

ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau -

ADMINISTRATIVE APPLICATION COVERSHEET

THIS COVERSHEET IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS

Application Acronyms:

[NSP-Non-Standard Proration Unit] [NSL-Non-Standard Location]  
 [DD-Directional Drilling] [SD-Simultaneous Dedication]  
 [DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]  
 [PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]  
 [WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]  
 [SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]  
 [EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

[1] TYPE OF APPLICATION - Check Those Which Apply for [A]

[A] Location - Spacing Unit - Directional Drilling

☐ NSL ☐ NSP ☐ DD ☐ SD

Check One Only for [B] and [C]

[B] Commingling - Storage - Measurement

☒ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

[C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery

☐ WFX ☐ PMX ☐ SWD ☐ IPI ☐ EOR ☐ PPR

AUG 31 1998

[2] NOTIFICATION REQUIRED TO: - Check Those Which Apply, or ☐ Does Not Apply

[A] ☐ Working, Royalty or Overriding Royalty Interest Owners

[B] ☒ Offset Operators, Leaseholders or Surface Owner

[C] ☐ Application is One Which Requires Published Legal Notice

[D] ☐ Notification and/or Concurrent Approval by BLM or SLO

U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office

[E] ☐ For all of the above, Proof of Notification or Publication is Attached, and/or,

[F] ☐ Waivers are Attached

[3] INFORMATION / DATA SUBMITTED IS COMPLETE - Statement of Understanding

I hereby certify that I, or personnel under my supervision, have read and complied with all applicable Rules and Regulations of the Oil Conservation Division. Further, I assert that the attached application for administrative approval is accurate and complete to the best of my knowledge and where applicable, verify that all interest (WI, RI, ORRI) is common. I understand that any omission of data, information or notification is cause to have the application package returned with no action taken.

Note: Statement must be completed by an individual with supervisory capacity.

Kay Maddox  
 Print or Type Name

Kay Maddox  
 Signature

Regulatory Agent  
 Title

8/27/98  
 Date

DISTRICT I  
P.O. Box 1980, Hobbs, NM 88241-1980

DISTRICT II  
811 South First St. Artesia NM 88210-2835

DISTRICT III  
1000 Rio Brazos Rd. Aztec, NM 87410-1693

State of New Mexico  
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

2040 S. Pacheco  
Santa Fe, New Mexico 87505-6429

Form C-107-A  
New 3-12-96

APPROVAL PROCESS:

☒ Administrative ☐ Hearing

EXISTING WELLBORE

☒ YES ☐ NO

APPLICATION FOR DOWNHOLE COMMINGLING

Operator: Conoco Inc. Address: 10 Desta Dr. Ste 100W, Midland, Tx. 79705-4500

Lease: Lodewick Well No: 4E Unit Ctr Sec Twp Rge: Section 18, T-27-N, R-9-W, A County: San Juan

OGRID NO. 005073 Property Code: API NO. 30-045-25550 Spacing Unit Lease Types: (check 1 or more)  
Federal ☒ State ☐ (and/or) Fee ☐

The following facts are submitted in support of downhole commingling:	Upper Zone	Intermediate Zone	Lower Zone
1. Pool Name and Pool Code	Basin Fruitland Coal 71629		Basin Dakota 71599
2. TOP and Bottom of Pay Section (Perforations)	2314-2423'		6830-6994'
3. Type of production (Oil or Gas)	Gas (Expected)		Gas
4. Method of Production (Flowing or Artificial Lift)	Expected Flowing		Flowing
5. Bottomhole Pressure	a (Current)	a.	a.
Oil Zones - Artificial Lift: Estimated Current	450 EST		660
Gas & Oil - Flowing: Measured Current	b (Original)	b.	b.
All Gas Zones: Estimated Or Measured Original	790		2320
6. Oil Gravity ("API) or Gas BT Content	1120		1180
7. Producing or Shut-In?	To Be Completed		Producing
Production Marginal? (yes or no)	Yes (Expected)		Yes
• If Shut-In give date and oil/gas/ water rates of last production	Date Rates	Date Rates	Date Rates
Note For new zones with no production history applicant shall be required to attach production estimates and supporting data			
• If Producing, date and oil/gas/ water rates of recent test (within 60 days)	Date Rates	Date Rates	Date Rates
	Est 8/98 200 MCFD, 0 BO, 0 BW Prod Allocation by Subtraction See Table		8/98 51 MCFD, 1 BO, 1 BW
8. Fixed Percentage Allocation Formula -% of each zone	Oil Gas	Oil Gas	Oil Gas

