

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

LAND DEPARTMENT

P.O. BOX 8900  
SALT LAKE CITY, UTAH 84108-0900  
801-584-6669  
801-584-7215

763-86

June 15, 1987

2419t

Assistant District Manager, Minerals  
Bureau of Land Management  
425 Montano N.E.  
Albuquerque, New Mexico 87107

State of New Mexico  
Commissioner of Public Lands  
Attention: Mr. Floyd O. Prando  
P. O. Box 1148  
Santa Fe, New Mexico 87501

State of New Mexico  
Oil Conservation Division  
Attention: Mr. William J. LeMay  
P. O. Box 2088  
Santa Fe, New Mexico 87501

Re: San Juan 30-5 Unit #14-08-001-346  
Rio Arriba County, New Mexico

APPLICATION FOR APPROVAL OF THE ELEVENTH EXPANDED PARTICIPATING AREA  
Dakota Formation  
Effective October 1, 1983

APPLICATION FOR APPROVAL OF THE TWELFTH EXPANDED PARTICIPATING AREA  
Dakota Formation  
Effective November 1, 1983

APPLICATION FOR APPROVAL OF THE THIRTEENTH EXPANDED PARTICIPATING AREA  
Dakota Formation  
Effective December 1, 1983

APPLICATION FOR APPROVAL OF THE FOURTEENTH EXPANDED PARTICIPATING AREA  
Dakota Formation  
Effective February 1, 1984

APPLICATION FOR APPROVAL OF THE FIFTEENTH EXPANDED PARTICIPATING AREA  
Dakota Formation  
Effective July 1, 1984

*D - Unit letter  
Tax  
Ry*

*Re:*

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Gentlemen:

Pursuant to the provisions of Section 11(b) of the San Juan 30-5 Unit Agreement #14-08-001-346, approved November 7, 1952, NORTHWEST PIPELINE CORPORATION, as Unit Operator, hereby respectfully requests approval of the Eleventh, Twelfth, Thirteenth, Fourteenth and Fifteenth Expanded Participating Areas for the Dakota Formation.

These proposed revisions of the participating area for the Dakota Formation are predicated upon the determination by Northwest Pipeline Corporation, as Unit Operator, that the following San Juan 30-5 Unit Dakota wells, which were completed outside the limits of the existing Dakota Participating Area, are capable of producing unitized substances in paying quantities for the Dakota Formation.

ELEVENTH EXPANDED PARTICIPATING AREA - EFFECTIVE OCTOBER 1, 1983

<u>Description of Land</u>	<u>No. of Acres</u>
<u>Township 30 North, Range 5 West, N.M.P.M.</u>	640.00
Section 26: S/2	
Section 28: E/2	

The well data is as follows:

The San Juan 30-5 Unit #92 well is located 1820 feet from the South line and 1710 feet from the West line, Section 26, Township 30 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. This well was spudded on August 26, 1983. The Dakota formation was completed on September 11, 1983. The Dakota formation was perforated with one shot per foot over the following intervals:

7848' - 7864' and 7887' - 7894'

A total of 25 holes were shot.

The formation was fractured with 127,680 gallons of pad water carrying 60,000 pounds of 40/60 sand and 10,000 pounds of 20/40 sand. The well was tested on October 7, 1983 using a positive choke in a three hour test. A flow rate of 1540 Mcfd was measured with a calculated AOF of 1581 Mcfd. The ISIP was measured at 2770 psig.

The San Juan 30-5 Unit #95 well is located 1600 feet from the North line and 990 feet from the East line of Section 28, Township 30 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. The well was spudded on September 3, 1983 and completed in the Dakota formation on September 17, 1983. The plug back depth is 7900'. The Dakota formation was perforated with one shot per foot over the following intervals:

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7813' - 7830' and 7857' - 7861'

A total of 23 holes were shot.

These perforations were broken down with 1000 gallons of 15% hydrochloric acid. The Dakota formation was sand water fractured using a 10,000 gallon pad of slick water followed by 60,000 lbs of 40/60 sand and 10,000 lbs of 20/40 sand. Total fluid in the formation was reported as 3126 bbls. On October 24, 1983 this well was tested for three hours using a positive choke. During the test, 356 Mcf of gas were vented, which resulted in a calculated AOF of 2417 Mcfd. Both SICP and SITP were 2705 psig, while flowing tubing and casing pressures were 175 and 602 psig, respectively. A very light mist was produced throughout the test.

TWELFTH EXPANDED PARTICIPATING AREA - EFFECTIVE NOVEMBER 1, 1983

<u>Description of Land</u>	<u>No. of Acres</u>
<u>Township 30 North, Range 5 West, N.M.P.M.</u>	640.00
Section 35: All	

The well data is as follows:

The San Juan 30-5 Unit #86 well is located 1060 feet from the South line and 850 feet from the West line of Section 35, Township 30 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. This well was spudded on October 3, 1983 and the Dakota formation was completed on October 29, 1983. The plug back depth is 8270'. The well was perforated with 2 shots per foot over the following intervals:

8210' - 8220' and 8246' - 8250'

A total of 30 holes were shot.

The perforations were treated and the formation was sand water fractured using 2348 bbls of treated fluid carrying 40,000 pounds of 40/60 sand and 10,000 pounds of 20/40 sand. Radioactive tracer was added with the 20/40 sand at a rate of 1/3 millicurie per 1000 pounds of sand. The Dakota formation was tested on November 29, 1983 using a positive choke. During this three hour test, the well made 341 Mcf of gas with a flowing tubing pressure of 163 psig. The SITP and the SICP were 2700 psig. After 45 minutes of the test, the well began to produce a light mist and continued to produce this mist throughout the remainder of the test. The calculated AOF was 2324 Mcfd.

The San Juan 30-5 Unit #101 well is located 820 feet from the North line and 1050 feet from the East line of Section 35, Township 30 North, Range 5

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West, N.M.P.M., Rio Arriba County, New Mexico. This well was spudded on September 22, 1983 and completed in the Dakota formation on October 9, 1983. The plug back depth is 8290'. The Dakota formation was perforated with one shot per foot over the following intervals:

8215' - 8230' and 8253' - 8260'

A total of 24 holes were shot.

These perforations were sand water fractured using 3136 bbls of treated water carrying 60,000 pounds of 40/60 sand and 10,000 pounds of 20/40 sand. Along with the 20/40 sand, 1/3 millicurie of radioactive tracer was added with every 1000 pounds of sand. The Dakota formation was tested on November 1, 1983 using a positive choke. During this three hour test, the well made 220 Mcf of gas with a flowing tubing pressure of 105 psig. A light mist was produced throughout the test. Both the SITP and the SICP were 2890 psig. The calculated AOF was 1494 Mcfd.

THIRTEENTH EXPANDED PARTICIPATING AREA - EFFECTIVE DECEMBER 1, 1983

<u>Description of Land</u>	<u>No. of Acres</u>
<u>Township 30 North, Range 5 West, N.M.P.M.</u>	320.00
Section 27: E/2	

The well data is as follows:

The San Juan 30-5 Unit #94 well is located 835 feet from the North line and 1530 feet from the East line of Section 27, Township 30 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. This well was spudded on October 23, 1983 and completed in the Dakota formation on November 17, 1983. The plug back depth is 8120'. The Dakota formation was perforated with one shot per foot over the following intervals:

8021' - 8040' and 8064' - 8066'

A total of 23 holes were shot.

These perforations were broken down with 1000 gallons of 15% hydrochloric acid. The Dakota formation was sand water fractured using a 10,000 gallon pad of slick water followed by 60,000 lbs of 40/60 sand and 10,000 lbs of 20/40 sand. Total fluid in the formation was reported as 2513 bbls. On December 14, 1983 this well was tested for three hours using a positive choke. During the test, 473 Mcf of gas were vented, which resulted in a calculated AOF of 3520 Mcfd. Both SICP and SITP were 2560 psig, while flowing tubing and casing pressures were 238 and 891 psig, respectively. A light mist was produced throughout the test.

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FOURTEENTH EXPANDED PARTICIPATING AREA - EFFECTIVE FEBRUARY 1, 1984

<u>Description of Land</u>	<u>No. of Acres</u>
<u>Township 30 North, Range 5 West, N.M.P.M.</u>	960.00
Section 18: W/2	
Section 19: E/2	
Section 29: N/2	

The well data is as follows:

The San Juan 30-5 Unit #88 well is located 1750 feet from the South line and 1120 feet from the West line of section 18, Township 30 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. The well was spudded on December 30, 1983 and the Dakota formation was completed on January 21, 1984. The plug back depth is 7820'. The Dakota formation was perforated with one shot per foot over the following interval:

7699' - 7718'

A total of 20 holes were shot.

The perforations were treated with 1965 bbls of pad water followed by 50,000 pounds of 40/60 sand and 6620 pounds of 20/40 sand. On February 6, 1984 the well was tested using a positive choke. During this three hour test the well produced at a rate of 2176 Mcfd, with a light spray of water. Both the SITP and the SICP were 2710 psig and the flowing tubing pressure was 161 psig. The calculated AOF was 2241 Mcfd.

The San Juan 30-5 Unit #89 well is located 1640 feet from the North line and 970 feet from the East line of Section 19, Township 30 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. It was spudded on January 9, 1984 and on January 26, 1984 the Dakota formation was completed. The plug back depth is 7917'. The Dakota formation was perforated with one shot per foot over the following intervals:

7785' - 7809'    7829' - 7830'

A total of 27 holes were shot.

