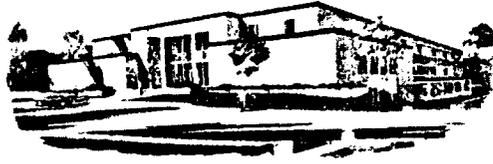


State of New Mexico

#133



JIM BACA  
COMMISSIONER

Commissioner of Public Lands

July 24, 1984

Northwest Pipeline Corporation  
P. O. Box 1526  
Salt Lake City, Utah 84110-1526

P.O. BOX 1148  
SANTA FE, NEW MEXICO 87504-1148  
Express Mail Delivery Used  
310 Old Santa Fe Trail  
Santa Fe, New Mexico 87501

Re: Rosa Unit  
Rio Arriba County, New Mexico  
Supplemental 1984 Drilling Program

ATTENTION: Mr. Darrell L. Gillen

Gentlemen:

The Commissioner of Public Lands has this date approved your supplemental 1984 Drilling Program for the Rosa Unit, San Juan and Rio Arriba Counties, New Mexico. Such amended plan proposes to re-complete the Unit Well Nos. 82, 83 and 84 in the Gallup formation. Our approval is subject to like approval by the New Mexico Oil Conservation Division and the Bureau of Land Management.

Enclosed is an approved copy for your files.

Very truly yours,

JIM BACA  
COMMISSIONER OF PUBLIC LANDS

BY:  
RAY D. GRAHAM, Director  
Oil and Gas Division  
AC 505/827-5744

JB/RDG/pm  
encis.

cc: OCD-Santa Fe, New Mexico  
BLM-Albuquerque, New Mexico  
BLM-Roswell, New Mexico

Rosa Unit

#133

JUL 9 1984

JUL 09 1984

Northwest Pipeline Corporation  
Attention: Mr. Darrell L. Gillen  
P.O. Box 1526  
Salt Lake City, UT 84110

Dear Mr. Gillen:

Your amended 1984 Plan of Development for the Rosa Unit I sec. No. 587, proposing to recomplete wells No. 82, 83, and 84 in year of 1984, and plans to drill the Gallup formation, have been received by this office. This amended Plan of Development is hereby approved. You are requested to furnish all interested principals with appropriate evidence of this approval.

Sincerely yours,

(ORIG. SGD.) GARY A. STEPHENS

For District Manager

Enclosures

cc:

NMOCD /

Commissioner of Public Lands  
Micrographics  
Fluids Section (FRAH w/copy)  
File: Rosa Unit-POD File  
O&C Chrono

015:RBartel:sj:6/28/84:0987P

**NORTHWEST PIPELINE CORPORATION**  
ONE OF THE WILLIAMS COMPANIES

P. O. BOX 1526  
SALT LAKE CITY, UTAH 84110-1526  
801-583-8800

523-84

#133

June 13, 1984

Assistant Area Oil and Gas Supervisor  
Minerals Management Service  
Western National Bank Building  
505 Marquette NW, Suite 815  
Albuquerque, New Mexico 87102

State of New Mexico  
Commissioner of Public Lands  
Attn: Mr. Ray D. Graham  
P. O. Box 1148  
Santa Fe, New Mexico 87501

State of New Mexico  
Oil Conservation Commission  
Attn: Mr. Joe Ramey  
P. O. Box 2088  
Santa Fe, New Mexico 87501

Re: Rosa Unit I Sec. No. 587  
Rio Arriba County, New Mexico  
Supplemental 1984 Drilling Program

Gentlemen:

By letter dated April 12, 1984, Northwest Pipeline Corporation, as Unit Operator, filed a Drilling Program for the captioned Unit for the Calendar Year 1984.

Mitchell Energy Corporation has requested the following three (3) wells which were provided on the 1981 Drilling Program in the Dakota formation to be recompleted under the 1984 Drilling Program in the Gallup formation. These wells were drilled in 1981 and unsuccessfully completed in the Dakota formation, as such they were shut-in awaiting completion in the Gallup formation in 1984. We plan to commence the recompletion work of these wells prior to the filing of our 1985 Drilling Program.

<u>WELL NUMBER</u>	<u>LOCATION/DEDICATION</u>
Rosa 82 Gallup	W/2 Sec. 9-T31N-R4W
Rosa 83 Gallup	W/2 Sec. 15-T31N-R4W
Rosa 84 Gallup	E/2 Sec. 23-T31N-R4W

Assistant Area Oil and Gas Supervisor  
Commission of Public Lands  
Oil Conservation Commission  
June 13, 1984  
Page 2

If this 1984 Supplemental Drilling Program is acceptable, please signify your approval in the space provided and return one (1) copy to this office.

Copies of this 1984 Supplemental Drilling Program are being sent to the Working Interest owners shown on the enclosed sheet.

Sincerely,

  
Darrell L. Gillen  
Land Coordinator

DG/dh

Enclosure

cc: Working Interest Owners

APPROVED \_\_\_\_\_

Date \_\_\_\_\_

Assistant Area Oil and Gas Supervisor  
Minerals Management Service  
Subject to like approval by the  
Commissioner of Public Lands and the  
Oil Conservation Commission

APPROVED \_\_\_\_\_

Date \_\_\_\_\_

Commissioner of Public Lands  
Subject to like approval by the  
Assistant Area Oil and Gas Supervisor  
and the Oil Conservation Commission

APPROVED  \_\_\_\_\_

Date 6-18-84

Oil Conservation Commission  
Subject to like approval by the  
Assistant Area Oil and Gas Supervisor  
and the Commissioner of Public Lands

The foregoing approvals are for the 1984 Supplemental Drilling Program for the Rosa Unit, Well Nos. 82, 83 and 84.

ROSA UNIT  
WORKING INTEREST OWNERS

The Wiser Oil Company  
905 Oil and Gas Building  
Wichita Falls, Texas 76301

Mr. William G. Webb  
1700 Mercantile Bank Building  
Dallas, Texas 75201

El Paso Exploration Co.  
Attn: James R. Permenter  
P. O. Box 1492  
El Paso, Texas 79978

Phillips Petroleum Co.  
Attn: T. C. Doughty  
8055 E. Tufts Avenue Parkway  
Denver, Colorado 80237

Elizabeth T. Calloway  
4801 St. Johns Drive  
Dallas, Texas 75205

John L. Turner  
800 Diamond Shamrock Tower  
Dallas, Texas 75201

Mercantile National Bank a Dallas  
Trustee, Mary Frances Turner, Jr.  
Personal Trust Department  
Dallas, Texas 75265

Gas Producing Enterprises, Inc.  
Attn: North Region-Land Department  
2100 Prudential Plaza  
P. O. Box 749  
Denver, Colorado 80201

Ms. Lois J. Willard  
P. O. Box 5205  
Santa Fe, New Mexico 87501

Mitchell Energy Corporation  
Attn: Mr. Jerry Taylor  
1670 Broadway - Suite 3200  
Amoco Building  
Denver, Colorado 80202

Amoco Production Company  
Attn: J. C. Burnside  
1670 Broadway - Suite 1914  
Amoco Building  
Denver, Colorado 80202

J. Glenn Turner, Jr.  
1700 Mercantile Bank Building  
Dallas, Texas 75201

Fred E. Turner  
One Energy Square - Suite 852  
4925 Greenville Avenue  
Dallas, Texas 75206

Mr. Frank A. Schultz  
730 Fidelity Union Tower  
Dallas, Texas 75201

Winifred K. Ponder  
1800 North Stanton Street  
El Paso, Texas 79902

#123

# State of New Mexico



JIM BACA  
COMMISSIONER

## Commissioner of Public Lands

April 30, 1984

P.O. BOX 1148  
SANTA FE, NEW MEXICO 87504-1148  
Express Mail Delivery Used  
310 Old Santa Fe Trail  
Santa Fe, New Mexico 87501

Northwest Pipeline Corporation  
P. O. Box 1526  
Salt Lake City, Utah 84110-1526

Re: Rosa Unit  
San Juan and Rio Arriba  
Counties, New Mexico  
1984 Drilling Program

ATTENTION: Mr. Darrell L. Gillen

Gentlemen:

The Commissioner of Public Lands has this date approved your 1984 Plan of Development for the Rosa Unit area, San Juan and Rio Arriba Counties, New Mexico. Such program calls for the drilling of the Unit Wells Nos. 103 through 118 to test the Gallup/Dakota formations during the calendar year 1984. Our approval is subject to like approval by the New Mexico Oil Conservation Division and the Bureau of Land Management.

Enclosed is an approved copy for your files.

Very truly yours,

JIM BACA  
COMMISSIONER OF PUBLIC LANDS

BY:  
FLOYD O. PRANDO, Assistant Director  
Oil and Gas Division  
AC 505/827-5744

JB/RDG/pm  
encls.  
cc:

OCD-Santa Fe, New Mexico  
BLM-Albuquerque, New Mexico  
BLM-Roswell, New Mexico - Attention: Mr. Armando Lopez

Northwest Pipeline Corporation  
Attention: Mr. Darrell L. Gillen  
P.O. Box 1526  
Salt Lake City, Utah 84110

MAY 15 1984

Dear Mr. Gillen:

Your 1984 Plan of Development for the Rosa Unit I Section No. 587, proposing 16 Callup Dakota wells during the calendar year of 1984, and plans to drill any offset wells required to prevent drainage of unitized substances, has been received by this office. This Plan of Development is hereby approved. You are requested to furnish all interested principals with appropriate evidence of this approval.

Sincerely yours,

*[Faint signature]*

For District Manager

Enclosures

cc:  
NMOCD  
Commissioner of Public Lands  
Micrographics  
Fluids Section (FRAH w/Copy)  
File: Rosa Unit-POD File  
O&G Chrono

015:JGilmore:sj:5/11/84:0718P

**NORTHWEST PIPELINE CORPORATION**  
ONE OF THE WILLIAMS COMPANIES  
Land Department  
P.O. BOX 1526  
SALT LAKE CITY, UTAH 84110-1526  
801-583-8800

April 12, 1984

Assistant Area Oil and Gas Supervisor  
Minerals Management Service  
Western National Bank Building  
505 Marquette NW, Suite 815  
Albuquerque, New Mexico 87102

State of New Mexico  
Commissioner of Public Lands  
Attn: Mr. Ray D. Graham  
P.O. Box 1148  
Santa Fe, New Mexico 87501

State of New Mexico  
Oil Conservation Commission  
Attn: Mr. Joe Ramey  
P.O. Box 2088  
Santa Fe, New Mexico 87501

Re: Rosa Unit I Sec. No. 587  
San Juan and Rio Arriba  
Counties, New Mexico  
1984 Drilling Program

Gentlemen:

By letter dated July 6, 1983, Northwest Pipeline Corporation, as Unit Operator, filed a Drilling Program for the captioned Unit providing for the drilling of three (3) Mesaverde/Commingled Gallup-Dakota wells, two (2) commingled Gallup-Dakota wells, and by letter dated November 17, 1983, an additional three (3) Gallup-Dakota wells were provided for. Well #96 was dropped from the drilling program and not drilled, well #99 per letter dated March 27, 1984 will be redrilled as well #99R at the same location and be carried over to the 1984 drilling program along with well #100. There were two (2) Mesaverde/Commingled Gallup-Dakota wells, two (2) Gallup-Dakota wells, and one (1) Commingled Gallup-Dakota well timely drilled.