9. If allocation formula is based upon something other than current or past production, or is based upon some other method, submit attachments with supporting data and/or explaining method and providing rate projections or other required data.

10. Are all working, overriding, and royalty interests identical in all commingled zones? ☒ Yes ☐ No  
If not, have all working, overriding, and royalty interests been notified by certified mail? ☒ Yes ☐ No  
Have all offset operators been given written notice of the proposed downhole commingling? ☒ Yes ☐ No

11. Will cross-flow occur? ☒ Yes ☐ No If yes, are fluids compatible, will the formations not be damaged, will any cross-flowed production be recovered, and will the allocation formula be reliable. ☒ Yes ☐ No (If No, attach explanation)

12. Are all produced fluids from all commingled zones compatible with each others ☒ Yes ☐ No

13. Will the value of production be decreased by commingling? Yes ☒ No (If Yes, attach explanation)

14. If this well is on, or communitized with, state or federal lands, either the Commissioner of Public Lands or the United States Bureau of Land Management has been notified in writing of this application. ☒ Yes ☐ No

15. NMOCD Reference Cases for Rule 303(D) Exceptions: ORDER NO(S):

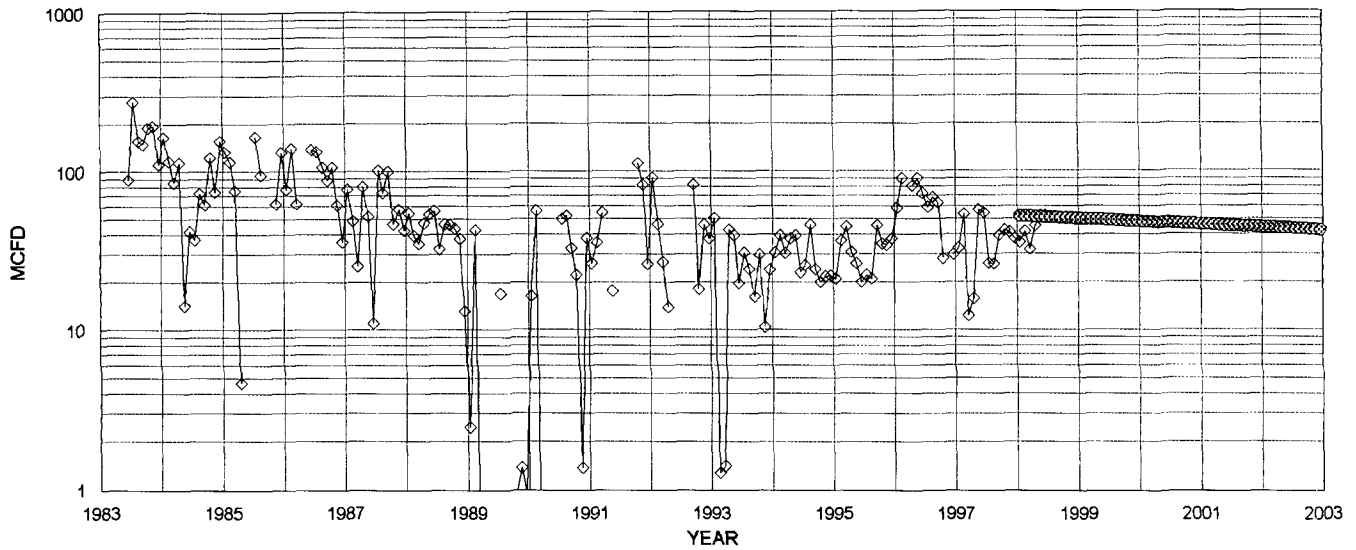
16. ATTACHMENTS

- \* C-102 for each zone to be commingled showing its spacing unit and acreage dedication.
- \* Production curve for each zone for at least one year. (If not available, attach explanation.)
- \* For zones with no production history, estimated production rates and supporting data.
- \* Data to support allocation method or formula.
- \* Notification list of all offset operators.
- \* Notification list of working, overriding and royalty interests for uncommon interest cases.
- \* Any additional statements, data, or documents required to support commingling.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Kay Maddox TITLE Regulatory Agent DATE Aug. 27, '98  
TYPE OR PRINT NAME KAY MADDOX TELEPHONE NO. (915) 686-6548