The perforations were treated with 2349 bbls of treated fluid followed by 50,000 pounds of 40/60 sand and 10,000 pounds of 20/40 sand. On February 14, 1984 the well was tested for three hours using a positive choke. During this test the well produced at a rate of 3034 Mcfd, with a heavy mist of water. Both the SITP and the SICP were 2637 psig and the flowing tubing pressure during the test was 228 psig. The calculated AOF was 3275 Mcfd.

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The San Juan 30-5 Unit #97 well is located 1580 feet from the North line and 810 feet from the East line of Section 29, Township 30 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. This well was spudded on January 26, 1984 and completed in the Dakota formation on February 7, 1984. The plug back depth is 8300'. The Dakota formation was perforated with one shot per foot at the following intervals:

8176' - 8190' and 8211' - 8214'

A total of 19 holes were shot.

These perforations were broken down with 1000 gallons of 15% hydrochloric acid. The Dakota formation was sand water fractured using a 10,000 gallon pad of slick water followed by 50,000 lbs of 40/60 sand and 10,000 lbs of 20/40 sand. Total fluid in the formation was reported as 2170 bbls. On February 27, 1984 this well was tested for three hours using a positive choke. During the test 194 Mcf of gas were vented, which resulted in a calculated AOF of 1242 Mcfd. Both SICP and SITP were 2645 psig, while flowing tubing and casing pressures were 85 and 348 psig, respectively. A light mist was produced throughout the test.

FIFTEENTH EXPANDED PARTICIPATING AREA - EFFECTIVE JULY 1, 1984

<u>Description of Land</u>	<u>No. of Acres</u>
<u>Township 30 North, Range 5 West, N.M.P.M.</u> <u>Section 13: E/2</u>	217.76

The well data is as follows:

The San Juan 30-5 Unit #104 well is located 1630 feet from the North line and 1000 feet from the East line of Section 13, Township 30 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. This well was spudded on October 26, 1983 and completed in the Dakota formation on January 30, 1984. The plug back depth is 8406'. The Dakota formation was perforated with a total of 10 holes at the following depths:

8296', 8303', 8310', 8336', 8343', 8350', 8365', 8376', 8383'  
and 8390'.

The formation was sand water fractured using 98,000 lbs of 20/40 sand and 21,000 lbs of 10/20 sand with 90,359 gallons of treated water. On July 20, 1984 this well was tested for three hours using a positive choke. During the test, the well produced at an average rate of 1035 Mcfd with a tubing pressure of 71 psig and a casing pressure of 891 psig. SICP and SITP were 2695 and 2160 psig, respectively. The resultant AOF was 1131 Mcfd. A heavy mist was produced throughout the test.

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In support of these applications, the following listed Exhibits are made a part thereof:

Exhibit "A"

Ownership maps reflecting the boundaries of the Unit and the Proposed Eleventh through Fifteenth Expansions of the Participating Area of the Dakota Formation within the San Juan 30-5 Unit.

Exhibit "B"

Geological Reports on the above cited Participating Areas of the Dakota Formation within the San Juan 30-5 Unit.  
Well economics for these wells enlarging the Dakota Participating Areas within the San Juan 30-5 Unit.

Exhibit "C"

Figure No. 1: San Juan 30-5 Dakota Structure Map  
Figure No. 2: San Juan 30-5 Dakota Isopach Map  
Figure No. 3: San Juan 30-5 Dakota Sand Thickness Map

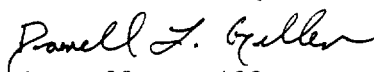
Exhibit "D"

Table No. I: Schedule of San Juan 30-5 Unit Dakota Production

Attached are Schedules XII, XIII, XIV, XV, and XVI showing the proposed cited above for the Dakota Formation in the San Juan 30-5 Unit Area. These Schedules describe the participating area, show the percentage of unitized substances allocated to each unitized tract, and the percentage of ownership in the tracts.

If these applications referenced above meet with your approval, please indicate such approval in the space provided on the attached sheet and return an approved copy for our files.

Sincerely,

  
Darrell L. Gillen  
Land/NGPA Supervisor

DLG:sp  
Attachments  
cc: K. J. Stracke  
W. O. Curtis

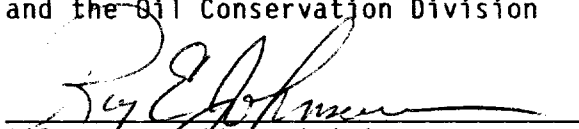
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APPROVED \_\_\_\_\_  
Assistant District Manager, Minerals  
Subject to like approval by the  
Commissioner of Public Lands and the  
Oil Conservation Division

DATE \_\_\_\_\_

APPROVED \_\_\_\_\_  
Commissioner of Public Lands  
Subject to like approval by the  
Assistant District Manager, Minerals  
and the Oil Conservation Division

DATE \_\_\_\_\_

APPROVED  \_\_\_\_\_  
Oil Conservation Division  
Subject to like approval by the  
Assistant District Manager, Minerals  
and the Commissioner of Public Lands

DATE 6-22-87

The foregoing are approvals for the ELEVENTH through FIFTEENTH EXPANDED PARTICIPATING AREAS Dakota Formation, in the San Juan 30-5 Unit.



WORKING INTEREST OWNERS

Phillips Petroleum Company  
Attention: Dave S. Smith  
8055 E. Tufts Avenue Parkway  
Denver, CO 80237

Amoco Production Company  
Western Division, Production Manager  
1670 Broadway  
Denver, CO 80202

Texaco Inc.  
Manager, Petroleum Engineering  
P. O. Box 2100  
Denver, CO 80201

Meridian Oil  
Land Department  
P. O. Box 4289  
Farmington, NM 87499

SCHEDULE XII  
ELEVENTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION  
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 3</u>						
SF-078738	<u>T-30-N, R-5-W</u> Sec. 23: W/2 Sec. 26: E/2, NE/4SW/4	840.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	9.151443%
	<u>T-30-N, R-5-W</u> Sec. 26: NW/4		Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  84.000000% 3.500000% <u>100.000000%</u>	12.500000%  84.000000% 3.500000% <u>100.000000%</u>	
<u>TRACT 4</u>						
SF-078739	<u>T-30-N, R-5-W</u> Sec. 21: E/2, SW/4 Sec. 22: E/2	1360.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  84.500000% 3.000000% <u>100.000000%</u>	12.500000%  84.500000% 3.000000% <u>100.000000%</u>	14.816623%
	<u>T-30-N, R-5-W</u> Sec. 22: W/2		Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  85.000000% 2.500000% <u>100.000000%</u>	12.500000%  85.000000% 2.500000% <u>100.000000%</u>	
	<u>T-30-N, R-5-W</u> Sec. 28: W/2NE/4, SE/4		Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  86.500000% 1.000000% <u>100.000000%</u>	12.500000%  86.500000% 1.000000% <u>100.000000%</u>	
<u>TRACT 5</u>						
SF-078740	<u>T-30-N, R-5-W</u> Sec. 20: E/2	320.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	3.486264%

SCHEDULE XII  
ELEVENTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION  
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 6</u>						
SF-078994	<u>T-30-N, R-5-W</u> Sec. 15: SW/4, SW/4NW/4 Sec. 17: SW/4, S/2NW/4 Sec. 18: E/2	760.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	8.279877%
<u>TRACT 7</u>						
SF-078997	<u>T-30-N, R-5-W</u> Sec. 6: S/2SE/4, SE/4SW/4 Sec. 7: N/2, NW/4SW/4, N/2SE/4, SE/4SE/4 Sec. 8: NW/4, N/2SW/4 Sec. 9: All Sec. 10: All Sec. 15: E/2, E/2NW/4, NW/4NW/4	2,560.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	27.890113%
<u>TRACT 11</u>						
SF-080066	<u>T-30-N, R-5-W</u> Sec. 5: All Sec. 6: Lots 8, 9, 10, 11, S/2N/2, N/2S/2, SW/4SW/4	1158.12	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	12.617226%
<u>TRACT 17</u>						
E-347-41	<u>T-30-N, R-5-W</u> Sec. 16: NE/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	1.743132%

## UNIT AREA EXPANSION SCHEDULE

SCHEDULE XII  
ELEVENTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION  
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 17-A</u>						
E-347-40	<u>T-30-N, R-5-W</u> Sec. 16: N/2NW/4	80.00	Royalty Working Interest Texaco ORRI Total	12.500000%  82.750000% 4.750000% <u>100.000000%</u>	12.500000%  82.750000% 4.750000% <u>100.000000%</u>	0.871566%
<u>TRACT 17-D</u>						
E-347-41	<u>T-30-N, R-5-W</u> Sec. 16: S/2NW/4	80.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	0.871566%
<u>TRACT 17-F</u>						
E-347-39	<u>T-30-N, R-5-W</u> Sec. 16: S/2 Sec. 36: Lots 1, 2, 3, 4, W/2E/2	540.76	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	5.891351%
<u>TRACT 18</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 8: E/2	320.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	3.486264%
<u>TRACT 19</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 7: S/2SW/4, NE/4SW/4, SW/4SE/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	1.743132%

SCHEDULE XII  
ELEVENTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION  
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 20</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 17: NE/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	1.743132%
<u>TRACT 21</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 17: SE/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	1.743132%
<u>TRACT 22</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 21: NW/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	1.743132%
<u>TRACT 23-A</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 28: E/2NE/4	80.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	0.871566%
<u>TRACT 24</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 26: S/2SW/4, NW/4SW/4	120.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	1.307349%