As of this date, the total number of wells drilled in the Rosa Unit on acreage committed to the unit is as follows:

Pictured Cliffs/Mesaverde, Commerciality not determined	1
Mesaverde, Commerciality not determined	4
Mesaverde, Commercial	24
Mesaverde, Non-Commercial	2

Minerals Management Service  
 Commissioner of Public Lands  
 Oil Conservation Commission  
 April 12, 1984  
 Page 2

Mesaverde, Plugged and Abandoned	6
Dakota, Commercial	16
Dakota, Non-Commercial	7
Mesaverde/Commingled Gallup-Dakota Commerciality not determined	1
Commingled Gallup-Dakota, commerciality not determined	1
Dakota, Plugged and Abandoned	3
Mesaverde-Dakota (not completed)	5
Gallup-Dakota/(not completed)	2
Mesaverde/Commingled Gallup-Dakota not completed	<u>1</u>
Total	73

Pursuant to Section 9 of the Rosa Unit Agreement, Northwest Pipeline Corporation, as Unit Operator, has contacted all of the Working Interest Owners and has received the necessary concurrence to propose the drilling of the following additional wells during the calendar year 1984:

<u>Well Number</u>	<u>Location</u>	<u>Formation</u>
Rosa Unit # 103	E 1/2 Sec. 10-31N-4W	Gallup Dakota
Rosa Unit # 104	E 1/2 Sec. 14-31N-4W	Gallup Dakota
Rosa Unit # 105	E 1/2 Sec. 22-31N-4W	Gallup Dakota
Rosa Unit # 106	W 1/2 Sec. 24-31N-4W	Gallup Dakota
Rosa Unit # 107	All Sec. 4-31N-5W	Gallup Dakota
Rosa Unit # 108	N 1/2 Sec. 7-31N-5W	Gallup Dakota
Rosa Unit # 109	W 1/2 Sec. 9-31N-5W	Gallup Dakota
Rosa Unit # 110	N 1/2 Sec. 15-31N-5W	Gallup Dakota
Rosa Unit # 111	W 1/2 Sec. 21-31N-5W	Gallup Dakota
Rosa Unit # 112	W 1/2 Sec. 27-31N-5W	Gallup Dakota
Rosa Unit # 113	All Sec. 1-31N-6W	Gallup Dakota
Rosa Unit # 114	All Sec. 2-31N-6W	Gallup Dakota
Rosa Unit # 115	All Sec. 22-31N-6W	Gallup Dakota
Rosa Unit # 116	N 1/2 Sec. 24-31N-6W	Gallup Dakota
Rosa Unit # 117	W 1/2 Sec. 33-32N-6W	Gallup Dakota
Rosa Unit # 118	W 1/2 Sec. 35-32N-6W	Gallup Dakota

Northwest Pipeline Corporation, as Unit Operator, will drill any offset wells that may be required to prevent drainage of unitized substances and any other wells deemed necessary or which are requested by the Unit Operator or the Working Interest Owners.

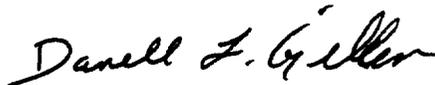
If this Drilling Program is acceptable, please signify your approval as required under Section 9 of the Unit Agreement in the space provided on the attached sheet and return an approved copy to Northwest Pipeline Corporation.

Minerals Management Service  
Commissioner of Public Lands  
Oil Conservation Commission  
April 12, 1984  
Page 3

Copies of this Drilling Program are being sent to the Working Interest Owners  
as shown on the attached sheet.

Very truly yours,

NORTHWEST PIPELINE CORPORATION



Darrell L. Gillen  
Land Coordinator

am

Attachment

cc: Working Interest Owners

Minerals Management Service  
Commissioner of Public Lands  
Oil Conservation Commission  
April 12, 1984  
Page 4

APPROVED: \_\_\_\_\_  
Area Oil and Gas Supervisor  
Minerals Management Service  
Subject to like approval by the  
Commissioner of Public Lands and  
the Oil Conservation Commission

Date \_\_\_\_\_

APPROVED: \_\_\_\_\_  
Commissioner of Public Lands  
Subject to like approval by the  
Minerals Management Service and  
the Oil Conservation Commission

Date \_\_\_\_\_

APPROVED: *Roy E. Johnson*  
Oil Conservation Commission  
Subject to like approval by the  
Minerals Management Service and  
the Commissioner of Public Lands

Date 4-23-84

The foregoing is for the approval of the Rosa Unit 1984 Drilling Program.

ROSA UNIT  
WORKING INTEREST OWNERS

The Wiser Oil Company  
905 Oil and Gas Building  
Wichita Falls, Texas 75301

Mr. William G. Webb  
1700 Mercantile Bank Building  
Dallas, Texas 75201

El Paso Exploration Co.  
Attn: James R. Permenter  
P.O. Box 1492  
El Paso, Texas 79978

Phillips Petroleum Co.  
Attn: M. K. Study  
8055 E. Tufts Avenue Parkway  
Denver, Colorado 80237

Elizabeth T. Calloway  
4801 St. Johns Drive  
Dallas, Texas 75205

John L. Turner  
800 Diamond Shamrock Tower  
Dallas, Texas 75201

Mercantile National Bank in Dallas  
Trustee, Mary Frances Turner, Jr.  
Personal Trust Department  
Dallas, Texas 75265

Gas Producing Enterprises, Inc.  
Attn: North Region-Land Department  
2100 Prudential Plaza  
P.O. Box 749  
Denver, Colorado 80201

Ms. Lois J. Willard  
P.O. Box 5205  
Santa Fe, New Mexico 87501

Mitchell Energy Corporation  
Attn: Mr. Jerry Taylor  
1670 Broadway - Suite 3200  
Amoco Building  
Denver, Colorado 80202

Amoco Production Company  
Attn: J. C. Burnside  
1670 Broadway - Suite 1914  
Amoco Building  
Denver, Colorado 80202

J. Glenn Turner, Jr.  
1700 Mercantile Bank Building  
Dallas, Texas 75201

Fred E. Turner  
One Energy Square - Suite 852  
4925 Greenville Avenue  
Dallas, Texas 75206

Mr. Frank A. Schultz  
730 Fidelity Union Tower  
Dallas, Texas 75201

Winifred K. Ponder  
1800 North Stanton Street  
El Paso, Texas 79902

Ray-

Rosa Unit

#133

DEC 07 1983

Northwest Pipeline Company  
Attention: Ms. Kathy Michael  
1125 17th Street, Suite 2140  
Denver, Colorado 80202

Gentlemen:

An approved copy of your amended 1983 plan of development for the Rosa unit area San Juan and Rio Arriba Counties, New Mexico is enclosed. Such plan, proposing to drill well No. 100 in the SW1/4 sec. 21, T. 31N., R. 6 W., well No. 101 in the SW1/4 sec. 24, T. 31N., R. 6W., and well No. 102 in the S1/2 sec. 30, T. 31N., R. 5 W., NMPM was approved on this date subject to like approval by the appropriate officials of the State of New Mexico.

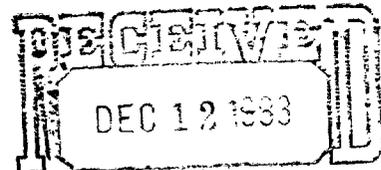
Sincerely yours,

(ORIG. SGD.) GARY A. STEPHENS

for District Manager

Enclosure

cc: NMOCD, Santa Fe ✓  
Comm. of Pub. Lands, Santa Fe  
Farmington Resource Area (w/encl)  
File: Rosa Unit  
O&G Chrono  
R. Bartel (11-30-83)



OIL CONSERVATION DIVISION  
SANTA FE

# State of New Mexico



JIM BACA  
COMMISSIONER



Commissioner of Public Lands  
December 7, 1983

P.O. BOX 1148  
SANTA FE, NEW MEXICO 87504-1148

Northwest Pipeline Corporation  
1125 Seventeenth Street, Suite 2140  
Denver, Colorado 80202

Re: Rosa Unit  
San Juan & Rio Arriba Counties, NM  
Supplemental 1983 Drilling Program

ATTENTION: Kathy Michael

Gentlemen:

The Commissioner of Public Lands has this date approved your supplemental 1983 Drilling Program for the Rosa Unit, San Juan and Rio Arriba Counties, New Mexico. Such program proposes to drill the Unit Well Nos. 100, 101 and 102. Our approval is subject to like approval by the New Mexico Oil Conservation Division and the Bureau of Land Management.

Enclosed is an approved copy for your files.

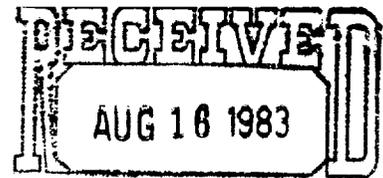
Very truly yours,

JIM BACA  
COMMISSIONER OF PUBLIC LANDS

BY:  
FLOYD O. PRANDO, Assistant Director  
Oil and Gas Division  
AC 505/827-5744

JB/FOP/pm  
encls.

cc:           OCD-Santa Fe, New Mexico  
              BLM-Albuquerque, New Mexico  
              BLM-Roswell, New Mexico



NORTHWEST PIPELINE CORPORATION

OIL CONSERVATION DIVISION  
SANTA FE

LAND DEPARTMENT

1125 Seventeenth Street, Suite 2140  
Denver, Colorado 80202  
303-292-4906

August 10, 1983

#133

Assistant Area Oil and Gas Supervisor  
Minerals Management Service  
Western National Bank Building  
505 Marquette NW, Suite 815  
Albuquerque, New Mexico 87102

State of New Mexico  
Commissioner of Public Lands  
Attn: Mr. Ray D. Graham  
P. O. Box 1148  
Santa Fe, New Mexico 87501

State of New Mexico  
Oil Conservation Commission  
Attn: Mr. Joe Ramey  
P. O. Box 2088  
Santa Fe, New Mexico 87501

Re: Rosa Unit I Sec. No. 587  
San Juan and Rio Arriba  
Counties, New Mexico  
1983 Drilling Program

Gentlemen:

The 1983 Drilling Program filed on April 2, 1983, for the Rosa Unit I Sec. No. 587 has been approved by the regulatory agencies as follows:

Minerals Management Service	8/02/83
Commissioner of Public Lands	7/11/83
Oil Conservation Commission	7/08/83

Copies of this letter are being sent to the Working Interest Owners shown on the attached sheet.

Very truly yours,

Kathy Michael  
Supervisor/Land Department

KM:st  
Attachment  
CC: Working Interest Owners

ROSA UNIT  
WORKING INTEREST OWNERS

The Wiser Oil Company  
905 Oil and Gas Building  
Wichita Falls, Texas 76301

Mr. William G. Webb  
1700 Mercantile Bank Building  
Dallas, Texas 75201

El Paso Exploration Co.  
Attn: James R. Permenter  
P. O. Box 1492  
El Paso, Texas 79978

Phillips Petroleum Co.  
Attn: Tom Doughty  
8055 E. Tufts Avenue Parkway  
Denver, Colorado 80237

Elizabeth T. Calloway  
4801 St. Johns Drive  
Dallas, Texas 75205

John L. Turner  
800 Diamond Shamrock Tower  
Dallas, Texas 75201

Mercantile National Bank a Dallas  
Trustee, Mary Frances Turner, Jr.  
Personal Trust Department  
Dallas, Texas 75265

Gas Producing Enterprises, Inc.  
Attn: North Region-Land Department  
2100 Prudential Plaza  
P. O. Box 749  
Denver, Colorado 80201

Ms. Lois J. Willard  
P. O. Box 5205  
Santa Fe, New Mexico 87501

Mitchell Energy Corporation  
Attn: Mr. Jerry Taylor  
1670 Broadway - Suite 3200  
Amoco Building  
Denver, Colorado 80202

Amoco Production Company  
Attn: J. C. Burnside  
1670 Broadway - Suite 1914  
Amoco Building  
Denver, Colorado 80202

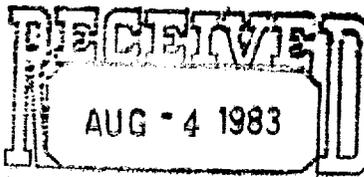
J. Glenn Turner, Jr.  
1700 Mercantile Bank Building  
Dallas, Texas 75201

Fred E. Turner  
One Energy Square - Suite 852  
4925 Greenville Avenue  
Dallas, Texas 75206

Mr. Frank A. Schultz  
730 Fidelity Union Tower  
Dallas, Texas 75201

Winifred K. Ponder  
1800 North Stanton Street  
El Paso, Texas 79902

U.S. DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
ALBUQUERQUE, NEW MEXICO



02 AUG 1983

Northwest Pipeline Corporation  
Attention Kathy Michael  
1125 Seventeenth St. Suite 2140  
Denver, Colorado 80202

OIL CONSERVATION DIVISION  
SANTA FE

Gentlemen:

One approved copy of your 1983 Plan of Development for the Rosa Unit Area, San Juan and Rio Arriba Counties, New Mexico is enclosed. Such plan, proposing to drill the Rosa #59 in the SW $\frac{1}{4}$  section 25; the Rosa #96 in the SW $\frac{1}{4}$  Section 17; the Rosa #98 in the SW $\frac{1}{4}$  section 23; and the Rosa #99 in the SW $\frac{1}{4}$  section 26, T. 31 N., R. 6 W.; and the Rosa #97 in the S $\frac{1}{2}$  section 31, T. 31 N., R. 5 W., N.M.P.M., was approved on this date subject to like approval by the appropriate officials of the State of New Mexico.