**LODEWICK #4E DAKOTA PRODUCTION  
SECTION 18A-27N-09W**



◇ DAKOTA MCFD    ■ FIT MCFD

**DAKOTA HISTORICAL DATA**

1ST PROD: 6/83  
OIL CUM: 2.4 MBO  
GAS CUM: 263.5 MMCF  
OIL YIELD: 0.0090 BBL/MCF

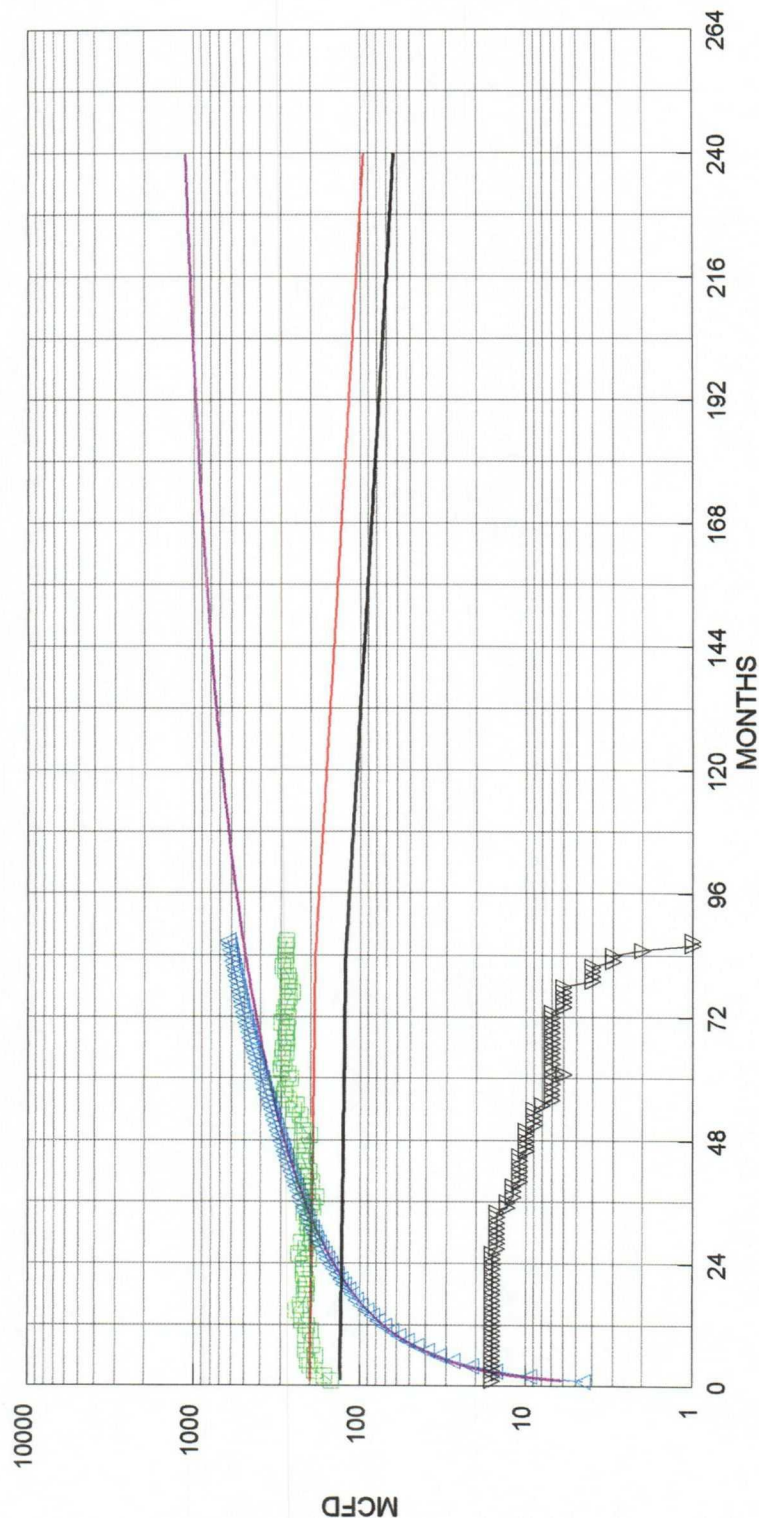
**DAKOTA PROJECTED DATA**

1/1/88 Q1: 52 MCFD  
DECLINE RATE: 4.00% (EXPONENTIAL)  
OIL YIELD: 0.0062 BBL/MCF, LAST 3 YEARS

**PRODUCTION FORECAST FOR SUBTRACTION METHOD COMMINGLE ALLOCATION**

YEAR	MID-YEAR AVG MCFD	MID-YEAR AVG BOPD
1988	51	0.32
1989	49	0.30
2000	47	0.29
2001	45	0.28
2002	43	0.27
2003	41	0.26
2004	40	0.25
2005	38	0.24
2006	37	0.23
2007	35	0.22
2008	34	0.21
2009	32	0.20
2010	31	0.19
2011	30	0.18
2012	29	0.18
2013	28	0.17
2014	28	0.16
2015	25	0.16
2016	24	0.15
2017	23	0.15
2018	22	0.14
2019	22	0.13
2020	21	0.13
2021	20	0.12
2022	19	0.12
2023	18	0.11
2024	18	0.11
2025	17	0.10
2026	16	0.10
2027	16	0.10