SCHEDULE XII  
ELEVENTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION  
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 25</u>						
Fee	<u>T-30-N, R-5-W</u>	156.00	Royalty	12.500000%	12.500000%	1.699554%
	Sec. 8: S/2SW/4		Working Interest			
	Sec. 17: N/2NW/4		Amoco Production Co.	43.750000%	43.750000%	
	(less the 4 acres		Phillips Petroleum Co.	43.750000%	43.750000%	
	in NW/4NW/4)		ORRI	<u>00.000000%</u>	<u>00.000000%</u>	
			Total	<u>100.000000%</u>	<u>100.000000%</u>	
<u>TRACT 25-A</u>						
Fee	<u>T-30-N, R-5-W</u>	4.00	Royalty	12.500000%	12.500000%	0.043578%
	Sec. 17: a tract		Working Interest			
	of land 1200'		Amoco Production Co.	43.750000%	43.750000%	
	long by 450'		Phillips Petroleum Co.	43.750000%	43.750000%	
	wide in NW/4NW/4		ORRI	<u>00.000000%</u>	<u>00.000000%</u>	
			Total	<u>100.000000%</u>	<u>100.000000%</u>	

SCHEDULE XII  
ELEVENTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION  
SAN JUAN 30-5 UNIT AREA

R E C A P I T U L A T I O N

Township 30 North, Range 5 West, N.M.P.M.

Sections 5, 6, 7, 8, 9, 10, 15, 16, 17, 21, 22, 26: All

Sections 18, 20, 28: E/2

Section 23: W/2

Section 36: Lots 1, 2, 3, 4, W/2E/2

Total Number of Acres in Participating Area: 9,178.88

Total Number of Acres Committed in Participating Area: 9,178.88

SCHEDULE XIII  
TWELFTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION  
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 2</u>						
NM-012332	<u>T-30-N, R-5-W</u> Sec. 35: All	640.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  83.000000% 4.500000% <u>100.000000%</u>	12.500000%  83.000000% 4.500000% <u>100.000000%</u>	6.518055%
<u>TRACT 3</u>						
SF-078738	<u>T-30-N, R-5-W</u> Sec. 23: W/2 Sec. 26: E/2, NE/4SW/4	840.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	8.554947%
	<u>T-30-N, R-5-W</u> Sec. 26: NW/4		Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  84.000000% 3.500000% <u>100.000000%</u>	12.500000%  84.000000% 3.500000% <u>100.000000%</u>	
<u>TRACT 4</u>						
SF-078739	<u>T-30-N, R-5-W</u> Sec. 21: E/2, SW/4 Sec. 22: E/2	1360.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  84.500000% 3.000000% <u>100.000000%</u>	12.500000%  84.500000% 3.000000% <u>100.000000%</u>	13.850866%
	<u>T-30-N, R-5-W</u> Sec. 22: W/2		Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  85.000000% 2.500000% <u>100.000000%</u>	12.500000%  85.000000% 2.500000% <u>100.000000%</u>	
	<u>T-30-N, R-5-W</u> Sec. 28: W/2NE/4, SE/4		Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  86.500000% 1.000000% <u>100.000000%</u>	12.500000%  86.500000% 1.000000% <u>100.000000%</u>	



SCHEDULE XIII  
TWELFTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION  
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 5</u>						
SF-078740	<u>T-30-N, R-5-W</u> Sec. 20: E/2	320.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	3.259028%
<u>TRACT 6</u>						
SF-078994	<u>T-30-N, R-5-W</u> Sec. 15: SW/4, SW/4NW/4 Sec. 17: SW/4, S/2NW/4 Sec. 18: E/2	760.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	7.140190%
<u>TRACT 7</u>						
SF-078997	<u>T-30-N, R-5-W</u> Sec. 6: S/2SE/4, SE/4SW/4 Sec. 7: N/2, NW/4SW/4, N/2SE/4, SE/4SE/4 Sec. 8: NW/4, N/2SW/4 Sec. 9: All Sec. 10: All Sec. 15: E/2, E/2NW/4, NW/4NW/4	2,560.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	26.072220%
<u>TRACT 11</u>						
SF-080066	<u>T-30-N, R-5-W</u> Sec. 5: All Sec. 6: Lots 8, 9, 10, 11, S/2N/2, N/2S/2, SW/4SW/4	1158.12	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	11.794828%

## UNIT AREA EXPANSION SCHEDULE

SCHEDULE XIII  
TWELFTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION  
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 17</u>						
E-347-41	<u>T-30-N, R-5-W</u> Sec. 16: NE/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	1.629514%
<u>TRACT 17-A</u>						
E-347-40	<u>T-30-N, R-5-W</u> Sec. 16: N/2NW/4	80.00	Royalty Working Interest Texaco ORRI Total	12.500000%  82.750000% 4.750000% <u>100.000000%</u>	12.500000%  82.750000% 4.750000% <u>100.000000%</u>	0.814757%
<u>TRACT 17-D</u>						
E-347-41	<u>T-30-N, R-5-W</u> Sec. 16: S/2NW/4	80.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	0.814757%
<u>TRACT 17-F</u>						
E-347-39	<u>T-30-N, R-5-W</u> Sec. 16: S/2 Sec. 36: Lots 1, 2, 3, 4, W/2E/2	540.76	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	5.507349%
<u>TRACT 18</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 8: E/2	320.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	3.259028%

Effective November 1, 1983

SCHEDULE XIII  
TWELFTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION  
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 19</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 7: S/2SW/4, NE/4SW/4, SW/4SE/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	1.629514%
<u>TRACT 20</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 17: NE/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	1.629514%
<u>TRACT 21</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 17: SE/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	1.629514%
<u>TRACT 22</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 21: NW/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	1.629514%
<u>TRACT 23-A</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 28: E/2NE/4	80.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	0.814757%

UNIT AREA EXPANSION SCHEDULE

SCHEDULE XIII  
TWELFTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION  
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 24</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 26: S/2SW/4, NW/4SW/4	120.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	1.222135%
<u>TRACT 25</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 8: S/2SW/4 Sec. 17: N/2NW/4 (less the 4 acres in NW/4NW/4)	156.00	Royalty Working Interest Amoco Production Co. Phillips Petroleum Co. ORRI Total	12.500000%  43.750000% 43.750000% 00.000000% <u>100.000000%</u>	12.500000%  43.750000% 43.750000% 00.000000% <u>100.000000%</u>	1.588776%
<u>TRACT 25-A</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 17: a tract of land 1200' long by 450' wide in NW/4NW/4	4.00	Royalty Working Interest Amoco Production Co. Phillips Petroleum Co. ORRI Total	12.500000%  43.750000% 43.750000% 00.000000% <u>100.000000%</u>	12.500000%  43.750000% 43.750000% 00.000000% <u>100.000000%</u>	0.040737%

SCHEDULE XIII  
TWELFTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION  
SAN JUAN 30-5 UNIT AREA

R E C A P I T U L A T I O N

Township 30 North, Range 5 West, N.M.P.M.

Sections 5, 6, 7, 8, 9, 10, 15, 16, 17, 21, 22, 26, 35: All

Sections 18, 20, 28: E/2

Section 23: W/2

Section 36: Lots 1, 2, 3, 4, W/2E/2

Total Number of Acres in Participating Area: 9,818.88

Total Number of Acres Committed in Participating Area: 9,818.88

## UNIT AREA EXPANSION SCHEDULE

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SCHEDULE XIV  
THIRTEENTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION  
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 2</u>						
NM-012332	T-30-N, R-5-W Sec. 35: All	640.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  83.000000% 4.500000% <u>100.000000%</u>	12.500000%  83.000000% 4.500000% <u>100.000000%</u>	6.312334%
<u>TRACT 3</u>						
SF-073738	T-30-N, R-5-W Sec. 23: W/2 Sec. 26: E/2, NE/4SW/4 Sec. 27: NE/4, W/2SE/4, SE/4SE/4	1120.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	11.046584%
	T-30-N, R-5-W Sec. 26: NW/4		Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  84.000000% 3.500000% <u>100.000000%</u>	12.500000%  84.000000% 3.500000% <u>100.000000%</u>	
<u>TRACT 4</u>						
SF-073739	T-30-N, R-5-W Sec. 21: E/2, SW/4 Sec. 22: E/2	1360.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  84.500000% 3.000000% <u>100.000000%</u>	12.500000%  84.500000% 3.000000% <u>100.000000%</u>	13.413710%
	T-30-N, R-5-W Sec. 22: W/2		Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  85.000000% 2.500000% <u>100.000000%</u>	12.500000%  85.000000% 2.500000% <u>100.000000%</u>	
	T-30-N, R-5-W Sec. 28: W/2NE/4, SE/4		Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  86.500000% 1.000000% <u>100.000000%</u>	12.500000%  86.500000% 1.000000% <u>100.000000%</u>	