Sincerely yours,

(Signature)

FOR

District Manager

Enclosure

cc:  
NMOCD ✓  
Commissioner of Public Lands  
RA, Farmington (w/encl)  
File: Rosa Unit  
O & G Choro

SEUmshler:pmr:7/28/83



STATE OF NEW MEXICO  
**ENERGY AND MINERALS DEPARTMENT**  
OIL CONSERVATION DIVISION

TONEY ANAYA  
GOVERNOR

July 12, 1983

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-5800

Northwest Pipeline Corp.  
1125 Seventeenth St.  
Suite 2140  
Denver, Colorado 80202

Attention: Kathy Michael

Re: Rosa Unit  
San Juan 30-5 Unit  
San Juan 29-6 Unit  
San Juan and Rio Arriba  
Counties, NM

Dear Ms. Michael:

Enclosed please find the approved copies of the material referenced above. Such approval is contingent upon like approval by the Commissioner of Public Lands and the United States Minerals Management Service.

Sincerely,

A handwritten signature in dark ink, appearing to read "Roy E. Johnson", written over a horizontal line.

ROY E. JOHNSON  
Petroleum Geologist

REJ/dp

cc: Commissioner of Public Lands - Santa Fe  
Minerals Management Service - Albuquerque  
OCD District Office - Aztec

State of New Mexico



JIM BACA  
COMMISSIONER



#133

Commissioner of Public Lands

July 11, 1983

P.O. BOX 1148  
SANTA FE, NEW MEXICO 87504-1148

Northwest Pipeline Corporation  
1125 Seventeenth Street-Suite 2140  
Denver, Colorado 80202

Re: Rosa Unit  
1983 Plan of Development  
San Juan and Rio Arriba  
Counties, New Mexico

ATTN: Kathy Michael

Gentlemen:

The Commissioner of Public Lands has this date approved your 1983 Drilling Program for the Rosa Unit Agreement San Juan and Rio Arriba Counties, New Mexico. Such program provides for the drilling of Well Nos. 59, 96, 97, 98 and 99. Our approval is subject to like approval by the New Mexico Oil Conservation Division and the Bureau of Land Management.

Enclosed is one approved copy for your files.

Very truly yours,

JIM BACA  
COMMISSIONER OF PUBLIC LANDS

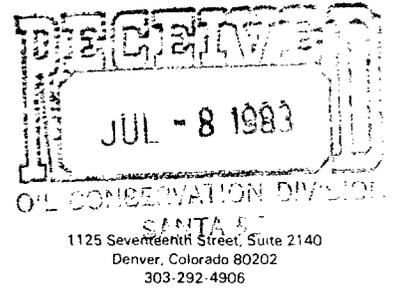
A handwritten signature in cursive script, appearing to read "Floyd O. Prando".

BY: Floyd O. Prando  
Assistant Director  
Oil and Gas Division  
AC/505-827-5744

JB/FOP/cm  
encl.  
cc:

OCD-Santa Fe, New Mexico  
BLM-Albuquerque, New Mexico  
BLM-Roswell, New Mexico

NORTHWEST PIPELINE CORPORATION



LAND DEPARTMENT

July 6, 1983

Assistant Area Oil and Gas Supervisor  
Minerals Management Service  
Western National Bank Building  
505 Marquette NW, Suite 815  
Albuquerque, New Mexico 87102

State of New Mexico  
Commissioner of Public Lands  
Attn: Mr. Ray D. Graham  
P. O. Box 1148  
Santa Fe, New Mexico 87501

State of New Mexico  
Oil Conservation Commission  
Attn: Mr. Joe Ramey  
P. O. Box 2088  
Santa Fe, New Mexico 87501

Re: Rosa Unit I Sec. No. 587  
San Juan County, NM  
APPROVAL OF NOTICE OF COMPLETION OF  
NON-COMMERCIAL WELLS  
DAKOTA FORMATION

Gentlemen:

The Notice of Completion of Non-Commercial Wells, which was filed on March 9, 1983 for the Rosa Unit #69 Well and Rosa Unit #85 Well, has been approved by the regulatory agencies as follows:

Minerals Management Service	5/09/83
Commissioner of Public Lands	6/28/83
Oil Conservation Commission	5/16/83

Copies of this letter are being sent to the Working Interest Owners shown on the attached sheet.

Very truly yours,

Kathy Michael  
Supervisor/Land Department

KM:bs  
Attachment  
CC: Working Interest Owners

ROSA UNIT  
WORKING INTEREST OWNERS

The Wiser Oil Company  
905 Oil and Gas Building  
Wichita Falls, Texas 76301

Mr. William G. Webb  
1700 Mercantile Bank Building  
Dallas, Texas 75201

El Paso Exploration Co.  
Attn: James R. Permenter  
P. O. Box 1492  
El Paso, Texas 79978

Phillips Petroleum Co.  
Attn: M. K. Study  
8055 E. Tufts Avenue Parkway  
Denver, Colorado 80237

Elizabeth T. Calloway  
4801 St. Johns Drive  
Dallas, Texas 75205

John L. Turner  
800 Diamond Shamrock Tower  
Dallas, Texas 75201

Mercantile National Bank a Dallas  
Trustee, Mary Frances Turner, Jr.  
Personal Trust Department  
Dallas, Texas 75265

Gas Producing Enterprises, Inc.  
Attn: North Region-Land Department  
2100 Prudential Plaza  
P. O. Box 749  
Denver, Colorado 80201

Ms. Lois J. Willard  
P. O. Box 5205  
Santa Fe, New Mexico 87501

Mitchell Energy Corporation  
Attn: Mr. Jerry Taylor  
1670 Broadway - Suite 3200  
Amoco Building  
Denver, Colorado 80202

Amoco Production Company  
Attn: J. C. Burnside  
1670 Broadway - Suite 1914  
Amoco Building  
Denver, Colorado 80202

J. Glenn Turner, Jr.  
1700 Mercantile Bank Building  
Dallas, Texas 75201

Fred E. Turner  
One Energy Square - Suite 852  
4925 Greenville Avenue  
Dallas, Texas 75206

Mr. Frank A. Schultz  
730 Fidelity Union Tower  
Dallas, Texas 75201

Winifred K. Ponder  
1800 North Stanton Street  
El Paso, Texas 79902

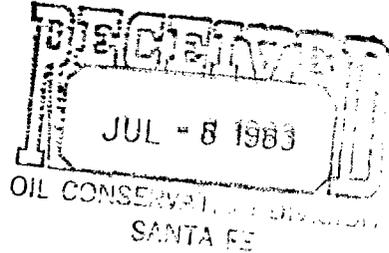
NORTHWEST PIPELINE CORPORATION

LAND DEPARTMENT

July 6, 1983

1125 Seventeenth Street, Suite 2140  
Denver, Colorado 80202  
303-292-4906

Assistant Area Oil and Gas Supervisor  
Minerals Management Service  
Western National Bank Building  
505 Marquette NW, Suite 815  
Albuquerque, New Mexico 87102



State of New Mexico  
Commissioner of Public Lands  
Attn: Mr. Ray D. Graham  
P. O. Box 1148  
Santa Fe, New Mexico 87501

State of New Mexico  
Oil Conservation Commission  
Attn: Mr. Joe Ramey  
P. O. Box 2088  
Santa Fe, New Mexico 87501

Re: Rosa Unit I Sec. No. 587  
San Juan and Rio Arriba  
Counties, New Mexico  
1983 Drilling Program

Gentlemen:

By letter dated April 2, 1982, Northwest Pipeline Corporation, as Unit Operator, filed a Drilling Program for the captioned unit providing for the drilling of four (4) Mesaverde Wells. All wells were timely drilled.

As of this date, the total number of wells drilled in the Rosa Unit on acreage committed to the unit is as follows:

Pictured Cliffs/Mesaverde,	
Commerciality not determined	1
Mesaverde, Commerciality not determined	4
Mesaverde, Commercial	24
Mesaverde, Noncommercial	2
Mesaverde, Plugged and Abandoned	6
Dakota, Commercial	6
Dakota, Non-commercial	9
Dakota, Commerciality not determined	8
Dakota, Plugged and Abandoned	3
Mesaverde/Dakota (not completed)	<u>5</u>
Total	68

Minerals Management Service  
Commissioner of Public Lands  
Oil Conservation Commission  
July 6, 1983  
Page 2

Northwest Pipeline Corporation, as Unit Operator, has contacted all of the Working Interest Owners and has received the necessary concurrence to propose the drilling of the following additional wells during the calendar year 1983:

<u>Well Number</u>	<u>Location</u>	<u>Formation</u>
Rosa Unit #59	SW $\frac{1}{4}$ Sec. 25-31N-6W	MV/Commingled Gallup-Dakota
Rosa Unit #96	SW $\frac{1}{4}$ Sec. 17-31N-6W	MV/Commingled Gallup-Dakota
Rosa Unit #97	S $\frac{1}{2}$ Sec. 31-31N-5W	MV/Commingled Gallup-Dakota
Rosa Unit #98	SW $\frac{1}{4}$ Sec. 23-31N-6W	Commingled Gallup-Dakota
Rosa Unit #99	SW $\frac{1}{4}$ Sec. 26-31N-6W	Commingled Gallup-Dakota

Northwest Pipeline Corporation, as Unit Operator, will drill any offset wells that may be required to prevent drainage of unitized substances and any other wells deemed necessary or which are requested by the Unit Operator or the Working Interest Owners.

If this Drilling Program is acceptable, please signify your approval as required under Section 9 of the Unit Agreement in the space provided on the attached sheet and return an approved copy to Northwest Pipeline Corporation.

Copies of this drilling program are being sent to the Working Interest Owners shown on the attached sheet.

Very truly yours,



Kathy Michael  
Supervisor/Land Department

KM:bs  
Attachment  
CC: Working Interest Owners

Minerals Management Service  
Commissioner of Public Lands  
Oil Conservation Commission  
July 6, 1983  
Page 3

APPROVED \_\_\_\_\_

Area Oil and Gas Supervisor  
Minerals Management Service  
Subject to like approval by  
the Commissioner of Public  
Lands and the Oil Conservation  
Commission

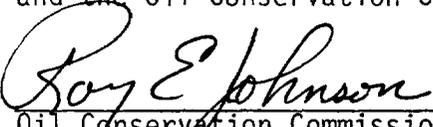
DATE \_\_\_\_\_

APPROVED \_\_\_\_\_

Commissioner of Public Lands  
Subject to like approval by  
the Area Oil and Gas Supervisor  
and the Oil Conservation Commission

DATE \_\_\_\_\_

APPROVED \_\_\_\_\_

  
Oil Conservation Commission  
Subject to like approval by the  
Area Oil and Gas Supervisor and  
the Commissioner of Public Lands

DATE 7-8-83

The foregoing is for the approval of the Rosa Unit 1983 Drilling Program.

