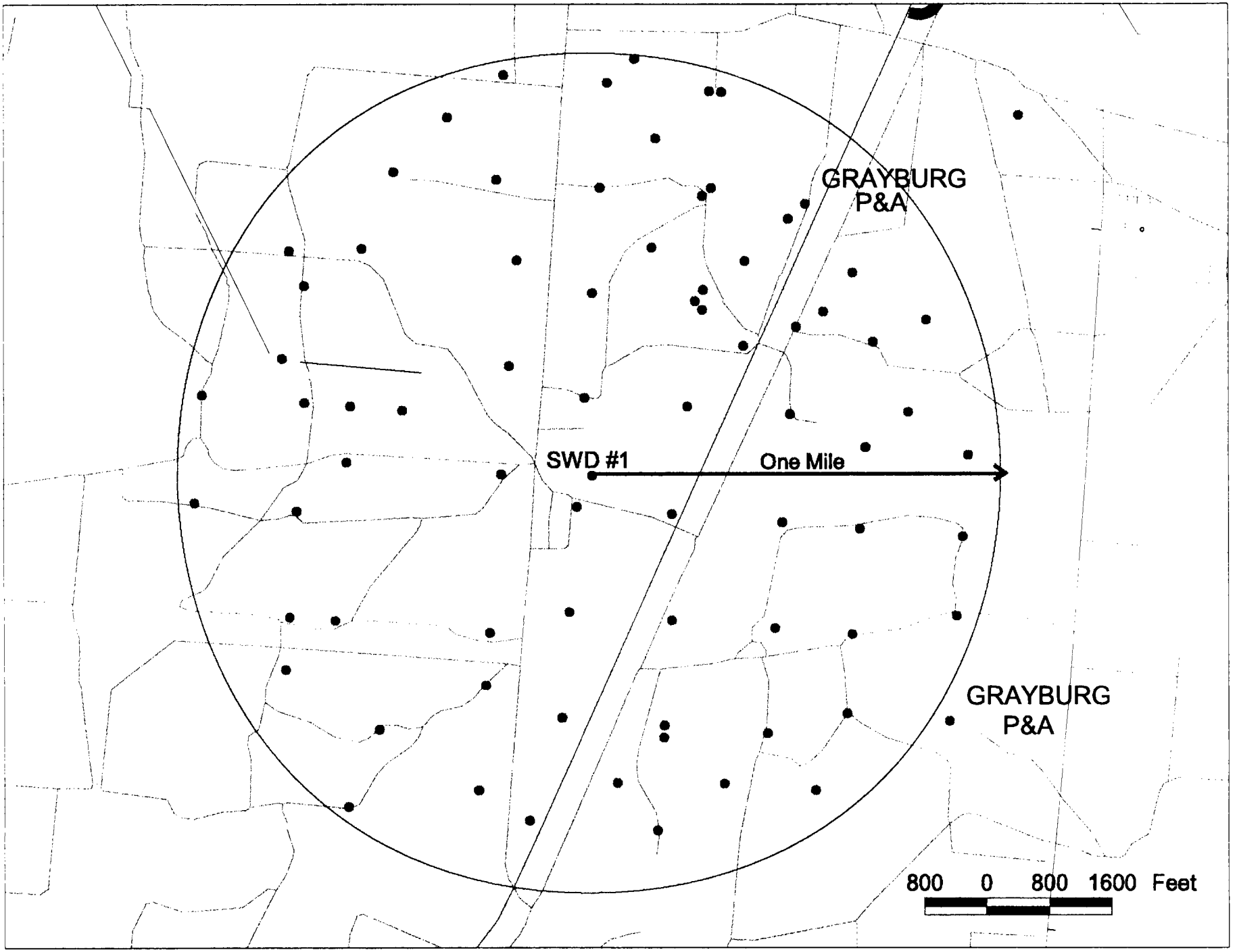
Attached is a copy of our permit amendment request for your information and review as an offset operator. Please contact me with any questions (915) 688-0542.

Sincerely,

Cal Wrangham

Cal Wrangham
ES&H Advisor
Dynegy Midstream Services, L. P.