SCHEDULE XIV  
THIRTEENTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION  
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 5</u>						
SF-078740	<u>T-30-N, R-5-W</u> Sec. 20: E/2	320.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	3.156167%
<u>TRACT 6</u>						
SF-078994	<u>T-30-N, R-5-W</u> Sec. 15: SW/4, SW/4NW/4 Sec. 17: SW/4, S/2NW/4 Sec. 18: E/2	760.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	7.495897%
<u>TRACT 7</u>						
SF-078997	<u>T-30-N, R-5-W</u> Sec. 6: S/2SE/4, SE/4SW/4 Sec. 7: N/2, NW/4SW/4, N/2SE/4, SE/4SE/4 Sec. 8: NW/4, N/2SW/4 Sec. 9: A11 Sec. 10: A11 Sec. 15: E/2, E/2NW/4, NW/4NW/4	2,560.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	25.249337%
<u>TRACT 11</u>						
SF-080065	<u>T-30-N, R-5-W</u> Sec. 5: A11 Sec. 6: Lots 8, 9, 10, 11, S/2N/2, N/2S/2, SW/4SW/4	1158.12	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	11.422563%

## UNIT AREA EXPANSION SCHEDULE

SCHEDULE XIV  
THIRTEENTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION  
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 17</u>						
E-347-41	<u>T-30-N, R-5-W</u> Sec. 16: NE/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000%  87.500000% <u>00.000000%</u> <u>100.000000%</u>	12.500000%  87.500000% <u>00.000000%</u> <u>100.000000%</u>	1.578084%
<u>TRACT 17-A</u>						
E-347-40	<u>T-30-N, R-5-W</u> Sec. 16: N/2NW/4	80.00	Royalty Working Interest Texaco ORRI Total	12.500000%  82.750000% <u>4.750000%</u> <u>100.000000%</u>	12.500000%  82.750000% <u>4.750000%</u> <u>100.000000%</u>	0.789042%
<u>TRACT 17-D</u>						
E-347-41	<u>T-30-N, R-5-W</u> Sec. 16: S/2NW/4	80.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000%  82.500000% <u>5.000000%</u> <u>100.000000%</u>	12.500000%  82.500000% <u>5.000000%</u> <u>100.000000%</u>	0.789042%
<u>TRACT 17-F</u>						
E-347-39	<u>T-30-N, R-5-W</u> Sec. 16: S/2 Sec. 36: Lots 1, 2, 3, 4, W/2E/2	540.76	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  82.500000% <u>5.000000%</u> <u>100.000000%</u>	12.500000%  82.500000% <u>5.000000%</u> <u>100.000000%</u>	5.333528%
<u>TRACT 18</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 8: E/2	320.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000%  87.500000% <u>00.000000%</u> <u>100.000000%</u>	12.500000%  87.500000% <u>00.000000%</u> <u>100.000000%</u>	3.156167%

Effective December 1, 1983



## UNIT AREA EXPANSION SCHEDULE

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0609tSCHEDULE XIV  
THIRTEENTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION  
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 19</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 7: S/2SW/4, NE/4SW/4, SW/4SE/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	1.578084%
<u>TRACT 20</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 17: NE/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	1.578084%
<u>TRACT 21</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 17: SE/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	1.578084%
<u>TRACT 22</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 21: NW/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	1.578084%
<u>TRACT 23-A</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 28: E/2NE/4	80.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	0.789042%

Effective December 1, 1983

UNIT AREA EXPANSION SCHEDULE

SCHEDULE XIV  
THIRTEENTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION  
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 24</u>						
Fee	<u>T-30-N, R-5-W</u>	160.00	Royalty	12.500000%	12.500000%	1.578084%
	Sec. 26:		Working Interest			
	S/2SW/4, NW/4SW/4		Amoco Production Co.	87.500000%	87.500000%	
	Sec. 27: NE/4SE/4		ORRI	<u>00.000000%</u>	<u>00.000000%</u>	
			Total	<u>100.000000%</u>	<u>100.000000%</u>	
<u>TRACT 25</u>						
Fee	<u>T-30-N, R-5-W</u>	156.00	Royalty	12.500000%	12.500000%	1.538631%
	Sec. 8: S/2SW/4		Working Interest			
	Sec. 17: N/2NW/4		Amoco Production Co.	43.750000%	43.750000%	
	(less the 4 acres		Phillips Petroleum Co.	43.750000%	43.750000%	
	in NW/4NW/4)		ORRI	<u>00.000000%</u>	<u>00.000000%</u>	
			Total	<u>100.000000%</u>	<u>100.000000%</u>	
<u>TRACT 25-A</u>						
Fee	<u>T-30-N, R-5-W</u>	4.00	Royalty	12.500000%	12.500000%	0.039452%
	Sec. 17: a tract		Working Interest			
	of land 1200'		Amoco Production Co.	43.750000%	43.750000%	
	long by 450'		Phillips Petroleum Co.	43.750000%	43.750000%	
	wide in NW/4NW/4		ORRI	<u>00.000000%</u>	<u>00.000000%</u>	
			Total	<u>100.000000%</u>	<u>100.000000%</u>	

SCHEDULE XIV  
THIRTEENTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION  
SAN JUAN 30-5 UNIT AREA

R E C A P I T U L A T I O N

Township 30 North, Range 5 West, N.M.P.M.

Sections 5, 6, 7, 8, 9, 10, 15, 16, 17, 21, 22, 26, 35: All

Sections 18, 20, 27, 28: E/2

Section 23: W/2

Section 36: Lots 1, 2, 3, 4, W/2E/2

Total Number of Acres in Participating Area: 10,138.88

Total Number of Acres Committed in Participating Area: 10,138.88

## UNIT AREA EXPANSION SCHEDULE

Page 1 of 6  
0609tSCHEDULE XV  
FOURTEENTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION  
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 2</u>						
NM-012332	T-30-N, R-5-W Sec. 35: All	640.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  83.000000% 4.500000% <u>100.000000%</u>	12.500000%  83.000000% 4.500000% <u>100.000000%</u>	5.766348%
<u>TRACT 3</u>						
SF-073738	T-30-N, R-5-W Sec. 23: W/2 Sec. 26: E/2, NE/4SW/4 Sec. 27: NE/4, W/2SE/4, SE/4SE/4	1120.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	10.091109%
	T-30-N, R-5-W Sec. 26: NW/4		Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  84.000000% 3.500000% <u>100.000000%</u>	12.500000%  84.000000% 3.500000% <u>100.000000%</u>	
<u>TRACT 4</u>						
SF-073739	T-30-N, R-5-W Sec. 21: E/2, SW/4 Sec. 22: E/2	1360.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  84.500000% 3.000000% <u>100.000000%</u>	12.500000%  84.500000% 3.000000% <u>100.000000%</u>	12.253489%
	T-30-N, R-5-W Sec. 22: W/2		Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  85.000000% 2.500000% <u>100.000000%</u>	12.500000%  85.000000% 2.500000% <u>100.000000%</u>	
	T-30-N, R-5-W Sec. 28: W/2NE/4, SE/4		Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  86.500000% 1.000000% <u>100.000000%</u>	12.500000%  86.500000% 1.000000% <u>100.000000%</u>	

Effective February 1, 1984

SCHEDULE XV  
FOURTEENTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION  
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 5</u>						
SF-078740	T-30-N, R-5-W	960.00	Royalty	12.500000%	12.500000%	8.649521%
	Sec. 19: E/2		Working Interest			
	Sec. 20: E/2		Phillips Petroleum Co.	82.500000%	82.500000%	
	Sec. 29: N/2NW,		ORRI	5.000000%	5.000000%	
	SW/4NW/4		Total	<u>100.000000%</u>	<u>100.000000%</u>	
	<u>T-30-N, R-5-W</u>		Royalty	12.500000%	12.500000%	
	Sec. 29: NE/4,		Working Interest			
	SE/4NW/4		Phillips Petroleum Co.	83.000000%	83.000000%	
			ORRI	4.500000%	4.500000%	
			Total	<u>100.000000%</u>	<u>100.000000%</u>	
<u>TRACT 6</u>						
SF-078994	T-30-N, R-5-W	1,080.00	Royalty	12.500000%	12.500000%	9.730712%
	Sec. 15: SW/4,		Working Interest			
	SW/4NW/4		Phillips Petroleum Co.	82.500000%	82.500000%	
	Sec. 17: SW/4,		ORRI	5.000000%	5.000000%	
	S/2NW/4		Total	<u>100.000000%</u>	<u>100.000000%</u>	
	Sec. 18: All					
<u>TRACT 7</u>						
SF-078997	T-30-N, R-5-W	2,560.00	Royalty	12.500000%	12.500000%	23.065390%
	Sec. 6: S/2SE/4,		Working Interest			
	SE/4SW/4		Phillips Petroleum Co.	82.500000%	82.500000%	
	Sec. 7: N/2,		ORRI	5.000000%	5.000000%	
	NW/4SW/4, N/2SE/4,		Total	<u>100.000000%</u>	<u>100.000000%</u>	<u>100.000000%</u>
	SE/4SE/4					
	Sec. 8: NW/4,					
	N/2SW/4					
	Sec. 9: All					
	Sec. 10: All					
	Sec. 15: E/2,					
	E/2NW/4, NW/4NW/4					