ROSA UNIT  
WORKING INTEREST OWNERS

The Wiser Oil Company  
905 Oil and Gas Building  
Wichita Falls, Texas 76301

Mr. William G. Webb  
1700 Mercantile Bank Building  
Dallas, Texas 75201

El Paso Exploration Co.  
Attn: James R. Permenter  
P. O. Box 1492  
El Paso, Texas 79978

Phillips Petroleum Co.  
Attn: M. K. Study  
8055 E. Tufts Avenue Parkway  
Denver, Colorado 80237

Elizabeth T. Calloway  
4801 St. Johns Drive  
Dallas, Texas 75205

John L. Turner  
800 Diamond Shamrock Tower  
Dallas, Texas 75201

Mercantile National Bank a Dallas  
Trustee, Mary Frances Turner, Jr.  
Personal Trust Department  
Dallas, Texas 75265

Gas Producing Enterprises, Inc.  
Attn: North Region-Land Department  
2100 Prudential Plaza  
P. O. Box 749  
Denver, Colorado 80201

Ms. Lois J. Willard  
P. O. Box 5205  
Santa Fe, New Mexico 87501

Mitchell Energy Corporation  
Attn: Mr. Jerry Taylor  
1670 Broadway - Suite 3200  
Amoco Building  
Denver, Colorado 80202

Amoco Production Company  
Attn: J. C. Burnside  
1670 Broadway - Suite 1914  
Amoco Building  
Denver, Colorado 80202

J. Glenn Turner, Jr.  
1700 Mercantile Bank Building  
Dallas, Texas 75201

Fred E. Turner  
One Energy Square - Suite 852  
4925 Greenville Avenue  
Dallas, Texas 75206

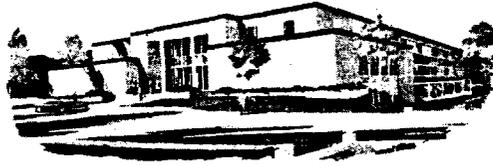
Mr. Frank A. Schultz  
730 Fidelity Union Tower  
Dallas, Texas 75201

Winifred K. Ponder  
1800 North Stanton Street  
El Paso, Texas 79902

# State of New Mexico



JIM BACA  
COMMISSIONER



## Commissioner of Public Lands

June 28, 1983

P.O. BOX 1148  
SANTA FE, NEW MEXICO 87504-1148

Northwest Pipeline Corporation  
1125 Seventeenth Street, Suite 2140  
Denver, Colorado 80202

Re: Rosa Unit,  
San Juan County, New Mexico  
Notice of Completion of  
Non-Commercial Wells  
Dakota Formation

ATTENTION: Kathy Michael

Gentlemen:

This office is in receipt of letter dated March 9, 1983, wherein Northwest Pipeline Corporation has determined that the Rosa Unit Well No. 69 located 790 feet from the North Line and 1130 feet from the West Line, Section 16, Township 31 North, Range 6 West, San Juan County, New Mexico and the Rosa Unit Well No. 85, located 800 feet from the North Line and 990 feet from the East Line, Section 20, Township 31 North, Range 5 West, Rio Arriba County, New Mexico are not capable of producing unitized substances in paying quantities from the Dakota Formation.

Please be advised that this office concurs with your determination of the non-commercial status of the Rosa Unit Well Nos. 69 and 85. This action is subject to like approval by the New Mexico Oil Conservation Division and the Bureau of Land Management.

Enclosed is an approved copy for your files.

Very truly yours,

JIM BACA  
COMMISSIONER OF PUBLIC LANDS

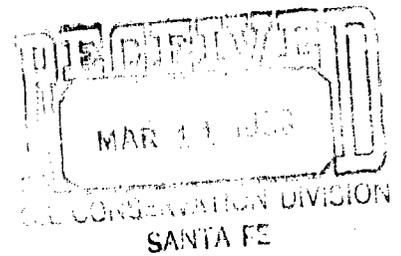
BY:  
FLOYD O. PRANDO, Assistant Director  
Oil and Gas Division  
AC 505/827-5744

JB/FOP/pm  
encls.

cc: OCD-Santa Fe, New Mexico  
BLM-Albuquerque, New Mexico  
BLM-Roswell, New Mexico

NORTHWEST PIPELINE CORPORATION

LAND DEPARTMENT



1125 Seventeenth Street, Suite 2140  
Denver, Colorado 80202  
303-292-4906

March 9, 1983

*Ray  
133*

Assistant Area Oil and Gas Supervisor  
Minerals Management Service  
Western National Bank Building  
505 Marquette NW, Suite 815  
Albuquerque, New Mexico 87102

State of New Mexico  
Commissioner of Public Lands  
Attn: Mr. Ray D. Graham  
P. O. Box 1148  
Santa Fe, New Mexico 87501

/State of New Mexico  
Oil Conservation Commission  
Attn: Mr. Joe Ramey  
Post Office Box 2088  
Santa Fe, New Mexico 87501

Re: Rosa Unit, 1 Sec. No. 587  
San Juan County, NM  
NOTICE OF COMPLETION OF  
NON-COMMERCIAL WELLS  
DAKOTA FORMATION

Gentlemen:

Pursuant to the provisions of Section 10 of the Rosa Unit Agreement, Northwest Pipeline Corporation, as Unit Operator, has determined that the following described wells are not capable of producing unitized substances in paying quantities from the Dakota Formation.

The pertinent data is as follows:

Rosa Unit #69 Well is located 790 feet from the North Line and 1130 feet from the West Line, Section 16, Township 31 North, Range 6 West, N.M.P.M., San Juan County, New Mexico. This well was spudded on June 12, 1979. The Dakota Formation was abandoned on July 18, 1980. This Formation was perforated at the following depths:

interval 1 60 holes 7919' to 7975'  
interval 2 46 holes 8041' to 8064'

March 9, 1983

Page 2

Interval 1 perforations were treated with 67,968 gallons pad water followed by 113,904 pounds of 10/20 sand. Interval 2 perforations were treated with 1000 gallons HCL, then fractured by 70,000 gallons pad water followed by 70,000 pounds of 20/40 sand. After fracturing, a flow rate of 396 MCFD was reported.

This well has been plugged and abandoned.

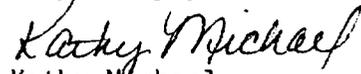
Rosa Unit #85 Well is located 800 feet from the North Line and 990 feet from the East Line, Section 20, Township 31 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. This well was spudded on July 2, 1981. The Dakota Formation was completed on November 30, 1981 with a dual completion in the Mesaverde Formation. The Dakota Formation was perforated with 188 holes at the following depths:

48 holes	(4 SPF)	7981' to 7993'
84 holes	(4 SPF)	8023' to 8044'
56 holes	(4 SPF)	8060' to 8076'

These perforations were treated with 45,000 gallons pad water followed by 176,980 pounds of 20/40 sand. After fracturing this well, a flow rate of 108 MCFD was measured.

If these determinations meet with your approval, please so indicate such approval in the space provided and return an approved copy hereof for our files. Copies of this letter are being sent to the Working Interest Owners shown on the attached sheet.

Very truly yours,



Kathy Michael  
Supervisor/Land Department

KM:bs  
Attachment  
CC: Working Interest Owners

March 9, 1983

Page 3

APPROVED

\_\_\_\_\_  
Area Oil and Gas Supervisor  
Minerals Management Service  
Subject to like approval by The  
Commissioner of Public Lands and  
The Oil Conservation Commission

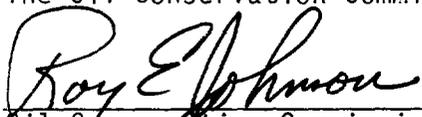
Date \_\_\_\_\_

APPROVED

\_\_\_\_\_  
Commissioner of Public Lands  
Subject to like approval by The  
Minerals Management Service and  
The Oil Conservation Commission

Date \_\_\_\_\_

APPROVED

  
\_\_\_\_\_  
Oil Conservation Commission  
Subject to like approval by The  
Minerals Management Service and  
The Commissioner of Public Lands

Date 5-16-83

Approval of Non-Commercial Wells #69 and #85 in the Rosa Unit

ROSA UNIT  
WORKING INTEREST OWNERS

The Wiser Oil Company  
P. O. Box 2467  
Hobbs, New Mexico 88240

Mr. William G. Webb  
1700 Mercantile Bank Building  
Dallas, Texas 75201

El Paso Exploration Co.  
Attn: James R. Permenter  
P. O. Box 1492  
El Paso, Texas 79978

Phillips Petroleum Co.  
Attn: M. K. Study  
8055 E. Tufts Avenue Parkway  
Denver, Colorado 80237

Elizabeth T. Calloway  
4801 St. Johns Drive  
Dallas, Texas 75205

John L. Turner  
800 Diamond Shamrock Tower  
Dallas, Texas 75201

Mercantile National Bank a Dallas  
Trustee, Mary Frances Turner, Jr.  
Personal Trust Department  
Dallas, Texas 75265

Gas Producing Enterprises, Inc.  
Attn: North Region-Land Department  
2100 Prudential Plaza  
P. O. Box 749  
Denver, Colorado 80201

Ms. Lois J. Willard  
P. O. Box 5205  
Santa Fe, New Mexico 87501

Mitchell Energy Corporation  
Attn: Mr. Jerry Taylor  
1670 Broadway - Suite 3200  
Amoco Building  
Denver, Colorado 80202

Amoco Production Company  
Attn: M. R. Gile  
1670 Broadway - Suite 1914  
Amoco Building  
Denver, Colorado 80202

J. Glenn Turner, Jr.  
1700 Mercantile Bank Building  
Dallas, Texas 75201

Fred E. Turner  
One Energy Square - Suite 852  
4925 Greenville Avenue  
Dallas, Texas 75206

Mr. Frank A. Schultz  
730 Fidelity Union Tower  
Dallas, Texas 75201

Winifred K. Ponder  
1800 North Stanton Street  
El Paso, Texas 79902

# State of New Mexico



## Commissioner of Public Lands

ALEX J. ARMIJO  
COMMISSIONER

June 11, 1982

P. O. BOX 1148  
SANTA FE, NEW MEXICO 87501

Northwest Pipeline Corporation  
P. O. Box 5800, Terminal Annex  
Denver, Colorado 80217

Re: Rosa Unit  
1982 Plan of Development  
San Juan and Rio Arriba  
Counties, New Mexico

ATTENTION: Kathy Michael

Gentlemen:

The Commissioner of Public Lands has this date approved your 1982 Drilling Program for the Rosa Unit Agreement San Juan and Rio Arriba Counties, New Mexico. Such program provides for the drilling of four Mesaverde wells. Our approval is subject to like approval by the New Mexico Oil Conservation Division and the United States Minerals Management Service.

Enclosed is one approved copy for your files.

Your filing fee in the amount of Three (\$3.00) Dollars has been received.

Very truly yours,

ALEX J. ARMIJO  
COMMISSIONER OF PUBLIC LANDS

BY:  
FLOYD O. PRANDO, Assistant Director  
Oil and Gas Division  
AC 505/827-2748

AJA/FOP/pm  
encls.

cc: OCD-Santa Fe, New Mexico  
USMMS-Albuquerque, New Mexico  
Administration



United States Department of the Interior

OFFICE OF THE SECRETARY

Minerals Management Service  
South Central Region

505 Marquette Avenue, N.W., Suite 815  
Albuquerque, New Mexico 87102

MAY 14 1982  
OIL

MAY 18 1982

133

Northwest Pipeline Corporation  
Attention: Kathy Michael  
P. O. Box 5800, Terminal Annex  
Denver, Colorado 80217

Gentlemen:

An approved copy of your 1982 plan of development for the Rosa unit area, San Juan and Rio Arriba Counties, New Mexico, is enclosed. Such plan, proposing to drill four Mesaverde wells, was approved on this date subject to like approval by the appropriate officials of the State of New Mexico.