**NORMALIZED FRUITLAND COAL PRODUCTION**  
**PROD. SINCE 1990; 17 FC WELLS LOCATED IN 27N-9W AND 27N-10W**



— FIT MCFD    □ NORMALIZED MCFD    ▲ NORM CUM MMCF  
 ▽ WELLS ON PRODUCTION    — FIT CUM MMCF    — RISKED MCFD

Expected ~~Mesaverde~~ Production - 200 MCFD for Yr. 1

FRUITLAND

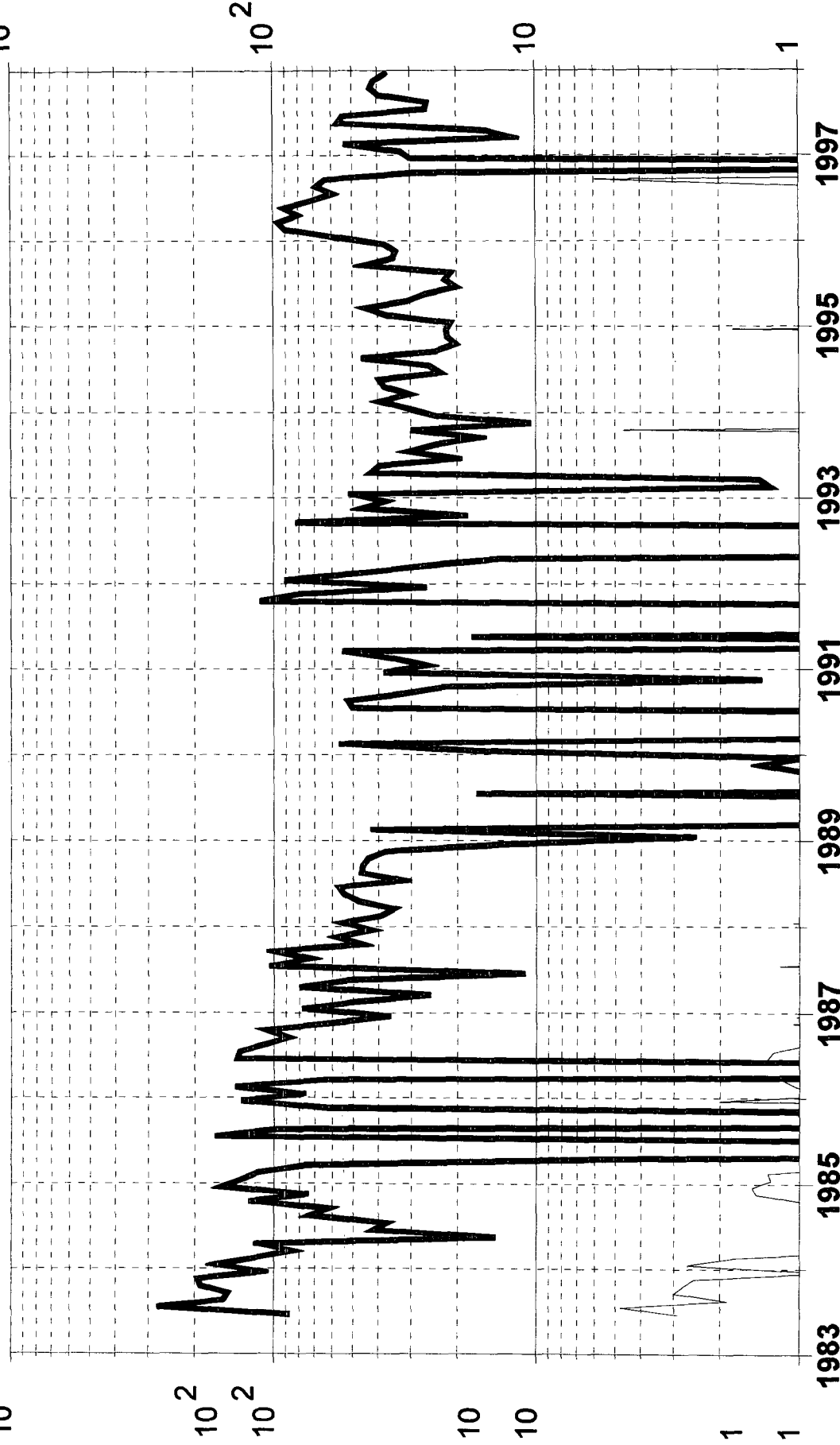
<p><b>NORMALIZED AVG:</b></p> <p>1749 MMCF EUR                      1142 MMCF IN 20 YRS                      10 MCFD E.L.                      0.0000 bbl/mcf oil yield</p>	<p>200 MCFD IP                      1% DECLINE, 1ST 12 MONTHS                      1% DECLINE, NEXT 72 MONTHS                      5% FINAL DECLINE</p>	<p><b>RISKED AVG:</b>      <b>30% RISK</b></p> <p>1132 MMCF EUR      <b>140 MCFD IP</b>                      755 MMCF IN 20 YRS      <b>1.0% DECLINE, 1ST 12 MONTHS</b>                      10 MCFD E.L.      <b>1.0% DECLINE, NEXT 72 MONTHS</b>                      0.0000 bbl/mcf oil yield      <b>5.0% FINAL DECLINE</b></p>
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Dwights

Lease: LODIEWICK (4E)

Retrieval Code: 251,045,27N09W18A00DK  
08/14/98

10<sup>3</sup>  
10<sup>3</sup>  
10<sup>3</sup>



Oil (bbl/day)

Water (bbl/day)

Gas (mcf/day)