# South Eunice SWD #1



| ST | CNTY | LEASEWELL | ANADARKO PETROLEUM CORP | LSTATUS | WSTP | LASTTEV | OILC | FIELD | RESERVOIR | API_2 |
|---|---|---|---|---|---|---|---|---|---|---|
| NM | LEA | LANGLIE MATTIX PENROSE SAND UNIT | ANADARKO PETROLEUM CORP | ACT | OIL | O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251038300 |
| NM | LEA | LANGLIE MATTIX PENROSE SAND UNIT | ANADARKO PETROLEUM CORP | ACT | OIL | O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300253165800 |
| NM | LEA | LANGLIE MATTIX PENROSE SAND UNIT | ANADARKO PETROLEUM CORP | ACT | OIL | O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300253165800 |
| NM | LEA | LANGLIE MATTIX PENROSE SAND UNIT | ANADARKO PETROLEUM CORP | ACT | OIL | O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300250896800 |
| NM | LEA | LANGLIE MATTIX PENROSE SAND UT | ANADARKO PETROLEUM CORP | INA | OIL | O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251037900 |
| NM | LEA | WILL CARY | ANADARKO PETROLEUM CORP | INA | OIL | O | M | CARY (MONTOYA) MO | MONTOYA | 300251041100 |
| NM | LEA | LANGLIE MATTIX PENROSE SAND UNIT | ANADARKO PETROLEUM CORP | ACT | OIL | O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251040700 |
| NM | LEA | LANGLIE MATTIX PENROSE SAND UNIT | ANADARKO PETROLEUM CORP | ACT | OIL | O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300253165900 |
| NM | LEA | LANGLIE MATTIX PENROSE SAND UNIT | ANADARKO PETROLEUM CORP | ACT | OIL | O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300253165900 |
| NM | LEA | WILL CARY | ANADARKO PETROLEUM CORP | ACT | OIL | O | M | DRINKARD (DRINKARD) DR | DRINKARD | 300251041300 |
| NM | LEA | LANGLIE MATTIX PENROSE SAND UT | ANADARKO PETROLEUM CORP | INA | OIL | O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251040600 |
| NM | LEA | LANGLIE MATTIX PENROSE SAND UNIT | ANADARKO PETROLEUM CORP | ACT | OIL | O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251040100 |
| NM | LEA | J V BAKER | ANADARKO PETROLEUM CORP | ACT | OIL | O | M | BLINEBRY (BLINEBRY) BL | BLINEBRY | 300251041500 |
| NM | LEA | J V BAKER | ANADARKO PETROLEUM CORP | ACT | OIL | O | M | BLINEBRY (BLINEBRY) BL | BLINEBRY | 300251041500 |
| NM | LEA | J V BAKER | ANADARKO PETROLEUM CORP | ACT | OIL | O | M | BLINEBRY (BLINEBRY) BL | BLINEBRY | 300251041500 |
| NM | LEA | J V BAKER | ANADARKO PETROLEUM CORP | ACT | OIL | O | M | DRINKARD (DRINKARD) DR | DRINKARD | 300251041500 |
| NM | LEA | J V BAKER | ANADARKO PETROLEUM CORP | ACT | OIL | O | M | DRINKARD (DRINKARD) DR | DRINKARD | 300251041500 |
| NM | LEA | J V BAKER | ANADARKO PETROLEUM CORP | ACT | OIL | O | M | DRINKARD (DRINKARD) DR | DRINKARD | 300251041500 |
| NM | LEA | LANGLIE MATTIX PENROSE SAND UT | ANADARKO PETROLEUM CORP | INA | OIL | O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251041400 |
| NM | LEA | J V BAKER | ANADARKO PETROLEUM CORP | ACT | OIL | O | M | TUBB (TUBB) TB | TUBB | 300251041500 |
| NM | LEA | J V BAKER | ANADARKO PETROLEUM CORP | ACT | OIL | O | M | TUBB (TUBB) TB | TUBB | 300251041500 |
| NM | LEA | J V BAKER | ANADARKO PETROLEUM CORP | ACT | OIL | O | M | TUBB (TUBB) TB | TUBB | 300251041500 |
| NM | LEA | LANGLIE MATTIX PENROSE SAND UNIT | ANADARKO PETROLEUM CORP | ACT | OIL | O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300252377100 |
| NM | LEA | FERRELL | ANADARKO PETROLEUM CORP | P&A | OIL | O | M | PENROSE SKELLY (GRAYBURG) GB | GRAYBURG | 300251042100 |
| NM | LEA | LANGLIE MATTIX PENROSE SAND UNIT | ANADARKO PETROLEUM CORP | ACT | OIL | O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251046400 |
| NM | LEA | LANGLIE MATTIX PENROSE SAND UT | ANADARKO PETROLEUM CORP | INA | OIL | O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251046100 |
| NM | LEA | LANGLIE MATTIX PENROSE SAND UNIT | ANADARKO PETROLEUM CORP | INA | OIL | O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251046000 |
| NM | LEA | LAURA J MAY | ANADARKO PETROLEUM CORP | ACT | OIL | O | M | BLINEBRY (BLINEBRY) BL | BLINEBRY | 300252648000 |
| NM | LEA | LAURA J MAY | ANADARKO PETROLEUM CORP | ACT | | O | M | BLINEBRY (BLINEBRY) BL | BLINEBRY | 300252648000 |
| NM | LEA | LAURA J MAY | ANADARKO PETROLEUM CORP | ACT | OIL | O | M | BLINEBRY (BLINEBRY) BL | BLINEBRY | 300252648000 |
| NM | LEA | LANGLIE MATTIX PENROSE SAND UNIT | ANADARKO PETROLEUM CORP | ACT | OIL | O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251048400 |
| NM | LEA | LANGLIE MATTIX PENROSE SAND UNIT | ANADARKO PETROLEUM CORP | ACT | OIL | O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300252808800 |
| NM | LEA | J V BAKER | ANADARKO PETROLEUM CORP | P&A | OIL | O | M | BLINEBRY (BLINEBRY) BL | BLINEBRY | 300251048500 |
| NM | LEA | J V BAKER BATTERY 2 | ANADARKO PETROLEUM CORP | INA | OIL | O | M | DRINKARD (DRINKARD) DR | DRINKARD | 300251048500 |
| NM | LEA | J V BAKER | ANADARKO PETROLEUM CORP | INA | OIL | O | M | BLINEBRY (BLINEBRY) BL | BLINEBRY | 300251048600 |
| NM | LEA | LANGLIE MATTIX PENROSE SAND UT | ANADARKO PETROLEUM CORP | INA | OIL | O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251048300 |
| NM | LEA | LANGLIE MATTIX PENROSE SAND UNIT | ANADARKO PETROLEUM CORP | ACT | OIL | O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300252810800 |
| NM | LEA | J V BAKER BATTERY 2 | ANADARKO PETROLEUM CORP | INA | OIL | O | M | DRINKARD (DRINKARD) DR | DRINKARD | 300251048600 |
| NM | LEA | LANGLIE MATTIX PENROSE SAND UNIT | ANADARKO PETROLEUM CORP | ACT | OIL | O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300252377200 |
| NM | LEA | LANGLIE MATTIX PENROSE SAND UNIT | ANADARKO PETROLEUM CORP | ACT | OIL | O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300253166000 |
| NM | LEA | LANGLIE MATTIX PENROSE SAND UNIT | ANADARKO PETROLEUM CORP | ACT | OIL | O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300253166000 |
| NM | LEA | LANGLIE MATTIX PENROSE SAND UNIT | ANADARKO PETROLEUM INC | ACT | OIL | O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300252846000 |
| NM | LEA | LANGLIE MATTIX PENROSE SAND UT | ANADARKO PETROLEUM INC | P&A | OIL | O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251047900 |
| NM | LEA | LANGLIE MATTIX PENROSE SAND UT | ANADARKO PETROLEUM INC | INA | OIL | O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251047800 |
| NM | LEA | LANGLIE MATTIX PENROSE SAND UNIT | ANADARKO PETROLEUM INC | ACT | OIL | O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251048000 |
| NM | LEA | LANGLIE MATTIX PENROSE SAND UT | ANADARKO PETROLEUM INC | INA | OIL | O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251048100 |
| NM | LEA | LANGLIE MATTIX PENROSE SAND UNIT | ANADARKO PETROLEUM INC | ACT | OIL | O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251048200 |