The possibility might exist of drainage by wells outside of the unit boundary. You will be contacted by our Development Unit about this possibility.

Sincerely yours,

FORWARDED TO LARA

Gene F. Daniel  
Deputy Minerals Manager  
Oil and Gas

Enclosure

cc:  
Comm. of Public Lands, Santa Fe  
NMOCD, Santa Fe



STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

April 19, 1982

BRUCE KING  
GOVERNOR  
LARRY KEHOE  
SECRETARY

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-2434

Northwest Pipeline Corp.  
P. O. Box 5800, Terminal Annex  
Denver, Colorado 80217

133

Attention: Kathy Michael

Re: 1982 Plan of Development for  
Rosa Unit, Rio Arriba and  
San Juan Counties, New Mexico

Dear Ms. Michael:

The New Mexico Oil Conservation Division has this date approved your 1982 Plan of Development for the Rosa Unit, San Juan and Rio Arriba Counties, New Mexico. Our approval is subject to like approval by the Minerals Management Service and the Commissioner of Public Lands of the State of New Mexico.

Sincerely,

W. PERRY PEARCE  
General Counsel

WPP/dr

cc: Minerals Management Service - Albuquerque  
Commissioner of Public Lands - Santa Fe

NORTHWEST PIPELINE CORPORATION

1125 Seventeenth Street, Suite 2100  
(303) 620-3500

April 2, 1982

Mailing Address  
P.O. Box 5800, Terminal Annex  
Denver, Colorado 80217

APR 07 1982  
OIL CONSERVATION DIVISION  
SANTA FE

Assistant Area Oil  
and Gas Supervisor  
United States Geological Survey  
Western National Bank Building  
505 Marquette NW, Suite 815  
Albuquerque, New Mexico 87102

State of New Mexico  
Commissioner of Public Lands  
Attention: Mr. Ray D. Graham  
Post Office Box 1148  
Santa Fe, New Mexico 87501

State of New Mexico  
Oil Conservation Commission  
Attention: Mr. Joe Ramey  
Post Office Box 2088  
Sante Fe, New Mexico 87501

133

Gentlemen:

Re: Rosa Unit I Sec. No. 587  
San Juan and Rio Arriba  
Counties, New Mexico  
1982 Drilling Program

By letter dated April 3, 1981, Northwest Pipeline Corporation, as Unit Operator, filed a Drilling Program for the captioned unit providing for the drilling of six (6) Dakota Wells, two (2) Mesaverde Wells, one (1) Mesaverde/Dakota Well and one (1) Pictured Cliffs/Mesaverde Well. All wells were timely drilled except the #92 Dakota well, which was dropped from the program.

As of this date, the total number of wells drilled in the Rosa Unit on acreage committed to the unit is as follows:

Pictured Cliffs/Mesaverde,	
Commerciality not determined	1
Mesaverde, Commercial	24
Mesaverde, Noncommercial	2
Mesaverde, Plugged and Abandoned	6
Dakota, Commercial	6
Dakota, Noncommercial	9
Dakota, Commerciality Not Determined	8
Dakota, Plugged and Abandoned	3
Mesaverde/Dakota (not completed)	5

Regulatory Agencies  
April 2, 1982  
Page Two

Rosa Unit  
1982 Drilling Program

Northwest Pipeline Corporation, as Unit Operator, has contacted all of the Working Interest Owners and has received the necessary concurrence to propose the drilling of the following additional wells during the calendar year 1982:

<u>Well Number</u>	<u>Location</u>	<u>Formation</u>
Rosa Unit #45	W/2 Sec. 9-31N-5W	MV
Rosa Unit #90	E/2 Sec. 33-32N-6W	MV
Rosa Unit #94	W/2 Sec. 16-31N-5W	MV
Rosa Unit #95	E/2 Sec. 9-31N-5W	MV

Northwest Pipeline Corporation, as Unit Operator, will drill any offset wells that may be required to prevent drainage of unitized substances and any other wells deemed necessary or which are requested by the Unit Operator or the Working Interest Owners.

If this Drilling Program is acceptable, please signify your approval as required under Section 9 of the Unit Agreement in the space provided on the attached sheet and return an approved copy to Northwest Pipeline Corporation.

Copies of this drilling program are being sent to the Working Interest Owners as shown on the attached sheet.

Very truly yours,



Kathy Michael  
Associate Landman

KM:bjt

Enclosure

cc: Working Interest Owners

APPROVED

DATE

Area Oil and Gas Supervisor  
United States Geological Survey  
Subject to like approval by The  
Commissioner of Public Lands and  
The Oil Conservation Commission

APPROVED

DATE

Commissioner of Public Lands  
Subject to like approval by The  
United States Geological Survey  
and The Oil Conservation Commission

APPROVED

DATE

*M. Perry S. ...*  
Oil Conservation Commission  
Subject to like approval by The  
United States Geological Survey and  
The Commissioner of Public Lands

*11/19/82*

The foregoing approvals are for the Rosa Unit I Sec. No. 587, Rio Arriba  
County, New Mexico, 1982 Drilling Program.

ROSA UNIT

Working Interest Owners

Wiser Oil Company  
Post Office Box 2467  
Hobbs, New Mexico 88240

Mr. William G. Webb  
1700 Mercantile Bank Building  
Dallas, Texas 75201

El Paso Exploration Company  
Attention: James R. Permenter  
Post Office Box 1492  
El Paso, Texas 79978

Phillips Petroleum Company  
Attention: Mr. Paul Wieman  
7800 East Dorado Place  
Englewood, Colorado 80111

Amoco Production Company  
Attention: A. M. Roney  
1670 Broadway, Suite 750  
Amoco Building  
Denver, Colorado 80202

Mitchell Energy Corporation  
3900 One Shell Plaza  
Houston, Texas 77002

J. Glenn Turner, Jr., Independent  
Co-executor of Estate of J. Glenn Turner, Deceased  
1700 Mercantile Bank Building  
Dallas, Texas 75201

Mr. Frank A. Schultz  
730 Fidelity Union Tower  
Dallas, Texas 75201

Winifred K. Ponder  
1800 North Stanton Street  
El Paso, Texas 79902

Gas Producing Enterprises, Inc.  
Attention: North Region-Land Department  
2100 Prudential Plaza  
Post Office Box 749  
Denver, Colorado 80201

Ms. Lois J. Willard  
Post Office Box 5205  
Santa Fe, New Mexico 87501

Mitchell Energy Corporation  
Attention: Mr. Jerry Taylor  
1670 Broadway, Suite 3200  
Amoco Building  
Denver, Colorado 80202

Phillips Petroleum Company  
Attention: Mr. Gordon Buckman  
7800 East Dorado Place  
Englewood, Colorado 80111

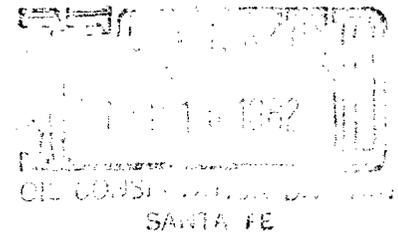
NORTHWEST PIPELINE CORPORATION

1125 Seventeenth Street, Suite 2100  
(303) 620-3500

March 11, 1982

Mailing Address  
P.O. Box 5800, Terminal Annex  
Denver, Colorado 80217

Mineral Management Service  
505 Marquette N. W.  
Suite 815  
Albuquerque, New Mexico 87102



Attention: Robert Kent

Re: Rosa Unit I Sec. 587  
San Juan & Rio Arriba  
Counties, New Mexico  
Application for Approval  
of Initial Dakota  
Participating Areas

Gentlemen:

Pursuant to our telephone conversation of March 5, we are writing to amend the effective dates of the Participating Areas applied for in our letter of June 3, 1981.

Please incorporate the following effective dates into our earlier application:

APPLICATION FOR APPROVAL OF INTIAL DAKOTA PARTICIPATING AREA - Effective January 10, 1966;

APPLICATION FOR APPROVAL OF INITIAL DAKOTA "A" PARTICIPATING AREA - Effective November 15, 1977;

APPLICATION FOR APPROVAL OF INITIAL DAKOTA "B" PARTICIPATING AREA - Effective November 29, 1977;

APPLICATION FOR APPROVAL OF INITIAL DAKOTA "C" PARTICIPATING AREA - Effective August 19, 1978;

APPLICATION FOR APPROVAL OF FIRST EXPANSION OF THE DAKOTA "D" PARTICIPATING AREA - Effective June 1, 1980;

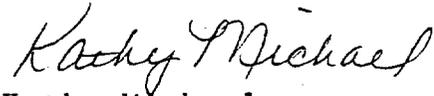
APPLICATION FOR APPROVAL OF INITIAL DAKOTA "E" PARTICIPATING AREA - Effective October 30, 1978.

Mineral Management Service  
March 11, 1982  
Page Two

The effective date for the Initial Dakota "D" Participating Area was correct as shown in our earlier letter.

We appreciate your cooperation in this matter. If anything further is needed, please be sure to let us know.

Very truly yours,



Kathy Michael  
Associate Landman

KM:bjt

cc: Working Interest Owners

ROSA UNIT

Working Interest Owners

Wiser Oil Company  
Post Office Box 2467  
Hobbs, New Mexico 88240

Mr. William G. Webb  
1700 Mercantile Bank Building  
Dallas, Texas 75201

El Paso Exploration Company  
Attention: James R. Permenter  
Post Office Box 1492  
El Paso, Texas 79978

Phillips Petroleum Company  
Attention: Mr. Paul Wieman  
7800 East Dorado Place  
Englewood, Colorado 80111

Amoco Production Company  
Attention: A. M. Roney  
1670 Broadway, Suite 750  
Amoco Building  
Denver, Colorado 80202

Mitchell Energy Corporation  
3900 One Shell Plaza  
Houston, Texas 77002

J. Glenn Turner, Jr., Independent  
Co-executor of Estate of J. Glenn Turner, Deceased  
1700 Mercantile Bank Building  
Dallas, Texas 75201

Mr. Frank A. Schultz  
730 Fidelity Union Tower  
Dallas, Texas 75201

Winifred K. Ponder  
1800 North Stanton Street  
El Paso, Texas 79902

Gas Producing Enterprises, Inc.  
Attention: North Region-Land Department  
2100 Prudential Plaza  
Post Office Box 749  
Denver, Colorado 80201

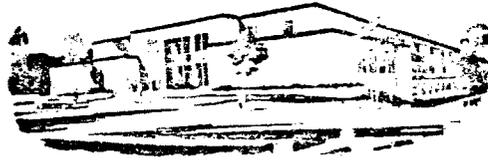
Ms. Lois J. Willard  
Post Office Box 5205  
Santa Fe, New Mexico 87501

Mitchell Energy Corporation  
Attention: Mr. Jerry Taylor  
1670 Broadway, Suite 3200  
Amoco Building  
Denver, Colorado 80202

Phillips Petroleum Company  
Attention: Mr. Gordon Buckman  
7800 East Dorado Place  
Englewood, Colorado 80111



# State of New Mexico



## Commissioner of Public Lands

June 29, 1981

P. O. BOX 1148  
SANTA FE, NEW MEXICO 87501

ALEX J. ARMIJO  
COMMISSIONER

Northwest Exploration Company  
1125 Seventeenth Street, Suite 2100  
Denver, Colorado 80217

133

Re: Rosa Unit  
San Juan & Rio Arriba  
Counties, New Mexico  
APPLICATION FOR APPROVAL  
OF INITIAL DAKOTA PARTI. AREA  
Effective January 1, 1966

APPLICATION FOR APPROVAL  
OF INITIAL DAKOTA "A"  
PARTICIPATING AREA  
Effective November 1, 1977

APPLICATION FOR APPROVAL  
OF INITIAL DAKOTA "B"  
PARTICIPATING AREA  
Effective November 1, 1977

ATTENTION: Kathy Michael

Gentlemen:

The Commissioner of Public Lands has this date approved the captioned participating areas for the Rosa Unit, San Juan & Rio Arriba Counties, New Mexico. Our approval is subject to like approval by the United States Geological Survey and the New Mexico Oil Conservation Division.