## UNIT AREA EXPANSION SCHEDULE

SCHEDULE XV  
FOURTEENTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION  
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 11</u>						
SF-080066	T-30-N, R-5-W Sec. 5: All Sec. 6: Lots 8, 9, 10, 11, S/2N/2, N/2S/2, SW/4SW/4	1158.12	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	10.434566%
<u>TRACT 17</u>						
E-347-41	T-30-N, R-5-W Sec. 16: NE/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	1.441587%
<u>TRACT 17-A</u>						
E-347-40	T-30-N, R-5-W Sec. 16: N/2NW/4	80.00	Royalty Working Interest Texaco ORRI Total	12.500000%  82.750000% 4.750000% <u>100.000000%</u>	12.500000%  82.750000% 4.750000% <u>100.000000%</u>	0.720793%
<u>TRACT 17-D</u>						
E-347-41	T-30-N, R-5-W Sec. 16: S/2NW/4	80.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	0.720793%
<u>TRACT 17-F</u>						
E-347-39	T-30-N, R-5-W Sec. 16: S/2 Sec. 36: Lots 1, 2, 3, 4, W/2E/2	540.76	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	4.872203%

UNIT AREA EXPANSION SCHEDULE

SCHEDULE XV  
FOURTEENTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION  
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 18</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 8: E/2	320.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	2.883174%
<u>TRACT 19</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 7: S/2SW/4, NE/4SW/4, SW/4SE/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	1.441587%
<u>TRACT 20</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 17: NE/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	1.441587%
<u>TRACT 21</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 17: SE/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	1.441587%
<u>TRACT 22</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 21: NW/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	1.441587%

Effective February 1, 1984

UNIT AREA EXPANSION SCHEDULE

SCHEDULE XV  
FOURTEENTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION  
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 23-A</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 28: E/2NE/4	80.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000%  87.500000% <u>00.000000%</u> <u>100.000000%</u>	12.500000%  87.500000% <u>00.000000%</u> <u>100.000000%</u>	0.720793%
<u>TRACT 24</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 26: S/2SW/4, NW/4SW/4 Sec. 27: NE/4SE/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000%  87.500000% <u>00.000000%</u> <u>100.000000%</u>	12.500000%  87.500000% <u>00.000000%</u> <u>100.000000%</u>	1.441587%
<u>TRACT 25</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 8: S/2SW/4 Sec. 17: N/2NW/4 (less the 4 acres in NW/4NW/4)	156.00	Royalty Working Interest Amoco Production Co. Phillips Petroleum Co. ORRI Total	12.500000%  43.750000% 43.750000% <u>00.000000%</u> <u>100.000000%</u>	12.500000%  43.750000% 43.750000% <u>00.000000%</u> <u>100.000000%</u>	1.405547%
<u>TRACT 25-A</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 17: a tract of land 1200' long by 450' wide in NW/4NW/4	4.00	Royalty Working Interest Amoco Production Co. Phillips Petroleum Co. ORRI Total	12.500000%  43.750000% 43.750000% <u>00.000000%</u> <u>100.000000%</u>	12.500000%  43.750000% 43.750000% <u>00.000000%</u> <u>100.000000%</u>	0.036040%



SCHEDULE XV  
FOURTEENTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION  
SAN JUAN 30-5 UNIT AREA

R E C A P I T U L A T I O N

Township 30 North, Range 5 West, N.M.P.M.

Sections 5, 6, 7, 8, 9, 10, 15, 16, 17, 18, 21, 22, 26, 35: All

Sections 19, 20, 27, 28: E/2

Section 23: W/2

Section 29: N/2

Section 36: Lots 1, 2, 3, 4, W/2E/2

Total Number of Acres in Participating Area: 11,098.88

Total Number of Acres Committed in Participating Area: 11,098.88

SCHEDULE XVI  
FIFTEENTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION  
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 2</u>						
NM-012332	<u>T-30-N, R-5-W</u> Sec. 35: All	640.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  83.000000% 4.500000% <u>100.000000%</u>	12.500000%  83.000000% 4.500000% <u>100.000000%</u>	5.655389%
<u>TRACT 3</u>						
SF-078738	<u>T-30-N, R-5-W</u> Sec. 23: W/2 Sec. 26: E/2, NE/4SW/4 Sec. 27: NE/4, W/2SE/4, SE/4SE/4	1120.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	9.896931%
	<u>T-30-N, R-5-W</u> Sec. 26: NW/4		Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  84.000000% 3.500000% <u>100.000000%</u>	12.500000%  84.000000% 3.500000% <u>100.000000%</u>	
<u>TRACT 4</u>						
SF-078739	<u>T-30-N, R-5-W</u> Sec. 21: E/2, SW/4 Sec. 22: E/2	1360.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  84.500000% 3.000000% <u>100.000000%</u>	12.500000%  84.500000% 3.000000% <u>100.000000%</u>	12.017701%
	<u>T-30-N, R-5-W</u> Sec. 22: W/2		Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  85.000000% 2.500000% <u>100.000000%</u>	12.500000%  85.000000% 2.500000% <u>100.000000%</u>	
	<u>T-30-N, R-5-W</u> Sec. 28: W/2NE/4, SE/4		Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  86.500000% 1.000000% <u>100.000000%</u>	12.500000%  86.500000% 1.000000% <u>100.000000%</u>	

SCHEDULE XVI  
FIFTEENTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION  
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 5</u>						
SF-078740	<u>T-30-N, R-5-W</u>	960.00	Royalty	12.500000%	12.500000%	8.483083%
	Sec. 19: E/2		Working Interest			
	Sec. 20: E/2		Phillips Petroleum Co.	82.500000%	82.500000%	
	Sec. 29:		ORRI	<u>5.000000%</u>	<u>5.000000%</u>	
	N/2NW/4, SW/4NW/4		Total	<u>100.000000%</u>	<u>100.000000%</u>	
	<u>T-30-N, R-5-W</u>		Royalty	12.500000%	12.500000%	
	Sec. 29: NE/4,		Working Interest			
	SE/4NW/4		Phillips Petroleum Co.	83.000000%	83.000000%	
			ORRI	<u>4.500000%</u>	<u>4.500000%</u>	
			Total	<u>100.000000%</u>	<u>100.000000%</u>	
<u>TRACT 6</u>						
SF-078994	<u>T-30-N, R-5-W</u>	1,080.00	Royalty	12.500000%	12.500000%	9.543469%
	Sec. 15: SW/4,		Working Interest			
	SW/4NW/4		Phillips Petroleum Co.	82.500000%	82.500000%	
	Sec. 17: SW/4,		ORRI	<u>5.000000%</u>	<u>5.000000%</u>	
	S/2NW/4		Total	<u>100.000000%</u>	<u>100.000000%</u>	
	Sec. 18: All					
<u>TRACT 7</u>						
SF-078997	<u>T-30-N, R-5-W</u>	2,560.00	Royalty	12.500000%	12.500000%	22.621556%
	Sec. 6: S/2SE/4,		Working Interest			
	SE/4SW/4		Phillips Petroleum Co.	82.500000%	82.500000%	
	Sec. 7: N/2,		ORRI	<u>5.000000%</u>	<u>5.000000%</u>	
	NW/4SW/4, N/2SE/4,		Total	<u>100.000000%</u>	<u>100.000000%</u>	
	SE/4SE/4					
	Sec. 8: NW/4,					
	N/2SW/4					
	Sec. 9: All					
	Sec. 10: All					
	Sec. 15: E/2,					
	E/2NW/4, NW/4NW/4					
<u>TRACT 11</u>						
SF-080066	<u>T-30-N, R-5-W</u>	1158.12	Royalty	12.500000%	12.500000%	10.233780%
	Sec. 5: All		Working Interest			
	Sec. 6: Lots 8,		Phillips Petroleum Co.	82.500000%	82.500000%	
	9, 10, 11,		ORRI	<u>5.000000%</u>	<u>5.000000%</u>	
	S/2N/2, N/2S/2,		Total	<u>100.000000%</u>	<u>100.000000%</u>	
	SW/4SW/4					

## UNIT AREA EXPANSION SCHEDULE

SCHEDULE XVI  
FIFTEENTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION  
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 15</u>						
SF-080538	<u>T-30-N, R-5-W</u> Sec. 13: Lots 1,2,3,4, W/2E/2	217.76	Royalty Working Interest El Paso Natural Gas ORRI Total	12.500000%  83.125000% 4.375000% <u>100.000000%</u>	12.500000%  83.125000% 4.375000% <u>100.000000%</u>	1.924246%
<u>TRACT 17</u>						
E-347-41	<u>T-30-N, R-5-W</u> Sec. 16: NE/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	1.413347%
<u>TRACT 17-A</u>						
E-347-40	<u>T-30-N, R-5-W</u> Sec. 16: N/2NW/4	80.00	Royalty Working Interest Texaco ORRI Total	12.500000%  82.750000% 4.750000% <u>100.000000%</u>	12.500000%  82.750000% 4.750000% <u>100.000000%</u>	.706924%
<u>TRACT 17-D</u>						
E-347-41	<u>T-30-N, R-5-W</u> Sec. 16: S/2NW/4	80.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	0.706924%
<u>TRACT 17-F</u>						
E-347-39	<u>T-30-N, R-5-W</u> Sec. 16: S/2 Sec. 36: Lots 1, 2, 3, 4, W/2E/2	540.76	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	12.500000%  82.500000% 5.000000% <u>100.000000%</u>	4.778450%

Effective July 1, 1984

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## UNIT AREA EXPANSION SCHEDULE

SCHEDULE XVI  
FIFTEENTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION  
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 18</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 8: E/2	320.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	2.821694%
<u>TRACT 19</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 7: S/2SW/4, NE/4SW/4, SW/4SE/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	1.413347%
<u>TRACT 20</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 17: NE/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	1.413347%
<u>TRACT 21</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 17: SE/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	1.413347%
<u>TRACT 22</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 21: NW/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	1.413347%