| NM | LEA | LAURA J MAY | ANADARKO PETROLEUM INC | ACT | OIL | O | M | DRINKARD (DRINKARD) DR | DRINKARD | 300252648000 |
| NM | LEA | LAURA J MAY | ANADARKO PETROLEUM INC | ACT | | O | M | DRINKARD (DRINKARD) DR | DRINKARD | 300252648000 |
| NM | LEA | LAURA J MAY | ANADARKO PETROLEUM INC | ACT | OIL | O | M | DRINKARD (DRINKARD) DR | DRINKARD | 300252648000 |
| NM | LEA | LANGLIE MATTIX PENROSE SAND UT | ANADARKO PETROLEUM INC | INA | OIL | O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251047500 |
| NM | LEA | LANGLIE MATTIX PENROSE SAND UNIT | ANADARKO PETROLEUM INC | ACT | OIL | O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251047400 |
| NM | LEA | LANGLIE MATTIX PENROSE SAND UT | ANADARKO PETROLEUM INC | P&A | OIL | O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251047200 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NM LEA | LANGLIE MATTIX PENROSE SAND UNIT | ANADARKO PETROLEUM INC | ACT | OIL O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251047700 |
| NM LEA | LANGLIE MATTIX PENROSE SAND UT | ANADARKO PETROLEUM INC | INA | OIL O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251047600 |
| NM LEA | LANGLIE MATTIX PENROSE SAND UNIT | ANADARKO PETROLEUM INC | ACT | OIL O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300250906200 |
| NM LEA | LANGLIE MATTIX PENROSE SAND UT | ANADARKO PETROLEUM INC | INA | OIL O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251047000 |
| NM LEA | LANGLIE MATTIX PENROSE SAND UNIT | ANADARKO PETROLEUM INC | ACT | OIL O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251047100 |
| NM LEA | LANGLIE MATTIX PENROSE SAND UT | ANADARKO PETROLEUM INC | INA | OIL O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251047300 |
| NM LEA | LANGLIE MATTIX PENROSE SAND UNIT | ANADARKO PETROLEUM INC | ACT | OIL O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251049800 |
| NM LEA | CHRISTMAS | ANADARKO PETROLEUM INC | INA | OIL O | M | DRINKARD (DRINKARD) DR | DRINKARD | 300251050000 |
| NM LEA | CHRISTMAS | ANADARKO PETROLEUM INC | INA | OIL O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251050000 |
| NM LEA | LANGLIE MATTIX PENROSE SAND UT | ANADARKO PRODUCTION CO | INA | T&A O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300252845800 |
| NM LEA | LANGLIE MATTIX PENROSE SAND UNIT | ANADARKO PRODUCTION CO | ACT | OIL O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300252358000 |
| NM LEA | MANDA B TR C | ANADARKO PRODUCTION CO | P&A | OIL O | M | BLINEBRY (BLINEBRY) BL | BLINEBRY | 300252526400 |
| NM LEA | MANDA B TR C | ARCH PETROLEUM INC | P&A | OIL O | M | DRINKARD (DRINKARD) DR | DRINKARD | 300252526400 |
| NM LEA | MANDA B TR C | ARCH PETROLEUM INC | P&A | OIL O | M | TUBB (TUBB) TB | TUBB | 300252526400 |
| NM LEA | LANGLIE MATTIX PENROSE SAND UNIT | ARCH PETROLEUM INC | ACT | OIL O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251049400 |
| NM LEA | LANGLIE MATTIX PENROSE SAND UT | ARCH PETROLEUM INC | INA | OIL O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251049100 |
| NM LEA | A L CHRISTMAN (NCT-D) | ARCH PETROLEUM INC | P&A | OIL O | M | BLINEBRY (BLINEBRY) BL | BLINEBRY | 300252541200 |
| NM LEA | LANGLIE MATTIX PENROSE SAND UNIT | ARCH PETROLEUM INC | ACT | OIL O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300252361700 |
| NM LEA | LANGLIE MATTIX PENROSE SAND UT | BURLESON LEWIS B INC | INA | OIL O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251050200 |
| NM LEA | LANGLIE MATTIX PENROSE SAND UT | CHEVRON U S A INC | INA | OIL O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251049900 |
| NM LEA | LANGLIE MATTIX PENROSE SAND UNIT | CHEVRON U S A INC | ACT | OIL O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251049500 |
| NM LEA | LANGLIE MATTIX PENROSE SAND UNIT | CHEVRON U S A INC | ACT | OIL O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251049700 |
| NM LEA | LANGLIE MATTIX PENROSE SAND UNIT | CHEVRON U S A INC | ACT | OIL O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251049000 |
| NM LEA | LANGLIE MATTIX PENROSE SAND UT | EXXON CO USA | INA | OIL O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251049200 |
| NM LEA | LANGLIE MATTIX PENROSE SAND UNIT | EXXON CO USA | INA | OIL O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251048700 |
| NM LEA | LANGLIE MATTIX PENROSE SAND UNIT | GETTY OIL CO | ACT | OIL O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251049600 |
| NM LEA | LANGLIE MATTIX PENROSE SAND UNIT | GETTY OIL CO | ACT | OIL O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251048800 |
| NM LEA | LANGLIE MATTIX PENROSE SAND UNIT | HENDRIX JOHN H CORP | ACT | OIL O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251055600 |
| NM LEA | LANGLIE MATTIX PENROSE SAND UT | HENDRIX JOHN H CORP | INA | OIL O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251056600 |
| NM LEA | LANGLIE MATTIX PENROSE SAND UT | OPERATOR | INA | OIL O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251055300 |
| NM LEA | LANGLIE MATTIX PENROSE SAND UNIT | SINCLAIR OIL CORP | ACT | OIL O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251055800 |
| NM LEA | LANGLIE MATTIX PENROSE SAND UT | TEXACO EXPL & PROD INC | INA | OIL O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251056500 |
| NM LEA | LANGLIE MATTIX PENROSE SAND UNIT | TEXACO PRODUCING INC | ACT | OIL O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251057800 |
| NM LEA | LANGLIE MATTIX PENROSE SAND UNIT | YARBOROUGH OIL CO | ACT | OIL O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251273900 |
| NM LEA | LANGLIE MATTIX PENROSE SAND UT | YARBOROUGH OIL CO | INA | OIL O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251057700 |
| NM LEA | LANGLIE MATTIX PENROSE SAND UNIT | YARBOROUGH OIL CO | INA | OIL O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300252181000 |
| NM LEA | LANGLIE MATTIX PENROSE SAND UT | YARBOROUGH OIL CO | P&A | OIL O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251057000 |
| NM LEA | LANGLIE MATTIX PENROSE SAND UT | YARBOROUGH OIL CO | INA | OIL O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251056900 |
| NM LEA | LANGLIE MATTIX PENROSE SAND UNIT | YARBOROUGH OIL CO | ACT | OIL O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251057200 |
| NM LEA | LANGLIE MATTIX PENROSE SAND UNIT | YARBOROUGH OIL CO | ACT | OIL O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300252846100 |
| NM LEA | NEW MEXICO H STATE | YARBOROUGH OIL CO | P&A | OIL O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300251057100 |
| NM LEA | LANGLIE MATTIX PENROSE SAND UNIT | YARBOROUGH OIL CO | ACT | OIL O | M | LANGLIE MATTIX (SEVEN RVR QN GRBG) SR | SEVEN RVR QN GRBG | 300252812600 |