Enclosed is one approved copy for your files.

Very truly yours,

ALEX J. ARMIJO  
COMMISSIONER OF PUBLIC LANDS

BY:  
FLOYD O. PRANDO, Assistant Director  
Oil and Gas Division  
AC 505-827-2748

AJA/FOP/s  
encls.  
cc:

USGS-Albuquerque, New Mexico  
OCD- Santa Fe, New Mexico



STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

BRUCE KING  
GOVERNOR

LARRY KEHOE  
SECRETARY

July 1, 1981

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-2434

Northwest Exploration Company  
P. O. Box 5800, Terminal Annex  
Denver, Colorado 80217

Attention: Kathy Michael

Re: Case No. 133  
Rosa Unit  
Initial Dakota, Dakota "A",  
Dakota "B", Dakota "C",  
Dakota "D", Dakota "E"  
Participating Areas and  
First Expansion of the Dakota  
"D" Participating Area

Gentlemen:

We hereby approve the Initial Dakota, Dakota "A", Dakota "B", Dakota "C", Dakota "D", and Dakota "E" Participating Areas and the First Expansion of the Dakota "D" Participating Area for the Rosa Unit, San Juan and Rio Arriba Counties, New Mexico, subject to like approval by the United States Geological Survey and the Commissioner of Public Lands.

Two approved copies of the Participating Areas are returned herewith.

Yours very truly,

JOE D. RAMEY  
Director

JDR/EP/fd  
enc.

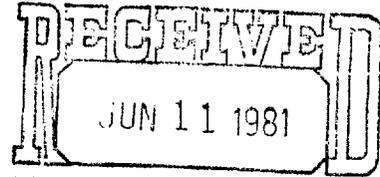
cc: U.S.G.S. - Albuquerque  
Commissioner of Public Lands

NORTHWEST EXPLORATION COMPANY

1125 Seventeenth Street, Suite 2100  
(303) 620-3500

Mailing Address  
P.O. Box 5800, Terminal Annex  
Denver, Colorado 80217

June 3, 1981



OIL CONSERVATION DIVISION  
SANTA FE

Mr. Jack Willock  
Assistant Area Oil  
and Gas Supervisor  
United States Geological Survey  
Western National Bank Building  
505 Marquette NW, Suite 815  
Albuquerque, New Mexico 87102

State of New Mexico  
Commissioner of Public Lands  
Attention: Mr. Ray D. Graham  
Post Office Box 1148  
Santa Fe, New Mexico 87501

State of New Mexico  
Oil Conservation Commission  
Attention: Mr Joe Ramey  
Post Office Box 2088  
Santa Fe, New Mexico 87501

133  
OK  
E/P  
6/22/81

Re: Rosa Unit I Sec. 587  
San Juan & Rio Arriba  
Counties, New Mexico  
APPLICATION FOR APPROVAL  
OF INITIAL DAKOTA  
PARTICIPATING AREA  
Effective January 1, 1966

APPLICATION FOR APPROVAL  
OF INITIAL DAKOTA "A"  
PARTICIPATING AREA  
Effective November 1, 1977

APPLICATION FOR APPROVAL  
OF INITIAL DAKOTA "B"  
PARTICIPATING AREA  
Effective November 1, 1977

June 3, 1981

APPLICATION FOR APPROVAL  
OF INITIAL DAKOTA "C"  
PARTICIPATING AREA  
 Effective August 1, 1978

APPLICATION FOR APPROVAL  
OF INITIAL DAKOTA "D"  
PARTICIPATING AREA  
 Effective September 1, 1978

APPLICATION FOR APPROVAL  
OF FIRST EXPANSION OF THE  
DAKOTA "D" PARTICIPATING AREA  
 Effective May 1, 1980

APPLICATION FOR APPROVAL  
OF INITIAL DAKOTA "E"  
PARTICIPATING AREA  
 Effective October 1, 1978

Gentlemen:

Pursuant to the provisions of Section 10 of the Rosa Unit Agreement I Sec. No. 587, approved January 24, 1948, NORTHWEST PIPELINE CORPORATION, as Unit Operator, hereby respectfully requests approval of the captioned Participating Areas for the Dakota Formation, to wit:

INITIAL DAKOTA PARTICIPATING AREA - Effective January 1, 1966

<u>Description of Lands</u>	<u>No. of Acres</u>	<u>Well Name</u>
N/2 Sec. 10-T31N-R5W	320.00	Rosa Unit (Carson) No. 1

The proposed Initial Dakota Participating Area is predicated upon the determination by NORTHWEST PIPELINE CORPORATION, as Unit Operator, that the Rosa Unit (Carson) No. 1 Well is capable of producing unitized substances in paying quantities from the Dakota formation. This well is as follows:

The Rosa Unit (Carson) No. 1 Well is located 575 feet from the North Line and 1300 feet from the West Line, Section 10, Township 31 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. This well was spudded on October 24, 1965 and completed on January 10, 1966, in the Dakota formation at a plug back depth of 8189 feet.

The Dakota formation was sand-water fractured below the casing from 8195 feet to 8330 feet, and later perforated from 8166 feet to 8178 feet with four shots per foot. This zone was treated with 500 gallons of mud acid. The well was shut-in before the tubing was set or the perforations acidized and an SIPC of 2280 psig was measured. On January 6, 1966, five hours after perforating, the well flowed at a rate of 1450 MCFD.

INITIAL DAKOTA "A" PARTICIPATING AREA - Effective November 1, 1977

<u>Description of Lands</u>	<u>No. of Acres</u>	<u>Well Name</u>
W/2 Sec. 25-T31N-R5W	320.00	Rosa Unit No. 62

The proposed Initial Dakota "A" Participating Area is predicated upon the determination by NORTHWEST PIPELINE CORPORATION, as Unit Operator, that the Rosa Unit No. 62 Well is capable of producing unitized substances in paying quantities from the Dakota formation. This well is as follows:

The Rosa Unit No. 62 Well is located 1020 feet from the North Line and 1820 feet from the West Line, Section 25, Township 31 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. This well was spudded on August 3, 1977 and completed on November 15, 1977 in the Dakota formation at a plug back depth of 8343 feet. The Dakota formation was perforated at the following depths with two shots per foot:

8175-93', 8219-25', 8256-70' and 8286-94'.

These perforations were fractured with sand and frac fluid. The well was shut in with an SIPT of 1794 and an SIPC of 2139 psig. On November 15, 1977 the well was tested and after flowing for twenty-five days through a 3/4 inch orifice on the 2-3/8 inch tubing the well gauged 342 MCFD with a calculated AOF of 364 MCFD.

INITIAL DAKOTA "B" PARTICIPATING AREA - Effective November 1, 1977

<u>Description of Lands</u>	<u>No. of Acres</u>	<u>Well Name</u>
W/2 Sec. 13-T31N-R5W	320.00	Rosa Unit No. 61

The proposed Initial Dakota "B" Participating Area is predicated upon the determination by NORTHWEST PIPELINE CORPORATION, as Unit Operator, that the Rosa Unit No. 61 Well is capable of producing unitized substances in paying quantities from the Dakota formation. This well is as follows:

The Rosa Unit No. 61 Well is located 1020 feet from the South Line and 1570 feet from the West Line, Section 13, Township 31 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. This well was spudded on August 30, 1977 and completed on November 29, 1977 in the Dakota formation at a plug back depth of 8282 feet. The Dakota formation was perforated from 8066 feet to 8222 feet with two shots per foot:

These perforations were fractured with sand and frac fluid. The well was shut in with an SIPT of 2032 and an SIPC of 2032 psig. On November 29, 1977 the well was tested and after flowing for eight days through a 1-1/8 inch orifice on the four inch meter run the well guaged 337 MCFD with a calculated AOF of 359 MCFD.

INITIAL DAKOTA "C" PARTICIPATING AREA - Effective August 1, 1978

<u>Description of Lands</u>	<u>No. of Acres</u>	<u>Well Name</u>
W/2 Sec. 13-T31N-R6W	320.00	Rosa Unit No. 66

The proposed Initial Dakota "C" Participating Area is predicated upon the determination by NORTHWEST PIPELINE CORPORATION, as Unit Operator, that the Rosa Unit No. 66 Well is capable of producing unitized substances in paying quantities from the Dakota formation. This well is as follows:

The Rosa Unit No. 66 Well is located 1960 feet from the South Line and 815 feet from the West Line, Section 13, Township 31 North, Range 6 West, N.M.P.M., Rio Arriba County, New Mexico. This well was spudded on June 4, 1978 and completed on August 18, 1978 in the Dakota formation at a plug back depth of 8070 feet. The Dakota formation was perforated at the following depths with two shots per foot:

7913-28', 7960-84', 8032-38' and 8050-58'.

These perforations were fractured with sand and frac fluid. The well was shut in with an SIPT of 2968 and an SIPC of 2968 psig. On August 18, 1978 the well was tested and after flowing for three (3) hours through a 3/4 inch variable choke

on the 2-3/8 inch tubing the well guaged 4427 MCFD with a calculated AOF of 5039 MCFD.

INITIAL DAKOTA "D" PARTICIPATING AREA - Effective September 1, 1978

<u>Description of Lands</u>	<u>No. of Acres</u>	<u>Well Name</u>
E/2 Sec. 17-T31N-R5W	320.00	Rosa Unit No. 65

The proposed Initial Dakota "D" Participating Area is predicated upon the determination by NORTHWEST PIPELINE CORPORATION, as Unit Operator, that the Rosa Unit No. 65 Well is capable of producing unitized substances in paying quantities from the Dakota formation. This well is as follows:

The Rosa Unit No. 65 Well is located 1140 feet from the North Line and 860 feet from the East Line, Section 17, Township 31 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. This well was spudded on July 14, 1978 and completed on September 1, 1978 in the Dakota formation at a plug back depth of 8030 feet. The Dakota formation was perforated at the following depths:

7874-92', 7920-45', and 7999-8017'.

These perforations were fractured with sand and frac fluid. The well was shut in with an SIPT of 2624 and an SIPC of 2625 psig. On September 1, 1978 the well was tested and after flowing for three (3) hours through a 3/4 inch variable choke on the 2-3/8 inch tubing the well guaged 3095 MCFD with a calculated AOF of 3585 MCFD.

FIRST EXPANSION OF THE DAKOTA "D" PARTICIPATING AREA- Effective May 1, 1980

<u>Description of Lands</u>	<u>No. of Acres</u>	<u>Well Name</u>
W/2 Sec. 17-T31N-R5W	320.00	Rosa Unit No. 68

The proposed First Expansion of the Dakota "D" Participating Area is predicated upon the determination by NORTHWEST PIPELINE CORPORATION, as Unit Operator, that the Rosa Unit No. 68 Well is capable of producing unitized substances in paying quantities from the Dakota formation. This well is as follows:

The Rosa Unit No. 68 Well is located 1850 feet from the South Line and 790 feet from the West Line, Section 17, Township 31 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. This well was spudded on August 12, 1979 and completed on May 16, 1980 in the Dakota formation at a plug back depth of 8094 feet. The Dakota formation was perforated with two shots per foot at the following depths:

7864-80', 7910-26', 7998-8016' and 8042-57'.