F.P. Date: 06/83

Oil Cum: 2316 bbl

Gas Cum: 255.7 mmcf

Location: 18A 27N 9W

County: SAN JUAN, NM

Field: BASIN (DAKOTA) DK

Reservoir: DAKOTA

Operator: CONOCO INC

District I  
PO Box 1980, Hobbs, NM 88241-1980

State of New Mexico  
Energy, Minerals & Natural Resources Department

Revised February 21, 1994

instructions on back

District II  
PO Drawer DD, Artesia, NM 88211-0719

## OIL CONSERVATION DIVISION

Submit to Appropriate District Office

District III  
1000 Rio Brazos Rd. Aztec, NM 87410

PO Box 2088  
Santa Fe, NM 87504-2088

State Lease - 4 Copies

District IV  
PO Box 2088, Santa Fe, NM 87504-2088

Fee Lease - 3 Copies

☐ AMENDED REPORT

## WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-045-25550		2 Pool Code 71629		3 Pool Name Basin Fruitland Coal	
4 Property Code		5 Property Name Lodewick			6 Well Number # 4E
7 OGRID No. 005073		8 Operator Name Conoco Inc., 10 Desta Drive, Ste. 100W, Midland, TX 79705-4500			9 Elevation 6501'

## 10 Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	18	27N	9W		1040'	North	845'	East	San Juan

## 11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

12 Dedicated Acres 320	13 Joint or Infill	14 Consolidation Code	15 Order No.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