# Appendix B

## NMOCD Correspondence
## April 21, 2000

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

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

APR 25 2000

April 21, 2000

Dynegy Midstream Services, L.P.
6 Desta Drive, Suite 600
Midland, Texas 79705

Attention: Mr. Cal Wrangham

RE: Application to amend SWD-29
Well No. 1
Lea County, New Mexico

Dear Mr. Wrangham:

The above mentioned application to amend SWD-29 is incomplete and is therefore being returned. Please prepare your application pursuant to the enclosed C-108 form.

If you have any questions, please call me at (505) 827-8183.

Sincerely,

Mark Ashley
Petroleum Engineering Specialist

# Appendix C

## NMOCD Form C-108

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL
RESOURCES DEPARTMENT

**OIL CONSERVATION DIVISION**
**2040 SOUTH PACHECO**
**SANTA FE, NEW MEXICO 87505**

FORM C-108
Revised 4-1-98

# APPLICATION FOR AUTHORIZATION TO INJECT

I. PURPOSE: _____ Secondary Recovery _____ Pressure Maintenance __X__ Disposal _____ Storage
Application qualifies for administrative approval? __X__ Yes _____ No

II. OPERATOR: Dynegy Midstream Services, L.P.

ADDRESS: 6 Desta Drive, Suite 3300

CONTACT PARTY: Mr. Cal Wrangham PHONE: (915) 688-0555

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 __X__ 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: Cal Wrangham TITLE: ES & H Advisor

SIGNATURE: [signature] DATE: 5-11-99

* 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: 11/22/61

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

(1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.

(2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.

(3) A description of the tubing to be used including its size, lining material, and setting depth.

(4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District Offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

(1) The name of the injection formation and, if applicable, the field or pool name.

(2) The injection interval and whether it is perforated or open-hole.

(3) State if the well was drilled for injection or, if not, the original purpose of the well.

(4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.

(5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

(1) The name, address, phone number, and contact party for the applicant;

(2) The intended purpose of the injection well: with the exact location of single wells or the Section, Township, and Range location of multiple wells;

(3) The formation name and depth with expected maximum injection rates and pressures; and,

(4) A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 2040 South Pacheco, Santa Fe, New Mexico 87505, within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