These perforations were fractured with sand and frac fluid. The well was shut in and an SIPC of 2460 psig and an SIPT of 2460 psig were measured. On May 16, 1980 the well was tested and after flowing for three (3) hours through a 3/4 inch variable choke on the 2-3/8 inch tubing the well gauged 5757 MCFD with a calculated AOF of 6938 MCFD.

INITIAL DAKOTA "E" PARTICIPATING AREA - Effective October 1, 1978

<u>Description of Lands</u>	<u>No. of Acres</u>	<u>Well Name</u>
E/2 Sec. 29-T31N-R5W	320.00	Rosa Unit No. 64

The proposed Initial Dakota "E" Participating Area is predicated upon the determination by NORTHWEST PIPELINE CORPORATION, as Unit Operator, that the Rosa Unit No. 64 Well is capable of producing unitized substances in paying quantities from the Dakota formation. This well is as follows:

The Rosa Unit No. 64 Well is located 790 feet from the North Line and 790 feet from the East Line, Section 29, Township 31 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. This well was spudded on August 7, 1978 and completed on October 5, 1978 in the Dakota formation at a plug back depth of 8070 feet. The Dakota formation was perforated at the following depths with two shots per foot:

7950-68' and 8001-14'

These perforations were fractured with sand and frac fluid. The well was shut in October 5, 1978 for twenty-five (25) days with an SIPT of 2280 and an SIPC of 2280 psig. On October 30, 1978

the well was tested and after flowing for three (3) hours through a 3/4 inch variable choke on the 2-3/8 inch tubing the well guaged 1321 MCFD with a calculated AOF of 1843 MCFD.

In support of this application, the following listed exhibits are made a part hereof:

EXHIBIT "A"

Ownership map reflecting the boundaries of the Unit and the proposed Dakota Participating Areas within the Rosa Unit.

EXHIBIT "B"

Geologic Report on the proposed Participating Areas within the Rosa Unit.

EXHIBIT "C"

- Figure No. 1: Structure Map
- Figure No. 2: Net Sand Thickness Map  
Upper Dakota Sand
- Figure No. 3: Gross Sand Thickness Map
- Figure No. 4: Typical Well Log
- Figure No. 5: Stratigraphic Cross Section A-A'
- Figure No. 6: Stratigraphic Cross Section B-B'

EXHIBIT "D"

Rosa Unit Production Schedule

Attached hereto are Schedules I, I-A, I-B, I-C, I-D, II-D and I-E showing the proposed Dakota Participating Areas. These schedules described the Participating Areas, show the percentage of unitized substances allocated to each unitized tract, and the percentage of ownership in the tracts.

If the proposed Participating Areas set forth herein meet with your approval, please indicate such approval in the space provided on the attached sheet and return an approved copy for our files.

June 3, 1981

Copies of this letter, exhibits and schedules are being sent to the Working Interest Owners shown on the attached sheet.

Very truly yours

*Kathy Michael*

Kathy Michael  
Associate Landman

KM:vh  
Attachments

cc: Working Interest Owners

Approved 3/11 19 81

*[Signature]*

---

Director  
Oil Conservation Division  
Energy and Minerals Department

THIS APPROVAL GRANTED SUBJECT TO LINE APPROVAL  
BEING GRANTED BY THE GEOLOGICAL SURVEY AND BY THE  
COMMISSIONER OF PUBLIC LANDS, OF THE STATE OF NEW MEXICO.

ROSA UNIT

Working Interest Owners

Wiser Oil Company  
Post Office Box 2467  
Hobbs, New Mexico 88240

Mr. William G. Webb  
1700 Mercantile Bank Building  
Dallas, Texas 75201

El Paso Exploration Company  
Attention: James R. Permenter  
Post Office Box 1492  
El Paso, Texas 79978

Phillips Petroleum Company  
Attention: Mr. Paul Wieman  
7800 East Dorado Place  
Englewood, Colorado 80111

Amoco Production Company  
Attention: A. M. Roney  
1670 Broadway, Suite 750  
Amoco Building  
Denver, Colorado 80202

Mitchell Energy Corporation  
3900 One Shell Plaza  
Houston, Texas 77002

J. Glenn Turner, Jr., Independent  
Co-executor of Estate of J. Glenn Turner, Deceased  
1700 Mercantile Bank Building  
Dallas, Texas 75201

Mr. Frank A. Schultz  
730 Fidelity Union Tower  
Dallas, Texas 75201

Winifred K. Ponder  
1800 North Stanton Street  
El Paso, Texas 79902

Gas Producing Enterprises, Inc.  
Attention: North Region-Land Department  
2100 Prudential Plaza  
Post Office Box 749  
Denver, Colorado 80201

Ms. Lois J. Willard  
Post Office Box 5205  
Santa Fe, New Mexico 87501

Mitchell Energy Corporation  
Attention: Mr. Jerry Taylor  
1670 Broadway, Suite 3200  
Amoco Building  
Denver, Colorado 80202

Phillips Petroleum Company  
Attention: Mr. Gordon Buckman  
7800 East Dorado Place  
Englewood, Colorado 80111

EXHIBIT "B"  
ROSA UNIT  
RIO ARRIBA AND SAN JUAN COUNTIES, NEW MEXICO

GEOLOGICAL REPORT  
DAKOTA PRODUCING INTERVAL

PROPOSED INITIAL DAKOTA FORMATION  
PARTICIPATING AREAS

The Rosa Unit is located in the Northeast quadrant of the New Mexico portion of the San Juan Basin along the synclinal axis of the Basin. It is composed of 54,211.01 acres within the unit outline of which 53,733.30 acres are committed to the unit.

Within the Rosa Unit, the Dakota Producing Interval (NMOCC Order No. R 1670-C Rule 25) has been tested in 23 wells resulting in eight (8) noncommercial wells, six (6) plugged and abandoned wells, seven (7) commercial wells and two (2) undetermined wells.

To date, the producing sands within the Dakota Producing Interval are restricted to the Upper (Marine) and Middle (Fluviatile) Dakota Sands. There are no sands developed within the Graneros Shale interval above, and the Lower or Basal Dakota Sands below are apparently water-wet.

As to the producing Dakota Sands, the Upper Dakota Sand is littoral marine sand with depositional characteristics that range from deltaic to off-shore bar in the immediate vicinity of the Rosa Unit. Porosity, grain size and sorting generally increase upward in the Upper Dakota Sand. The sand interval is generally correlable across the extent of the unit, although attempts to isopach the sand thickness fail from lack of data. The Middle Dakota sands are interpreted to be a network of localized fluvial channel deposits. These sands are generally tight, often siliceous, with low porosity in the 0 to 6% range. Local porosity development of greater than 6% and the presence, in some instances, of hi-angle natural fractures permit these sands to be productive. These Middle Dakota Sands are not individually correlable across the unit.

Well testing information gathered to date does not differentiate the productive capabilities between the Upper and Middle Dakota producing sands. Experience dictates that evaluation of the mechanical logs on these wells can be misleading. The actual drainage pattern for any given well in the Rosa Unit is probably quite irregular and not possible, at this time, to map.

Included in the report are three (3) maps, a type log and two cross-sections entitled Exhibit "C", Figures 1 through 6.

Exhibit "C", Figure No. 1 shows the configuration of the subsurface structure of the Dakota interval using sea level as the datum plane, the top of the Graneros as the mapping horizon and a contour interval of 50 feet.

The structure map indicates a structural trough extending generally east-west across the Rosa Unit and rising toward the west. This trough is one limb of the synclinal axis of the San Juan Basin. It is apparent that here, as in much of the San Juan Basin, stratigraphy rather than structure controls the accumulation of hydrocarbons within the Dakota producing interval.

Exhibit "C", Figure No. 2 shows the thickness in feet of net reservoir sand which is interpreted from well logs to be present at each drilling site within the Upper Dakota Sand. No attempt has been made to contour the isopachous thickness of this reservoir sand.

Exhibit "C", Figure No. 3 indicates the gross sand development within the Middle Dakota interval at each drilling site as interpreted from well logs. No attempt has been made to contour the isopachous thickness of these gross sands.

Exhibit "C", Figure No. 4 is offered as a type log for the Rosa Unit. Completed intervals for this well, the Amoco Production Company's Rosa No. 68, SW/4 Section 17, T31N-R5W, Rio Arriba County, New Mexico, are indicated on the log track. Nomenclature, as used in this report, is indicated between the induction and porosity logs.

Exhibit "C", Figure Nos. 5 and 6 are stratigraphic cross sections of Rosa Unit wells in the area under consideration for participation. The stratigraphic datum for these wells is the base of the Greenhorn.

Exhibit "D", is a tabulation of the Dakota gas production from the unit. The cumulative production through July 31, 1980 is shown. The Rosa Unit has produced a total of 4,749,219 MCF from the Dakota as of August 1, 1980.

It is apparent from these exhibits that continuity of reservoir sands across the unit is questionable in the case of the Upper Dakota Sand and apparently not possible in the case of the Middle Dakota Sands. However, we believe that a 320-acre spacing pattern can be used to effectively produce the Dakota reservoir system. Because of the practical limitations in mapping and predicting a drainage area, it is recommended that each 320-acre tract be designated as a drilling and producing area for the Dakota formation in this unit at this time.

#### INITIAL DAKOTA PARTICIPATING AREA

Effective Date: January 1, 1966  
Proposed Acreage: Township 31 North, Range 5 West  
Section 10: N/2 (320 Acres)

The Initial Dakota Participating Area is based on interpretation of the well logs and the Initial Test results of the Rosa Unit (Carson) No. 1 Well. From this date, it is inferred that the proposed acreage is capable of producing unitized substances in commercial quantities from the Dakota Producing Interval.

The Rosa Unit (Carson) No. 1 Well is located 575 feet from the North Line and 1300 feet from the West Line, Section 10, Township 31 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. This well was spudded on October 24, 1965 and completed on January 10, 1966, in the Dakota formation at a plug back depth of 8189 feet.

The Dakota formation was sand-water fractured below the casing from 8195 feet to 8330 feet, and later perforated from 8166 feet to 8178 feet with four shots per foot. This zone was treated with 500 gallons of mud acid. The well was shut-in before the tubing was set or the perforations acidized and an SIPC of 2280 psig was measured. On January 6, 1966, five hours after perforating, the well flowed at a rate of 1450 MCFD.

On the basis of this well, the N/2 of Section 10 (320.00 acres) is recommended as the Initial Dakota Participating Area.

INITIAL DAKOTA "A" PARTICIPATING AREA

Effective Date: November 1, 1977  
Proposed Acreage: Township 31 North, Range 5 West  
Section 25: W/2 (320 Acres)

The Initial Dakota "A" Participating Area is based on interpretation of the well logs and the Initial Test results of the Rosa Unit No. 62 Well. From this date, it is inferred that the proposed acreage is capable of producing unitized substances in commercial quantities from the Dakota Producing Interval.

The Rosa Unit No. 62 Well is located 1020 feet from the North Line and 1820 feet from the West Line, Section 25, Township 31 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. This well was spudded on August 3, 1977 and completed on November 15, 1977 in the Dakota formation at a plug back depth of 8343 feet. The Dakota formation was perforated at the following depths with two shots per foot:

8175-93', 8219-25', 8256-70' and 8286-94'.

These perforations were fractured with sand and frac fluid. The well was shut in with an SIPI of 1794 and an SIPC of 2139 psig. On November 15, 1977 the well was tested and after flowing for

twenty-five days through a 3/4 inch orifice on the 2-3/8 inch tubing the well guaged 342 MCFD with a calculated AOF of 364 MCFD.