16				

## 17 OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief

*Kay Maddox*  
Signature

Kay Maddox

Printed Name

Regulatory Agent

Title

Date

August 12, 1998

## 18 SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date of Survey

Signature and Seal of Professional Surveyor:

Certificate Number

## OIL CONSERVATION DIVISION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

Form C-107  
Revised 10-1-78

STATE OF NEW MEXICO

OIL AND MINERALS DEPARTMENT

All distances must be from the outer boundaries of the Section.

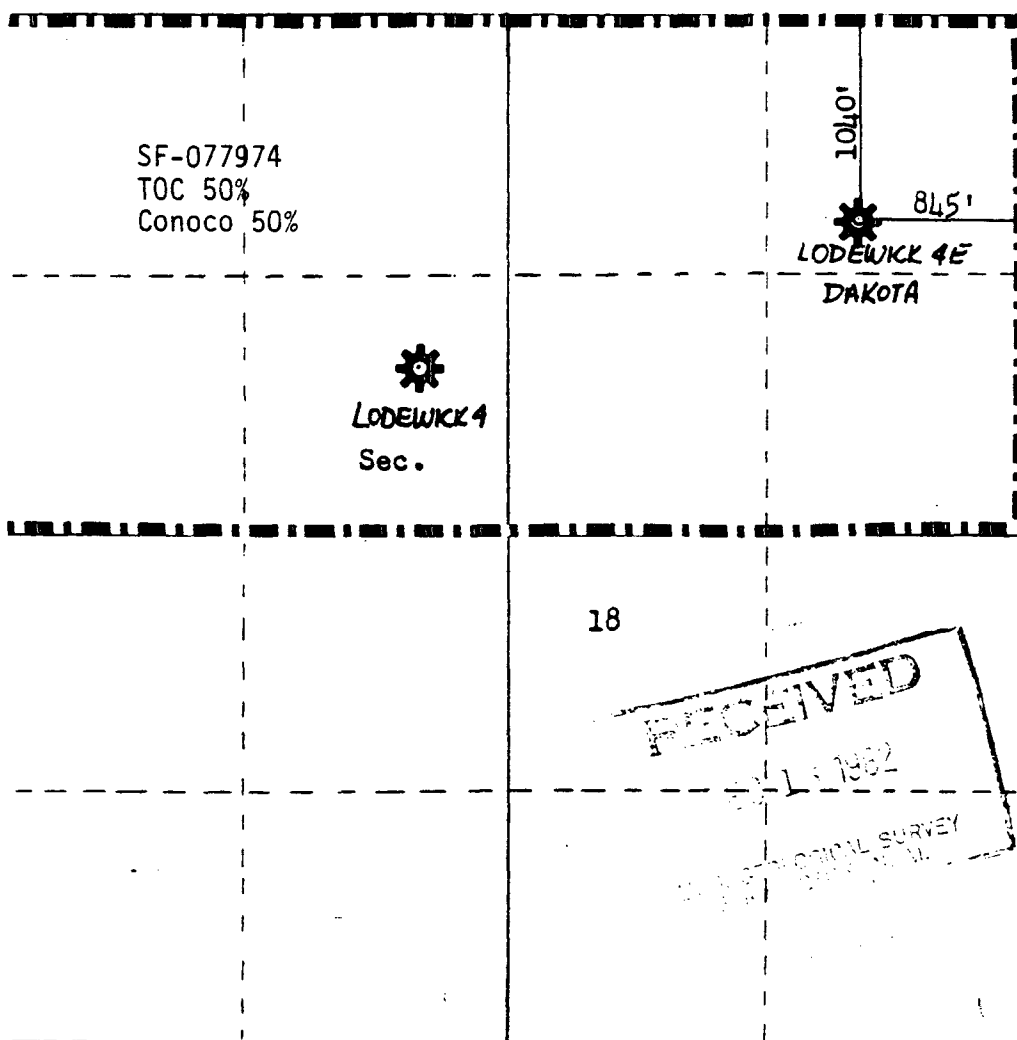
Operator <b>TENNECO OIL COMPANY</b>		Lease <b>LODEWICK</b>		Well No. <b>LE</b>
Unit Letter <b>A</b>	Section <b>18</b>	Township <b>27N</b>	Range <b>9W</b>	County <b>San Juan</b>
Actual Footage Location of Well: <b>1040</b> feet from the <b>North</b> line and <b>845</b> feet from the <b>East</b> line				
Ground Level Elev. <b>5501</b>	Producing Formation <b>Dakota</b>	Pool <b>Basin Dakota</b>	Dedicated Acreage: <b>320</b> Acres	

- Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.
- If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
- If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes ☐ No If answer is "yes," type of consolidation \_\_\_\_\_

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) \_\_\_\_\_

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



## CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

*Ken Russell*

Name  
**Ken Russell**  
Position  
**Sr. Production Analyst**  
Company  
**Tenneco Oil Company**  
Date  
**November 19, 1982**

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

ADMN 026116

Date Surveyed  
**September 1, 1982**  
Registered Professional Engineer  
and  
Land Surveyor  
*Fred B. Kerr Jr.*  
**Fred B. Kerr Jr.**  
Certificate No. **2050**

--QUICK BHP--

Calculate BHP and Z-factor from surface shut-in pressure

**CURRENT PRESSURES**

08/14/98

WELL NAME :		Lodewick 4E Dakota Current Pressure		
GAS GRAVITY:	0.66	% N2	0.20	
CONDENSATE (YES=1):	0	% CO2	0.20 %	
RESERVOIR TEMP:	176 'F	% H2S	0.00 %	
SURFACE TEMP:	60 'F	Pc =	671.09 %	
DEPTH OF ZONE:	6,760 feet	Tc =	376.38	
SURFACE PRES		BHP	Z	BHP/Z
psia		psia		psia
563		660	0.9379	703

NOTE: Initial ISIP avg calc BHB '50's & 60'S wells

Current ISIP avg calc BHP most recent test dates

WELL NAME :		Lodewick 4E Dakota Initial Pressure		
GAS GRAVITY:	0.66	% N2	0.20	
CONDENSATE (YES=1):	0	% CO2	0.20 %	
RESERVOIR TEMP:	176 'F	% H2S	0.00 %	
SURFACE TEMP:	60 'F	Pc =	671.09 %	
DEPTH OF ZONE:	6,760 feet	Tc =	376.38	
SURFACE PRES		BHP	Z	BHP/Z
psia		psia		psia
1,924		2,317	0.8599	2,694



Lodewick #4E  
API # 30-045-25550  
Section 18, T-27-N, R-9-W, A  
San Juan County, NM

RE: Application to Downhole Commingle Fruitland Coal & Dakota

**NOTIFICATION OF OFFSET OPERATORS:**

Burlington Resources  
PO Box 4289  
Farmington, NM 87499

Amoco  
PO Box 800  
Denver, CO 80201

Universal Resources  
1331 17<sup>th</sup> STE 300  
Denver, CO 80202

A copy of the C-107A Downhole Commingle Application has been sent to the above listed parties.