Side 1

# INJECTION WELL DATA SHEET

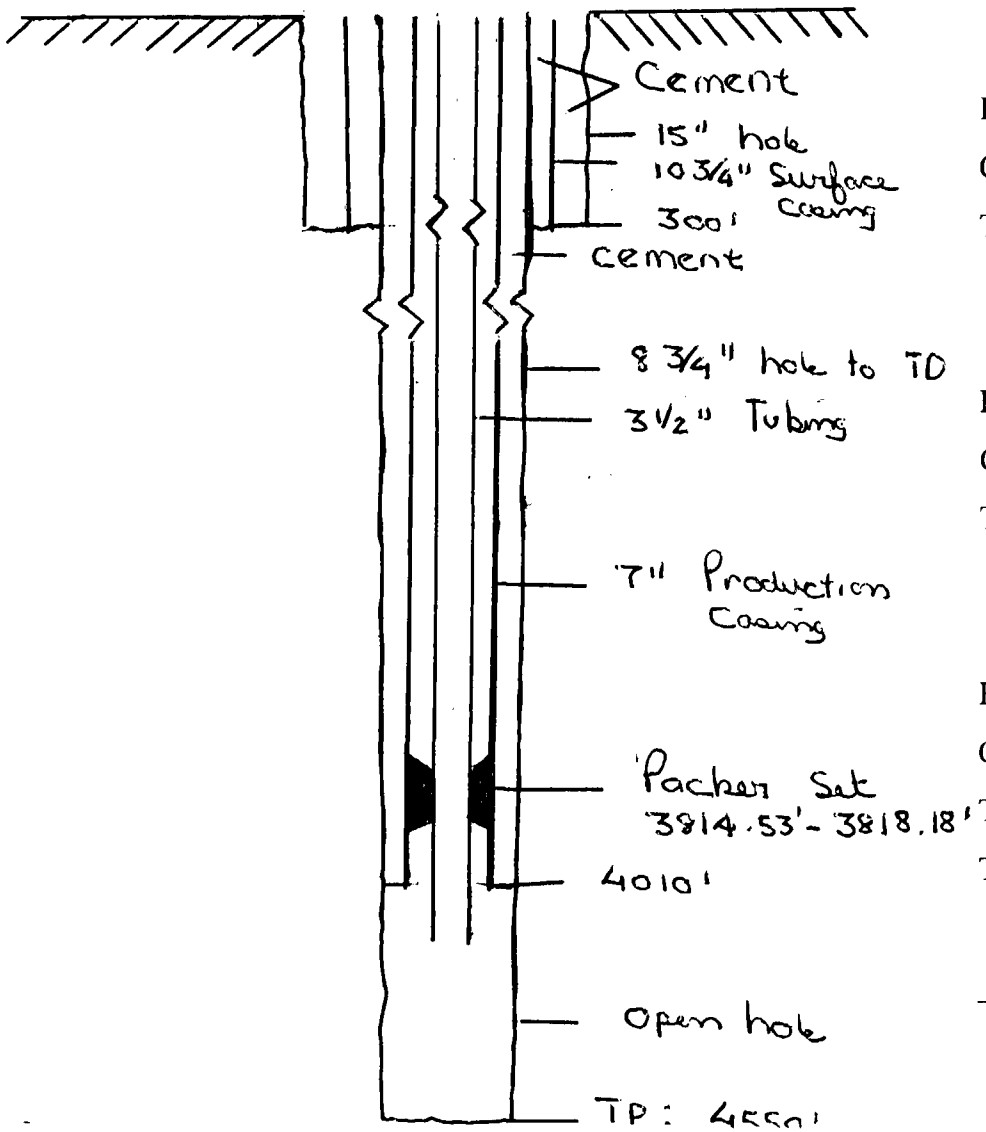
OPERATOR: Dynegy Midstream Services, L.P.

WELL NAME & NUMBER: SWD-1 (API #30 25 21497)

WELL LOCATION: 2580' from South Line / 1200' from West Line | L | 27 | 22 South | 37 East

FOOTAGE LOCATION | UNIT LETTER | SECTION | TOWNSHIP | RANGE

## *WELLBORE SCHEMATIC*




## *WELL CONSTRUCTION DATA*

### Surface Casing

Hole Size: 15" Casing Size: 10 3/4"

Cemented with: 300 sx. *or* _____ ft³

Top of Cement: Surface Method Determined: Plug & Pump

### Intermediate Casing

Hole Size: _____ Casing Size: _____

Cemented with: _____ sx. *or* _____ ft³

Top of Cement: _____ Method Determined: _____

### Production Casing

Hole Size: 8 3/4" Casing Size: 7"

Cemented with: 1750 sx. *or* _____ ft³

Top of Cement: Surface Method Determined: Plug & Pump

Total Depth: 4010'

### Injection Interval

4010 feet to 4550'

(Perforated or Open Hole; indicate which)

# INJECTION WELL DATA SHEET

Tubing Size: 3 1/2" Lining Material: Plastic

Type of Packer: R-4 Treating and Production

Packer Setting Depth: 3,814.53 - 3,818.18'

Other Type of Tubing/Casing Seal (if applicable): _____

## Additional Data

1. Is this a new well drilled for injection? _____ Yes __X__ No

   If no, for what purpose was the well originally drilled? ~~SWD~~

2. Name of the Injection Formation: Grayburg/San Andres

3. Name of Field or Pool (if applicable): Langlie Mattix

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. _____

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: Overlying (Ascending Order): Grayburg/Queen/Seven Rivers (2880' - 3692') Underlying: Blinebry (5450 - 5550')

   Note: No wells penetrate injection zone in Area of Review, based on NMOCD well records (5/3/00)

## Attachment A

## Supplement to Form C-108

**Attachment A**

**Supplement to Form C-108**
**May 2000**

---

**Item**

**I.** Refer to Form C-108

**II.** Refer to Form C-108

**III.** Refer to Form C-108

**IV.** Refer to Form C-108

**V. Area of Review**

Figure 2 presents a map showing all wells and leases within 2-miles of SWD-1. The Area of Review shows all wells and leases within 1/2-mile of SWD-1.

**VI. Tabulation of Well Data**

On May 3, 2000, Highlander personnel reviewed well files at the NMOCD District I Office, located in Hobbs, New Mexico. Records reviewed included producing, temporarily abandoned and permanently plugged wells that penetrate the proposed injection zone, within the Area of Review. Based on the record review, no wells penetrate the proposed injection zone within the Area of Review.

**VII. Proposed Operation**

1. Well SWD-1 will operate at an average injection rate between 1,700 to 1,750 barrels (bbl) per day. The maximum injection rate is anticipated to be approximately 2,300 to 2,350 bbl per day.

2. Well SWD-1 will be operated as a closed system, for disposal of produced water, cooling tower and boiler blowdown water contained in piping and tanks.

3. The average and maximum injection pressures will be approximately 600 pounds per square inch (psi) and 750 psi, respectively.