Effective July 1, 1984

UNIT AREA EXPANSION SCHEDULE

SCHEDULE XVI  
FIFTEENTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION  
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 23-A</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 28: E/2NE/4	80.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	0.706924%
<u>TRACT 24</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 26: S/2SW/4, NW/4SW/4 Sec. 27: NE/4SE/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	12.500000%  87.500000% 00.000000% <u>100.000000%</u>	1.413847%
<u>TRACT 25</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 8: S/2SW/4 Sec. 17: N/2NW/4 (less the 4 acres in NW/4NW/4)	156.00	Royalty Working Interest Amoco Production Co. Phillips Petroleum Co. ORRI Total	12.500000%  43.750000% 43.750000% 00.000000% <u>100.000000%</u>	12.500000%  43.750000% 43.750000% 00.000000% <u>100.000000%</u>	1.378501%
<u>TRACT 25-A</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 17: a tract of land 1200' long by 450' wide in NW/4NW/4	4.00	Royalty Working Interest Amoco Production Co. Phillips Petroleum Co. ORRI Total	12.500000%  43.750000% 43.750000% 00.000000% <u>100.000000%</u>	12.500000%  43.750000% 43.750000% 00.000000% <u>100.000000%</u>	0.035346%

SCHEDULE XVI  
FIFTEENTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION  
SAN JUAN 30-5 UNIT AREA

R E C A P I T U L A T I O N

Township 30 North, Range 5 West, N.M.P.M.

Sections 5, 6, 7, 8, 9, 10, 15, 16, 17, 18, 21, 22, 26, 35: All

Sections 13, 19, 20, 27, 28: E/2

Section 23: W/2

Section 29: N/2

Section 36: Lots 1, 2, 3, 4, W/2E/2

Total Number of Acres in Participating Area: 11,316.64

Total Number of Acres Committed in Participating Area: 11,316.64

EXHIBIT "B"

SAN JUAN 30-5 UNIT  
RIO ARriba COUNTY, NEW MEXICO

GEOLOGIC REPORT  
DAKOTA PRODUCING INTERVAL

ELEVENTH THROUGH FIFTEENTH EXPANSIONS  
OF THE DAKOTA PARTICIPATING AREA

Prepared by Carolyn Firth

NORTHWEST PIPELINE CORPORATION

APPROVED BY: 

Kenneth J. Stracke  
Director  
Production Division



## EXHIBIT "B"

### SAN JUAN 30-5 UNIT RIO ARriba COUNTY, NEW MEXICO

#### GEOLOGIC REPORT DAKOTA PRODUCING INTERVAL

#### ELEVENTH THROUGH FIFTEENTH EXPANSIONS OF THE DAKOTA PARTICIPATING AREA

##### GENERAL INFORMATION

The San Juan 30-5 Unit is located near the east edge of the productive area of the San Juan Basin. The unit includes 20,092.24 acres in Township 30 North, Range 5 West. All or parts of sections 1, 2, 3, 4, and 12 (2,329.56 acres) have been eliminated from the unit.

Within the unit area, the "Dakota Producing Interval" has been tested in 47 wells, resulting in 7 noncommercial wells, 2 plugged and abandoned wells, 36 commercial wells and 2 wells awaiting pipeline connection. Seventeen of the 47 wells participate in the Dakota Participating Area, and 2 wells (Schalk 57-1 and 57-1E) participate in the Dakota "A" Participating Area.

The "Dakota Producing Interval" consists of the Graneros Shale, the Dakota Sandstone, and the Upper Morrison Formation. This interval has been defined and the lithology and stratigraphy have been discussed in geologic reports for adjacent units. Within the San Juan 30-5 Unit, the productive sands of the "Dakota Producing Interval" are restricted to the upper (marine) and middle (fluvial) Dakota Sands, the upper sand being the major gas producer.

Included in this report as Exhibit "C" are three maps (Figures 1, 2 and 3). Figure 1 is a Dakota structure map contoured on the top of the Graneros Shale using mean sea level as the datum plane and a contour interval of 20 feet. The major structural features include an anticlinal nose plunging northward through the east half of the unit, which is bordered on the west by a north-to-northeast plunging syncline. Regional strike is approximately N65°W, and regional dip is approximately 50 feet per mile (0.5°) to the northeast.

Figure 2 is an isopachous map of the net productive upper Dakota Sandstone as determined from radioactive and electric logs of wells drilled within the unit and the surrounding area. Sand bodies generally trend northwest-southeast. Net sand thickness decreases to zero in the southern part of the unit.

Figure 3 is a map showing the net thickness (by well) of the perforated sands within the middle Dakota interval. No thickness numbers are indicated for wells that were completed only in the upper sand.

Exhibit "D" (Table 1) is a tabulation of the Dakota gas production for all wells within the unit boundary. Monthly gas production for the 12-month period ending June 30, 1986 is shown, as well as cumulative production. The San Juan 30-5 Unit has produced 8,890,873 Mcf of gas from the Dakota Producing Interval as of July 1, 1986.

PROPOSED ELEVENTH EXPANSION OF THE DAKOTA PARTICIPATING AREA

Effective Date: October 1, 1983  
Proposed Acreage: Township 30 North, Range 5 West, N.M.P.M.  
Section 26: S/2 (320 acres)  
Section 28: E/2 (320 acres)  
Total Acres: 640

The Eleventh Expansion of the Dakota Participating Area is based on initial test results, log interpretation, and production histories of the Northwest Pipeline Corporation San Juan 30-5 Unit wells #92 and #95. From this data, it is inferred that the proposed acreage is capable of producing unitized substances in commercial quantities from the Dakota Producing Interval. The wells are described as follows:

The San Juan 30-5 Unit #92 well is located 1820 feet from the South line and 1710 feet from the West line, Section 26, Township 30 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. This well was spudded on August 26, 1983. The Dakota formation was completed on September 11, 1983. The Dakota formation was perforated with 25 holes at the following depths:

7848', 7849', 7850', 7851', 7852', 7853', 7854', 7855',  
7856', 7857', 7858', 7859', 7860', 7861', 7862', 7863',  
7864', 7887', 7888', 7889', 7890', 7891', 7892', 7893',  
7894'.

The formation was fractured with 127,680 gallons of pad water carrying 60,000 pounds of 40/60 sand and 10,000 pounds of 20/40 sand. The well was tested on October 7, 1983 using a positive choke in a three hour test. A flow rate of 1540 MCFD was measured with a calculated AOF of 1581 MCFD. The ISIP was measured at 2770 psig.

On the basis of the above well, the S/2 of Section 26 (320 acres) is recommended for inclusion in the Eleventh Expansion of the Dakota Participating Area.

The San Juan 30-5 Unit #95 well is located 1600 feet from the North line and 990 feet from the East line, Section 28, Township 30 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. This well was spudded on September 3, 1983 and completed in the Dakota formation on September 17, 1983. The plug back depth is 7900'. The Dakota formation was perforated with a total of 23 holes at the following depths:

7813', 7814', 7815', 7816', 7817', 7818', 7819', 7820',  
7821', 7822', 7823', 7824', 7825', 7826', 7827', 7828',  
7829', 7830', 7857', 7858', 7859', 7860', and 7861'.

These perforations were broken down with 1000 gallons of 15% hydrochloric acid. The Dakota formation was sand water fractured using a 10,000 gallon pad of slick water carrying 60,000 lbs. of 40/60 sand and 10,000 lbs. of 20/40 sand. Total fluid in the formation was reported as 3126 bbls. On October 24, 1983 this well was tested for three hours using a positive choke. During the test, 356 Mcf of gas were vented, which resulted in a calculated AOF of 2417 Mcfd. Both SICP and SITP were 2705 psig, while flowing tubing and casing pressures were 175 and 602 psig, respectively. A very light mist was produced throughout the test.

On the basis of this well, the E/2 of Section 28 (320 acres) is recommended for inclusion in the Eleventh Expansion of the Dakota Participating Area.

#### PROPOSED TWELFTH EXPANSION OF THE DAKOTA PARTICIPATING AREA

Effective Date: November 1, 1983  
Proposed Acreage: Township 30 North, Range 5 West, N.M.P.M.  
Section 35: (640 acres)  
Total Acres: 640

The Twelfth Expansion of the Dakota Participating Area is based on initial test results, log interpretation, and production histories of the Northwest Pipeline Corporation San Juan 30-5 Unit wells #86 and #101. From this data, it is inferred that the proposed acreage is capable of producing unitized substances in commercial quantities from the Dakota Producing Interval. The wells are described as follows:

The San Juan 30-5 Unit #86 well is located 1060 feet from the South line and 850 feet from the West line of Section 35, Township 30 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. This well was spudded on October 3, 1983 and the Dakota formation was completed on October 29, 1983. The plug back depth is 8270'. The well was perforated with 2 shots per foot over the following intervals:

8210' - 8220' and 8246' - 8250'

A total of 30 holes were shot.

The perforations were treated and the formation was sand water fractured using 2348 bbls of treated fluid carrying 40,000 pounds of 40/60 sand and 10,000 pounds of 20/40 sand. Radioactive tracer was added with the 20/40 sand at a rate of 1/3 millicurie per 1000 pounds of sand. The Dakota formation was tested on November 29, 1983 using a positive choke. During this three hour test, the well made 341 Mcf of gas with a

flowing tubing pressure of 163 psig. The SITP and the SICP were 2700 psig. After 45 minutes of the test, the well began to produce a light mist and continued to produce this mist throughout the remainder of the test. The calculated AOF was 2324 Mcfd.