On the basis of this well, the W/2 of Section 25 (320.00 acres) is recommended as the Initial Dakota "A" Participating Area.

INITIAL DAKOTA "B" PARTICIPATING AREA

Effective Date: November 1, 1977  
Proposed Acreage: Township 31 North, Range 5 West  
Section 13: W/2 (320 Acres)

The Initial Dakota "B" Participating Area is based on interpretation of the well logs and the Initial Test results of the Rosa Unit No. 61 Well. From this date, it is inferred that the proposed acreage is capable of producing unitized substances in commercial quantities from the Dakota Producing Interval.

The Rosa Unit No. 61 Well is located 1020 feet from the South Line and 1570 feet from the West Line, Section 13, Township 31 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. This well was spudded on August 30, 1977 and completed on November 29, 1977 in the Dakota formation at a plug back depth of 8282 feet. The Dakota formation was perforated from 8066 feet to 8222 feet with two shots per foot:

These perforations were fractured with sand and frac fluid. The well was shut in with an SIPT of 2032 and an SIPC of 2032 psig. On November 29, 1977 the well was tested and after flowing for eight days through a 1-1/8 inch orifice on the four inch meter run the well guaged 337 MCFD with a calculated AOF of 359 MCFD.

On the basis of this well, the W/2 of Section 13 (320.00 acres) is recommended as the Initial Dakota "B" Participating Area.

INITIAL DAKOTA "C" PARTICIPATING AREA

Effective Date: August 1, 1978  
Proposed Acreage: Township 31 North, Range 6 West  
Section 13: W/2 (320 Acres)

The Initial Dakota "C" Participating Area is based on interpretation of the well logs and the Initial Test results of the Rosa Unit No. 66 Well.

From this date, it is inferred that the proposed acreage is capable of producing unitized substances in commercial quantities from the Dakota Producing Interval.

The Rosa Unit No. 66 Well is located 1960 feet from the South Line and 815 feet from the West Line, Section 13, Township 31 North, Range 6 West, N.M.P.M., Rio Arriba County, New Mexico. This well was spudded on June 4, 1978 and completed on August 18, 1978 in the Dakota formation at a plug back depth of 8070 feet. The Dakota formation was perforated at the following depths with two shots per foot:

7913-28', 7960-84', 8032-38' and 8050-58'.

These perforations were fractured with sand and frac fluid. The well was shut in with an SIPT of 2968 and an SIPC of 2968 psig. On August 18, 1978 the well was tested and after flowing for three (3) hours through a 3/4 inch variable choke on the 2-3/8 inch tubing the well gauged 4427 MCFD with a calculated AOF of 5039 MCFD.

On the basis of this well, the W/2 of Section 13 (320.00 acres) is recommended as the Initial Dakota "C" Participating Area.

INITIAL DAKOTA "D" PARTICIPATING AREA

Effective Date: September 1, 1978  
Proposed Acreage: Township 31 North, Range 5 West  
Section 17: E/2 (320 Acres)

The Initial Dakota "D" Participating Area is based on interpretation of the well logs and the Initial Test results of the Rosa Unit No. 65 Well. From this date, it is inferred that the proposed acreage is capable of producing unitized substances in commercial quantities from the Dakota Producing Interval.

The Rosa Unit No. 65 Well is located 1140 feet from the North Line and 860 feet from the East Line, Section 17, Township 31 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. This well was spudded on July 14, 1978 and completed on September 1, 1978 in the Dakota formation at a plug back depth of 8030 feet. The Dakota formation was perforated at the following depths:

7874-92', 7920-45', and 7999-8017'.

These perforations were fractured with sand and frac fluid. The well was shut in with an SIPT of 2624 and an SIPC of 2625 psig. On September 1, 1978 the well was tested and after flowing for three (3) hours through a 3/4 inch variable choke on the 2-3/8 inch tubing the well guaged 3095 MCFD with a calculated AOF of 3585 MCFD.

On the basis of this well, the E/2 of Section 17 (320.00 acres) is recommended as the Initial Dakota "D" Participating Area.

FIRST EXPANSION DAKOTA "D" PARTICIPATING AREA

Effective Date: May 1, 1980  
Proposed Acreage: Township 31 North, Range 5 West  
Section 17: W/2 (320 Acres)

The First Expansion Dakota "D" Participating Area is based on interpretation of the well logs and the Initial Test results of the Rosa Unit No. 68 Well. From this date, it is inferred that the proposed acreage is capable of producing unitized substances in commercial quantities from the Dakota Producing Interval.

The Rosa Unit No. 68 Well is located 1850 feet from the South Line and 790 feet from the West Line, Section 17, Township 31 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. This well was spudded on August 12, 1979 and completed on May 16, 1980 in the Dakota formation at a plug back depth of 8094 feet. The Dakota formation was perforated with two shots per foot at the following depths:

7864-80', 7910-26', 7998-8016' and 8042-57'.

These perforations were fractured with sand and frac fluid. The well was shut in and an SIPC of 2460 psig and an SIPT of 2460 psig were measured. On May 16, 1980 the well was tested and after flowing for three (3) hours through a 3/4 inch variable choke on the 2-3/8 inch tubing the well guaged 5757 MCFD with a calculated AOF of 6938 MCFD.

On the basis of this well, the W/2 of Section 17 (320.00 acres) is recommended as the First Expansion Dakota "D" Participating Area.

INITIAL DAKOTA "E" PARTICIPATING AREA

Effective Date: October 1, 1978  
Proposed Acreage: Township 31 North, Range 5 West  
Section 29: E/2 (320 Acres)

The Initial Dakota "E" Participating Area is based on interpretation of the well logs and the Initial Test results of the Rosa Unit No. 64 Well. From this date, it is inferred that the proposed acreage is capable of producing unitized substances in commercial quantities from the Dakota Producing Interval.

The Rosa Unit No. 64 Well is located 790 feet from the North Line and 790 feet from the East Line, Section 29, Township 31 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. This well was spudded on August 7, 1978 and completed on October 5, 1978 in the Dakota formation at a plug back depth of 8070 feet. The Dakota formation was perforated at the following depths with two shots per foot:

7950-68' and 8001-14'

These perforations were fractured with sand and frac fluid. The well was shut in October 5, 1978 for twenty-five (25) days with an SIPT of 2280 and an SIPC of 2280 psig. On October 30, 1978 the well was tested and after flowing for three (3) hours through a 3/4 inch variable choke on the 2-3/8 inch tubing the well gauged 1321 MCFD with a calculated AOF of 1843 MCFD.

On the basis of this well, the E/2 of Section 29 (320.00 acres) is recommended as the Initial Dakota "E" Participating Area.

SCHEDULE I.  
INITIAL DAKOTA PARTICIPATING AREA  
ROSA UNIT

SERIAL NUMBER	DESCRIPTION	NUMBER OF ACRES	DRILLING BLOCK		PERCENTAGE COMMITTED	PRESENT ACT PARTICIPAT
			OWNERSHIP	PERCENTAGE		
USA SF-078763	T-31-N, R-5-W Sec. 10: N/2	320.00			12.500%	100.00000%
			<u>TRACT 13</u>			
	Royalty; Working Interest; Amoco Production Company; ORRI:				12.500% 87.500% 0.000% <u>100.000%</u>	

EFFECTIVE: 1-1-66

SCHEDULE I-A.  
 INITIAL DAKOTA "A" PARTICIPATING AREA  
 ROSA UNIT

SERIAL NUMBER	DESCRIPTION	NUMBER OF ACRES	DRILLING BLOCK		PERCENTAGE COMMITTED	PRESENT ACT PARTICIPAT
			OWNERSHIP	PERCENTAGE		
USA SF-078768	T-31-N, R-5-W Sec. 25: W/2	320.00	Royalty; Working Interest; Amoco Production Company; Mitchell Energy Corp.; ORRI:	12.500% 43.750% 43.750% 0.000% 100.000%	12.500% 43.750% 43.750% 0.000% 100.000%	100.00000%
<u>TRACT 22</u>						

EFFECTIVE: 11-1-77

SCHEDULE I-B.  
INITIAL DAKOTA "B" PARTICIPATING AREA  
ROSA UNIT

SERIAL NUMBER	DESCRIPTION	NUMBER OF ACRES	DRILLING BLOCK		PRESENT ACT PARTICIPAT
			OWNERSHIP	PERCENTAGE	
USA SF-078762	I-31-N, R-5-W Sec. 13: W/2	320.00	<u>TRACT 15</u>		12.500%
			Royalty;	12.500%	
			Working Interest:	43.750%	
			Amoco Production Company; Mitchell Energy Corp.;	43.750%	
	ORRI:		0.000%	100.000%	
					100.00000%

EFFECTIVE: 11-1-77

SCHEDULE I-C.  
 INITIAL DAKOTA "C" PARTICIPATING AREA  
 ROSA UNIT

SERIAL NUMBER	DESCRIPTION	NUMBER OF ACRES	OWNERSHIP	DRILLING BLOCK	PERCENTAGE COMMITTED	PRESENT ACT PARTICIPAT
USA SF-078767	I-31-N, R-6-W Sec. 13: W/2	320.00	Royalty; Working Interest; Amoco Production Company; ORRI:	TRACT 14	12.500% 87.500% 0.000% 100.000%	100.00000%

SCHEDULE I-D.  
INITIAL DAKOTA "D" PARTICIPATING AREA  
ROSA UNIT

SERIAL NUMBER	DESCRIPTION	NUMBER OF ACRES	DRILLING BLOCK		PERCENTAGE COMMITTED	PRESENT ACT PARTICIPAT
			OWNERSHIP	PERCENTAGE		
USA SF-078769	T-31-N, R-5-W Sec. 17: E/2	320.00			12.500%	100.00000%
	Royalty; Working Interest: Amoco Production Company; ORRI:				87.500% 0.000% 100.000%	
	<u>TRACT 17</u>					

EFFECTIVE: 9-1-78

SCHEDULE II-D.  
 FIRST EXPANSION OF THE DAKOTA "D" PARTICIPATING AREA  
 ROSA UNIT

SERIAL NUMBER	DESCRIPTION	NUMBER OF ACRES	OWNERSHIP	DRILLING BLOCK	PERCENTAGE COMMITTED	PRESENT ACT PARTICIPAT
USA SF -078769	T-31-N, R-5-W Sec. 17: ALL	640.00	Royalty; Working Interest; Amoco Production Company; ORRI:	TRACT 17	12.500% 87.500% 0.000% 100.000%	100.00000%

EFFECTIVE: 5-1-80

UNIT AREA EXPANSION SCHEDULE

SCHEDULE I-E.  
INITIAL DAKOTA "E" PARTICIPATING AREA  
ROSA UNIT

SERIAL NUMBER	DESCRIPTION	NUMBER OF ACRES	OWNERSHIP	DRILLING BLOCK	PERCENTAGE COMMITTED	PRESENT ACTI PARTICIPAT
---------------	-------------	-----------------	-----------	----------------	----------------------	-------------------------

TRACT 18						
USA SF-078764	T-31-N, R-5-W Sec. 29: N/2NE, W/2SE	160.00	Royalty; Working Interest: Amoco Production Company; ORRI:		12.500% 87.500% 0.000% <u>100.000%</u>	50.00000%

TRACT 21						
USA SF-079165	T-31-N, R-5-W Sec. 29: S/2NE, E/2SE	160.00	Royalty; Working Interest: Amoco Production Company; ORRI:		12.500% 87.500% 0.000% <u>100.000%</u>	50.00000%

RECAPITULATION  
DESCRIPTION OF LANDS IN PARTICIPATING AREA

Township 31 North, Range 5 West  
Section 29: E/2

Total Number of Acres in Participating Area 320.00  
Total Number of Acres Committed to Participating Area 320.00

EFFECTIVE: 10-1-78