4. Source(s) of injection fluid will include produced water, cooling tower and boiler blowdown water. No incompatibility issues exist between the injected fluids and receiving formation(s). Representative samples of injected fluid were obtained on December 2, 1998, and from January 20 to

**Attachment A**
**(Continued)**

**Item**

27, 1999. Unichem analyzed the samples, for anions, cations, pH and metals. Attachment A-1 presents laboratory analytical data sheets.

5. Since no wells penetrate the proposed injection zone in the Area of Review, no data from formation samples is available for the Grayburg and San Andres formations. However, analyses from produced water samples for the San Andres formation in West Texas were reviewed, and reported the following:

| Analyte | Concentration (mg/L) |
|---|---|
| Calcium | 740 - 19,800 |
| Magnesium | 310 - 7,900 |
| Sodium | 4,400 - 67,000 |
| Bicarbonate | 210 - 1,840 |
| Sulfate | 350 - 4,900 |
| Chloride | 19,000 - 140,000 |
| Total Dissolved Solids | 25,010 - 241,9340 |
| Specific Gravity ($60^0/60^0$) | 1.033 - 1.154 |

Note: Analyses after Society of Petroleum Engineers, "Petroleum Engineering Handbook", 1987.

The New Mexico Bureau of Mines & Mineral Resources (1975) has also published data for chloride concentrations in samples from the San Andres formation outside the Area of Review, which reported concentrations from 2,700 mg/L to 80,000 mg/L. Samples from the Grayburg formation reported chloride concentrations from 2,800 mg/L to 89,000 mg/L.

**VIII. Geological and Groundwater Quality Information**

The well is located in the Central Basin Platform area of the Permian basin. The Central Basin Platform is an area between the Delaware basin to the west and Permian basin to the east. Rocks dip to the west toward the Delaware basin, and to the east toward the Permian basin. The Grayburg formation is overlain by a relatively thick section of Mesozoic and Cenozoic-age rocks, as much as 3,000 feet thick. The Grayburg formation was encountered at approximately 3,692 feet BGS, during drilling SWD-1. The Grayburg formation consists of alternating units of yellowish-gray dolomite and sandstone, and is about 270 feet thick. The San Andres formation was encountered at about 3,962 feet BGS, during drilling

**Attachment A**
**(Continued)**

**Item**

SWD-1, and consists of interbedded units of thick-bedded, brownish-gray dolomite and sandstone. The San Andres formation is in excess of 600 feet thick.

According to published information and data derived from investigations at the Eunice South Gas Plant, groundwater occurs in unconsolidated sands and sandstones of the Pliocene-age Ogallala formation. The Ogallala formation is a major source for groundwater in the area, and produces from a few to as much as 750 gallons per minute (gpm). The Ogallala formation can be as much as 300 feet thick, and is about 100 feet thick in the vicinity of the Eunice South Gas Plant. Groundwater is generally encountered at about 50 feet BGS.

The Ogallala formation is underlain by the Triassic-age Chinle formation, also known as "Red Beds". The Chinle formation consists of interbedded units of red and green claystone, fine-grained sandstone and siltstone. The Chinle formation is about 1,250 feet thick, and yields small amounts (i.e., less than 10 gpm) of highly mineralized water. Minerialization is generally the result of dissolution of naturally occurring gypsum that creates high sulfate concentrations. The Triassic-age Santa Rosa sandstone underlies the Chinle formation. The Santa Rosa is comprised of red, green to white, coarse-grained quartz sand, and is from approximately 140 to 300 feet thick. Groundwater yields from the Santa Rosa are also small, however, some wells may produce as much as 100 gpm. Groundwater from the Santa Rosa is generally poor, due to high sulfate concentrations. Rocks underlying the Santa Rosa sandstone are chiefly shale, siltstone, sandstone, and may produce some highly mineralized water. However, no wells are known to produce from the lower part of the red beds.

The base of the red beds was observed approximately 1,138 feet BGS, during drilling SWD-1. Rock samples collected during drilling SWD-1, indicate that the red beds are underlain by a sequence of anhydrite, salt, sand and dolomite approximately 2,400 feet thick. Groundwater in these units is not useable, to elevated levels of dissolved salts. According to the published literature, the red beds likely retard the interchange of water between the evaporite units and shallow sandstone units.

## IX. Proposed Stimulation Program

No stimulation program is currently anticipated, however, the well bore may be periodically acidized to remove scale and mineralization, as needed. Well SWD-1 was acidized in July 1998.

**Attachment A**
**(Continued)**

---

Item

**X. Logging and Test Data**
The well log and test data for SWD-1 is available for review at the NMOCD District I Office, located in Hobbs, New Mexico.

**XI. Chemical Analyses from Water Wells and Monitoring Wells**
Laboratory analyses of groundwater samples from water wells in the vicinity of the Eunice South Gas Plant were previously submitted to NMOCD.

**XII. Statement of Data Reviewed**
Well files were reviewed at the NMOCD District I Office, located in Hobbs, New Mexico, to determine the potential for open faults or hydrologic connections between the disposal zone and any underground sources of drinking water. According to NMOCD well records, no wells penetrate the proposed disposal zone, in the Area of Review, that could provide a connection between the injection zone and underground sources of drinking water. Records for several injection wells, permitted for used for enhanced recovery of petroleum in shallower producing formations, were reviewed in the NMOCD files. The depths of wells completed in the shallower petroleum producing formations do not indicate that open faults are present, which may act as connections between the injection zone and underground sources of drinking water.

**XIII. Proof of Notice**
On April 5, 2000, Dynegy provided notifications to offsetting leaseholders within the Area of Review, of its intent to modify the injection zone for SWD-1. Dynegy will publish an official advertisement in the newspaper for circulation in Lea County, New Mexico. Proof of publication, consisting of a copy of the legal advertisement will be provided to the NMOCD. Appendix A-2 presents a copy of the Public Notice.