The San Juan 30-5 Unit #101 well is located 820 feet from the North line and 1050 feet from the East line of Section 35, Township 30 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. This well was spudded on September 22, 1983 and completed in the Dakota formation on October 9, 1983. The plug back depth is 8290'. The Dakota formation was perforated with 24 holes at the following depths:

8215', 8216', 8217', 8218', 8219', 8220', 8221', 8222',  
8223', 8224', 8225', 8226', 8227', 8228', 8229', 8230',  
8253', 8254', 8255', 8256', 8257', 8258', 8259', and 8260'.

These perforations were sand water fractured using 3136 bbls of treated water carrying 60,000 pounds of 40/60 sand and 10,000 pounds of 20/40 sand. Along with the 20/40 sand, 1/3 millicurie of radioactive tracer was added with every 1000 pounds of sand. The Dakota formation was tested on November 1, 1983 using a positive choke. During this three hour test, the well made 220 Mcf of gas with a flowing tubing pressure of 105 psig. A light mist was produced throughout the test. Both the SITP and the SICP were 2890 psig. The calculated AOF was 1494 Mcfd.

On the basis of these wells, Section 35 (640 acres) is recommended as the Twelfth Expansion of the Dakota Participating Area.

#### PROPOSED THIRTEENTH EXPANSION OF THE DAKOTA PARTICIPATING AREA

Effective Date: December 1, 1983  
Proposed Acreage: Township 30 North, Range 5 West, N.M.P.M.  
Section 27: E/2 (320 acres)  
Total Acres: 320

The Thirteenth Expansion of the Dakota Participating Area is based on initial test results, log interpretation, and the production history of the Northwest Pipeline corporation San Juan 30-5 Unit well #94. From this data it is inferred that the proposed acreage is capable of producing unitized substances in commercial quantities from the Dakota Producing Interval. The well is described as follows:

The San Juan 30-5 Unit #94 well is located 835 feet from the North line and 1530 feet from the East line of Section 27, Township 30 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. This well was spudded on October 23, 1983 and completed in the Dakota formation on November 17, 1983. The plug back depth is 8120'. The Dakota formation was perforated with a total of 23 holes at the following depths:

8021', 8022', 8023', 8024', 8025', 8026', 8027', 8028',  
8029', 8030', 8031', 8032', 8033', 8034', 8035', 8036',  
8037', 8038', 8039', 8040', 8064', 8065', and 8066'.

These perforations were broken down with 1000 gallons of 15% hydrochloric acid. The Dakota formation was sand water fractured using a 10,000 gallon pad of slick water carrying 60,000 lbs of 40/60 sand and 10,000 lbs of 20/40 sand. Total fluid in the formation was reported as 2513 bbls. On December 14, 1983 this well was tested for three hours using a positive choke. During the test, 473 Mcf of gas were vented, which resulted in a calculated AOF of 3520 Mcfd. Both SICP and SITP were 2560 psig, while flowing tubing and casing pressures were 238 and 891 psig, respectively. A light mist was produced throughout the test.

On the basis of this well, the E/2 of Section 27 (320 acres) is recommended as the Thirteenth Expansion of the Dakota Participating Area.

#### PROPOSED FOURTEENTH EXPANSION OF THE DAKOTA PARTICIPATING AREA

Effective Date: February 1, 1984  
Proposed Acreage: Township 30 North, Range 5 West, N.M.P.M.  
Section 18: W/2 (320 acres)  
Section 19: E/2 (320 acres)  
Section 29: N/2 (320 acres)  
Total Acres: 960

The Fourteenth Expansion of the Dakota Participating Area is based on initial test results, log interpretation, and the production histories of the Northwest Pipeline Corporation San Juan 30-5 Unit wells #88, #89, and #97. From this data it is inferred that the proposed acreage is capable of producing unitized substances in commercial quantities from the Dakota Producing Interval. The wells are described as follows:

The San Juan 30-5 Unit #88 well is located 1750 feet from the South line and 1120 feet from the West line of Section 18, Township 30 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. The well was spudded on December 30, 1983 and the Dakota formation was completed on January 21, 1984. The plug back depth is 7820'. The Dakota formation was perforated with 20 holes at the following depths:

7699', 7700', 7701', 7702', 7703', 7704', 7705', 7706', 7707', 7708', 7709', 7710', 7711', 7712', 7713', 7714', 7715', 7716', 7717', and 7718'.

The formation was fractured with 1965 bbls of pad water carrying 50,000 pounds of 40/60 sand and 6620 pounds of 20/40 sand. On February 6, 1984 the well was tested using a positive choke. During this three hour test the well produced at a rate of 2176 Mcfd, with a light spray of water. Both the SITP and the SICP were 2710 psig and the flowing tubing pressure was 161 psig. The calculated AOF was 2241 Mcfd.

On the basis of the above well, the W/2 of Section 18 (320 acres) is recommended for inclusion in the Fourteenth Expansion of the Dakota Participating Area.

The San Juan 30-5 Unit #89 well is located 1640 feet from the North line and 970 feet from the East line of Section 19, Township 30 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. The well was spudded on January 9, 1984 and on January 26, 1984 the Dakota formation was completed. The Dakota formation was perforated with 27 holes at the following depths:

7785', 7786', 7787', 7788', 7789', 7790', 7791', 7792', 7793', 7794', 7795', 7796', 7797', 7798', 7799', 7800', 7801', 7802', 7803', 7804', 7805', 7806', 7807', 7808', 7809', 7829', and 7830'.

The formation was fractured with 2349 bbls of treated fluid carrying 50,000 pounds of 40/60 sand and 10,000 pounds of 20/40 sand. On February 14, 1984 the well was tested for three hours using a positive choke. During this test the well produced at a rate of 3034 Mcfd, with a heavy mist of water. Both the SITP and the SICP were 2637 psig and the flowing tubing pressure during the test was 228 psig. The calculated AOF was 3275 Mcfd.

On the basis of the above well, the E/2 of Section 19 (320 acres) is recommended for inclusion in the Fourteenth Expansion of the Dakota Participating Area.

The San Juan 30-5 Unit #97 well is located 1580 feet from the North line and 810 feet from the East line of Section 29, Township 30 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. This well was spudded on January 26, 1984 and completed in the Dakota formation on February 7, 1984. The plug back depth is 8300'. The Dakota formation was perforated with a total of 19 holes at the following depths:

8176', 8177', 8178', 8179', 8180', 8181', 8182', 8183', 8184',  
8185', 8186', 8187', 8188', 8189', 8190', 8211', 8213', and  
8214'.

These perforations were broken down with 1000 gallons of 15% hydrochloric acid. The Dakota formation was sand water fractured using a 10,000 gallon pad of slick water carrying 50,000 lbs of 40/60 sand and 10,000 lbs of 20/40 sand. Total fluid in the formation was reported as 2170 bbls. On February 27, 1984 this well was tested for three hours using a positive choke. During the test, 194 Mcf of gas were vented, which resulted in a calculated AOF of 1242 Mcfd. Both SICP and SITP were 2645 psig, while flowing tubing and casing pressures were 85 and 348 psig, respectively. A light mist was produced throughout the test.

On the basis of the above well, the N/2 of Section 29 (320 acres) is recommended for inclusion in the Fourteenth Expansion of the Dakota Participating Area.

#### PROPOSED FIFTEENTH EXPANSION OF THE DAKOTA PARTICIPATING AREA

Effective Date: July 1, 1984  
Proposed Acreage: Township 30 North, Range 5 West, N.M.P.M.  
Section 13: E/2 (217.76 acres)  
Total Acres: 217.76

The Fifteenth Expansion of the Dakota Participating Area is based on initial test results, log interpretation, and the production history of the Northwest Pipeline Corporation San Juan 30-5 Unit well #104. From this data it is inferred that the proposed acreage is capable of producing unitized substances in commercial quantities from the Dakota Producing Interval. The well is described as follows:

The San Juan 30-5 Unit #104 well is located 1630 feet from the North line and 1000 feet from the East line of Section 13, Township 30 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. This well was spudded on October 26, 1983 and completed in the Dakota formation on January 30, 1984. The Dakota formation was perforated with a total of 10 holes at the following depths:

8296', 8303', 8310', 8336', 8343', 8350', 8365', 8376', 8383',  
and 8390'.

The formation was sand water fractured using 98,000 lbs of 20/40 sand and 21,000 lbs of 10/20 sand with 90,359 gallons of treated water. On July 20, 1984 this well was tested for three hours using a positive choke. During the test, the well produced at

San Juan 30-5 Dakota  
August 1986  
Page 3

an average rate of 1035 Mcfd with a tubing pressure of 71 psig and a casing pressure of 891 psig. SICP and SITP were 2695 and 2160 psig, respectively. The resultant AOF was 1131 Mcfd. A heavy mist was produced throughout the test.

On September 19, 1985 a cement retainer was set at 8358' to plug off the bottom perforated interval. The lower perforations were making large volumes of water.

On the basis of this well, the E/2 of Section 13 (217.76 acres) is recommended as the Fifteenth Expansion of the Dakota Participating Area.