**XIV. Certification**
Refer to Form C-108

**Attachment A-1**

**Unichem Laboratory Analyses**
**12/28/98 and 01/20-27/99**

**UNICHEM**
A Division of BJ Services Company

**Dynegy**
**Eunice South Plant**
**Brad Woody**

Report Date: 12-17-98
Lab in Date: 12-17-98
Sample Date: 12-2-98

## Industrial Water Analysis

| | | Waste Water Well |
|---|---|---|
| **pH:** | | 6.90 |
| **Specific Conductance:** | (umhos) | 40,000 |
| **Phenol Alkalinity:** | ($CaCO_3$) | 0 |
| **Total Alkalinity:** | ($CaCO_3$) | 184 |
| **Total Hardness:** | ($CaCO_3$) | 2224 |
| **Calcium:** | ($CaCO_3$) | 1532 |
| **Magnesium:** | ($CaCO_3$) | 692 |
| **Chloride:** | (Cl) | 6,248 |
| **Sulfate:** | ($SO_4$) | 1075 |
| **Ortho Phosphate:** | ($PO_4$) | 2.68 |
| **Iron:** | (Fe) | 1.70 |
| **Silica:** | ($SiO_2$) | 10.5 |

* indicates tests were not run
All results are expressed in mg/l except pH and specific conductance

If you have any questions or require further information, please contact us.

Lab Analyst

Krissy Thompson

Krissy Thompson

Approved by

Kelly Tooker

Kelly Tooker

P O Box 1499 • 707 N Leech Street • Hobbs, NM 88240 • (505) 393-7751 Office • (505) 393-6754 Fax

**UNICHEM**
A Division of BJ Services Company

**Dynegy**
**Eunice South Plant**
**Brad Woody**

Report Date: 2-5-99
Lab in Date: 2-5-99
Sample Date: 1-20 to 27-99

## Industrial Water Analysis

| | | 1/23 10:30 p.m. | 1/24 11 a.m. | 1/24 4:30 p.m. | 1/25 11 a.m. | 1/25 5:30 p.m. | 1/25 11:30 p.m. | 1/26 1 p.m. | 1/26 6 p.m. | 1/27 12 a.m. | 1/27 12 p.m. | Average |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **pH:** | | 6.91 | 7.03 | 7.06 | 6.97 | 6.96 | 6.95 | 7 | 6.92 | 6.93 | 6.98 | 6.89 |
| **Specific Conductance:** | (umhos | 2 450 | 2,125 | 2,100 | 2,075 | 2,365 | 2,950 | 2,550 | 2,800 | 2,590 | 2,450 | 3481.5 |
| **Phenol Alkalinity:** | (CaCO: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Total Alkalinity:** | (CaCO: | 320 | 320 | 340 | 360 | 240 | 320 | 260 | 340 | 360 | 340 | 295 |
| **Total Hardness:** | (CaCO: | 680 | 840 | 700 | 900 | 820 | 1020 | 760 | 1440 | 460 | 540 | 842 |
| **Calcium:** | (CaCO: | 280 | 240 | 240 | 240 | 220 | 240 | 240 | 320 | 320 | 240 | 286 |
| **Magnesium:** | (CaCO: | 400 | 600 | 460 | 660 | 600 | 780 | 520 | 1120 | 140 | 300 | 556 |
| **Chloride:** | (Cl) | 320 | 100 | 220 | 240 | 280 | 520 | 280 | 340 | 260 | 560 | 569 |
| **Sulfate:** | ($SO_4$) | 195 | 180 | 175 | 205 | 185 | 190 | 165 | 155 | 165 | 170 | 274.75 |
| **Ortho Phosphate:** | ($PO_4$) | 0.95 | 6.7 | 3.6 | 1.7 | 1.65 | 1.3 | 0.55 | 0.45 | 0.25 | 0.35 | 4.22 |
| **Iron:** | (Fe) | 1.6 | 1.25 | 2.25 | 3.25 | 1.5 | 1.6 | 0.7 | 1.2 | 0.45 | 0.85 | 1.59 |
| **Color:** | | amber | amber | amber | clear | amber | clear | clear | clear | clear | clear | |
| **Hydrocarbon in sample:** | | no | yes | yes | yes | yes | yes | no | no | no | no | |

If you have any questions or require further information, please contact us.

Lab Analyst
Krissy Thompson
Krissy Thompson

Approved by
Kelly Tooker
Kelly Tooker

**UNICHEM**
A Division of BJ Services Company

Disposal Water Samples

**Dynegy**
**Eunice South Plant**
**Brad Woody**

Report Date: 2-5-99
Lab in Date: 2-5-99
Sample Date: 1-20 to 27-99

## Industrial Water Analysis

| | | 1/20 5:00p.m. | 1/20 11:30 p.m. | 1/21 9 a.m. | 1/21 1 p.m. | 1/21 7 p.m. | 1/22 12 a.m. | 1/22 4 p.m. | 1/22 11:45 p.m. | 1/23 11 a.m. | 1/23 7 p.m. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **pH:** | | 6.05 | 7.32 | 7.56 | 6.68 | 6.90 | 6.6 | 6.85 | 6.92 | 6.55 | 6.71 |
| **Specific Conductance:** | (umhos) | 8,750 | 7,000 | 5,500 | 5,250 | 3,590 | 3 500 | 2,950 | 2,725 | 2,910 | 3,000 |
| **Phenol Alkalinity:** | ($CaCO_3$) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Total Alkalinity:** | ($CaCO_3$) | 240 | 220 | 300 | 280 | 320 | 300 | 180 | 340 | 180 | 340 |
| **Total Hardness:** | ($CaCO_3$) | 540 | 520 | 860 | 1080 | 1160 | 1260 | 900 | 700 | 960 | 720 |
| **Calcium:** | ($CaCO_3$) | 280 | 380 | 360 | 240 | 380 | 300 | 180 | 340 | 300 | 380 |
| **Magnesium:** | ($CaCO_3$) | 260 | 140 | 500 | 820 | 780 | 960 | 720 | 360 | 660 | 340 |
| **Chloride:** | (Cl) | 1,680 | 1,580 | 1160 | 1360 | 440 | 580 | 220 | 380 | 480 | 380 |
| **Sulfate:** | ($SO_4$) | 375 | 580 | 600 | 540 | 315 | 365 | 235 | 240 | 245 | 215 |
| **Ortho Phosphate:** | ($PO_4$) | 8.5 | 4.6 | 16.9 | 21.9 | 8.05 | 2.7 | 1.2 | 1.1 | 0.75 | 1.1 |
| **Iron:** | (Fe) | 1.30 | 0.5 | 0.6 | 1.6 | 1.2 | 2.3 | 1.95 | 2.85 | 3.55 | 1.2 |
| **Color:** | | clear | clear | amber | amber | amber | clear | clear | amber | amber | clear |
| **Hydrocarbon in sample:** | | no | no | no | yes | no | no | no | yes | yes | no |

* indicates tests were not run
All results are expressed in mg/l except pH and specific conductance.

P O. Box 1499 • 707 N. Leech Street • Hobbs, NM 88240 • (505) 393-7751 Office • (505) 393-6754 Fax

# Appendix A-2

## Public Notice

**Public Notice**

Dynegy Midstream Services has submitted an application with the New Mexico Oil Conservation Division to amend the permit for a Salt Water Disposal (SWD) well at its South Eunice Gas Plant. The SWD is used for disposal of fluids from gas plant operations, including cooling tower, boiler and produced waters. The well is located 2580 feet from the south line, and 1200 feet from the west line, Unit Letter L, Section 27, Township 22 South, Range 37 East, Lea County, New Mexico. The permit is amended to include fluid injection into the Grayburg and San Andres formations below approximately 3,820 feet. The maximum injection rate and pressure is anticipated at 2,350 bbl/day and 750 psi, respectively. A copy of the application is available at the New Mexico Oil Conservation Division, District I office, located at 1624 French Drive, Hobbs, New Mexico. Interested parties must file objections or requests for hearing with the New Mexico Oil Conservation Division, located at 2040 South Pacheco, Santa Fe, New Mexico 87505, within 15 days.

Contact Information
Dynegy Midstream Services, L.P.
6 Desta Drive, Suite 3300
Midland, Texas 79705
(915) 688-0555
Mr. Cal Wrangham

*Highlander Environmental Corp.*

*Midland, Texas*

May 18, 2000

Mr. Mark Ashley
Petroleum Engineering Specialist
New Mexico Oil Conservation Division
2040 S. Pacheco
Santa Fe, New Mexico 87505

**Re: Affidavit of Publication, SWD-1 Well Permit Application, Dynegy Midstream Services, L.P., South Eunice Gas Plant, Lea County, New Mexico**

Dear Mr. Ashley:

On behalf of Dynegy Midstream Services, L.P. (Dynegy), please find enclosed the affidavit of publication pertaining to the above-referenced salt-water disposal (SWD) well permit application. The legal notice for the application was published in the Hobbs Sun News on May 13, 2000. The application was submitted to the New Mexico Oil Conservation Division (NMOCD).

Also, enclosed is a copy of the returned receipt for the copy of the application that was mailed to Anadarko Petroleum Corp. (Anadarko). Anadarko was the only offsetting lease holder within 1/2 mile of the SWD.

Please call Mr. Cal Wrangham at (915) 688-0555, or myself at (915) 682-4559, if you have questions.

Sincerely,
*Highlander Environmental Corp.*

Mark J. Larson, CPG, CGWP
Senior Project Manager

Encl.

cc: Cal Wrangham - Dynegy
Ronnie Baucom - Dynegy
Chris Williams - NMOCD, District I

AFFIDAVIT OF PUBLICATION

COPY

State of New Mexico,
County of Lea.

I, KATHI BEARDEN

Publisher

of the Hobbs News-Sun, a newspaper published at Hobbs, New Mexico, do solemnly swear that the clipping attached hereto was published once a week in the regular and entire issue of said paper, and not a supplement thereof for a period.

of 1

_____ weeks.

Beginning with the issue dated

May 13 2000

and ending with the issue dated

May 13 2000

Kathi Bearden

Publisher

Sworn and subscribed to before me this 15th day of

May 2000

Jodi Henson

Notary Public.

My Commission expires
October 18, 2000
(Seal)

This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937, and payment of fees for said publication has been made.

**LEGAL NOTICE**
**May 13, 2000**

Dynegy Midstream Services has submitted an application with the New Mexico Oil Conservation Division to amend the permit for Salt Water Disposal (SWD) well at its South Eunice Gas Plant. The SWD is used for disposal of fluids from gas plant operations, including cooling tower, boiler and produced waters. The well is located 2580 feet from the south line, and 1200 feet from the west line, Unit Letter L, Section 27, Township 22 South, Range 37 East, Lea County, New Mexico. The permit is amended to include fluid injection into the Grayburg and San Andres formations below approximately 3,820 feet. The maximum injection rate and pressure is anticipated at 2,350 bbl/day and 750 psi, respectively. A copy of the application is available at the New Mexico Oil Conservation Division, District I office, located at 1624 French Drive, Hobbs, New Mexico. Interested parties must file objections or requests for hearing with the New Mexico Oil Conservation Division, located at 2040 South Pacheco, Santa Fe, New Mexico 87505, within 15 days.

Contact Information
Dynegy Midstream Services, L.P.
6 Desta Drive, Suite 3300
Midland, Texas 79705
(915) 688-0555
Mr. Cal Wrangham
#17402

01105313000 01540962

Highlander Environmental Corp.
1910 Big Spring
MIDLAND, TX 79705