## EXHIBIT "D"

TABLE NO. 1  
SAN JUAN 30-5 UNIT: DAKOTA GAS PRODUCTION  
RJO ARRIBA COUNTY, NEW MEXICO

GAS VOLUMES IN MCF @ 14.73 PSIA &amp; 60 DEG. F

UNIT WELL NO.	LOCATION	I.D. DATE	JUL 85	AUG 85	SEP 85	OCT 85	NOV 85	DEC 85	JAN 86	FEB 86	MAR 86	APR 86	MAY 86	JUN 86	CUMULATIVE PRODUCTION TO 7/1/86
79	5B 30N 5W	4/82	0	0	0	0	6396	6089	4518	3194	901	0	5605	4258	171830
87	5M 30N 5W	11/83	0	0	0	0	0	0	481	19644	1899	0	11646	6852	173426
80	6A 30N 5W	9/83	0	0	0	0	0	0	577	5799	0	0	5952	0	118776
50	6M 30N 5W	7/81	0	0	0	0	5748	6421	4982	4124	1396	0	5784	5017	198591
39	7G 30N 5W	7/77	0	0	0	0	6083	3839	3193	2416	918	0	3737	2648	232504
78	7L 30N 5W	10/83	0	0	0	0	8708	8779	6174	4353	1743	0	7882	4544	149447
37	8K 30N 5W	2/74	0	17	0	0	10250	6657	4087	2226	1947	1800	1412	1780	676041
70	9A 30N 5W	8/81	0	0	0	0	7504	7313	5914	4462	1240	0	7305	5344	228737
49	9M 30N 5W	9/81	0	0	0	0	4388	2854	4367	2536	2980	1913	3220	2926	137441
73	10B 30N 5W	9/81	4350	0	0	0	10111	7547	6951	4358	1512	0	10328	5930	252820
72	10M 30N 5W	12/81	0	0	0	27986	21080	17997	16448	12245	3622	0	28977	17438	567440
57-1F	12A 30N 5W	11/81	0	0	0	995	13316	8147	7105	5840	6094	5492	942	5744	249116
57-1	12C 30N 5W	10/74	0	0	0	1144	8801	6247	5497	4179	3905	4650	716	4676	670420
104	13H 30N 5W	10/84	8875	50	4	11099	4395	0	0	8464	3409	0	0	0	17828
76	15A 30N 5W	10/83	0	0	0	0	0	0	0	0	0	0	21744	16108	218987
52	15N 30N 5W	9/81	0	0	0	9544	6142	5871	5538	4088	276	0	1675	0	247536
53	161 30N 5W	6/81	398	0	0	20896	12823	10815	9985	8339	591	0	0	0	392872
47	171 30N 5W	7/77	0	0	0	498	8573	6845	5954	4671	1275	0	6915	6485	448218
38	18G 30N 5W	6/81	0	0	0	774	11464	7275	5696	4794	1439	0	5723	6062	250667
88	18L 30N 5W	10/84	4799	0	0	877	6673	6373	7291	5477	5269	5186	6499	6194	126937
89	19H 30N 5W	7/84	855	0	0	0	0	0	0	2254	15823	0	5873	0	115830
48	20B 30N 5W	6/81	0	0	0	27565	17939	15569	13992	9461	425	0	0	0	570604
27*	21B 30N 5W	5/60	479	1117	762	283	46	1160	1008	536	920	505	602	0	291734
51	21B 30N 5W	6/81	0	0	0	21459	14286	11981	12538	8187	566	0	0	0	417240
75	21L 30N 5W	4/84	0	0	0	613	2901	0	0	4447	18591	0	5953	0	143338
90	22H 30N 5W	5/84	0	0	0	0	0	0	0	12971	1609	0	0	0	95395
71	22M 30N 5W	10/81	0	0	0	0	1625	3970	4138	2343	792	570	3019	2727	142699
83	231 30N 5W	4/82	0	0	0	0	4920	7381	4426	2453	621	0	5578	3957	193653
82*	25D 30N 5W	4/82	0	20	0	886	2753	3112	2575	1484	454	0	3267	1941	82750
91*	25L 30N 5W	8/84	928	183	0	1675	1464	885	1343	802	1050	1030	667	828	25817
93	26A 30N 5W	11/83	0	0	0	0	0	0	2531	3147	0	0	4823	0	90902
92	26K 30N 5W	3/84	0	0	0	0	0	0	2147	6991	7110	0	2118	0	64157
94	27B 30N 5W	4/84	0	0	0	817	13201	7039	5933	4508	276	0	8934	5359	128433
81*	27L 30N 5W	4/82	0	3347	1110	0	114	3793	2926	812	248	0	11055	4756	111382
95	28H 30N 5W	4/84	0	2804	1434	1126	0	1999	4262	170	0	0	11055	4756	94747
96*	28L 30N 5W	7/84	265	0	0	0	3139	5768	4737	3593	2215	0	4081	3852	67447
97	29H 30N 5W	8/84	4383	4199	945	0	5314	4931	4004	3306	2230	0	4238	2993	73975
100*	34A 30N 5W	5/85	0	0	0	0	0	462	0	2951	3618	0	0	0	26791
102	34K 30N 5W	12/85	0	0	0	0	0	0	0	0	0	0	0	0	462
101	35A 30N 5W	5/84	0	0	0	13219	10664	9151	8015	5179	10876	0	2211	0	119199
86	35M 30N 5W	10/84	0	0	0	1815	0	0	0	2279	3354	1005	7705	7804	130553
77	36G 30N 5W	6/82	0	0	0	0	0	0	0	26105	20542	0	0	0	312888
85*	36M 30N 5W	5/84	0	0	0	0	0	0	0	0	0	0	1	8	1243
TOTAL															8890873

\*NON-COMMERCIAL

NORTHWEST PIPELINE CORPORATION  
GAS RESERVES DEPARTMENT ECONOMIC STUDY  
COMMERCIALITY OF SJ 30-5 UNIT #86

WED AUGUST 7, 1985  
10:45:10 AM

WORKING INT. B/PAYOUT.....%	100.0	ANNUAL COST INFLATION.....%	0.0
WORKING INT. A/PAYOUT.....%	100.0	ANNUAL PRICE INFLATION.....%	0.0
INCOME TAX.....%	46.0	NEG INC TAX OFFSET BY OTHER INCOME	
UNIT OF PRODUCTION DEPRECIATION			

GAS PRODUCTION FROM SJ 30-5 UNIT #86

LAND OWNER ROYALTY.....%	12.5	OVERRIDING ROYALTY.....%	0.0
AD VALOREM AND SEV TAXES....%	8.6	OPERATING COSTS (\$/MO).....	343.0
MONTH OF CAPITAL EXPENSE....	1	OPERATING COSTS (% OF PROD).	0.0
DRILLING COSTS (\$1000).....	399.3	TANGIBLE \$ (% OF DRILLING \$)	41.1
SALVAGE VALUE (\$1000).....	0.0		

INITIAL MONTH	MCF/D	% DECLINE	TO MCF/D	ENDING MONTH
12	379.0	69.2	173.0	20
20	173.0	39.3	124.0	28
28	124.0	25.4	102.0	36
36	102.0	19.9	88.0	44
44	88.0	14.9	79.0	52
52	79.0	13.0	72.0	60
60	72.0	10.2	67.0	68
68	67.0	8.8	63.0	76
76	63.0	9.4	59.0	84
84	59.0	5.2	40.0	171
171	40.0	2.8	33.0	251
251	33.0	100.0	0.0	252

YEAR	PRICE \$/ MCF	AVG MCF/D	ANNUAL MCF	ROYALTY MCF	REVENUE AFTER ROYALTY \$1000
1984	2.98	32	11536.	1442.	30.
1985	2.98	219	79878.	9985.	208.
1986	2.98	118	43182.	5398.	113.
1987	2.98	91	33238.	4155.	87.
1988	2.98	77	28081.	3510.	73.
1989	2.98	68	24842.	3105.	65.
1990	2.98	62	22547.	2818.	59.
1991	2.98	57	20935.	2617.	55.
1992	2.98	54	19843.	2480.	52.
1993	2.98	51	18807.	2351.	49.
1994	2.98	49	17825.	2228.	46.
1995	2.98	46	16895.	2112.	44.
1996	2.98	44	16013.	2002.	42.
1997	2.98	42	15177.	1897.	40.
1998	2.98	40	14496.	1812.	38.
1999	2.98	39	14076.	1759.	37.
2000	2.98	37	13676.	1709.	36.
2001	2.98	36	13287.	1661.	35.
2002	2.98	35	12909.	1614.	34.
2003	2.98	34	12542.	1568.	33.
TOTAL.....			449777.	56223.	1173.

NORTHWEST PIPELINE CORPORATION  
GAS RESERVES DEPARTMENT ECONOMIC STUDY  
COMMERCIALITY OF SJ 30-5 UNIT #86

WED AUGUST 7, 1985  
10:45:10 AM

WORKING INT. B/PAYOUT.....%	100.0	ANNUAL COST INFLATION.....%	0.0
WORKING INT. A/PAYOUT.....%	100.0	ANNUAL PRICE INFLATION.....%	0.0
INCOME TAX.....%	46.0	NEG INC TAX OFFSET BY OTHER INCOME	
UNIT OF PRODUCTION DEPRECIATION			

DISCOUNT	****PRESENT VALUE****	DISCOUNTED PROFIT TO**
***RATE**	***** \$1000 *****	***INVESTMENT RATIO***
*** % **	BEFORE TAX AFTER TAX	BEFORE TAX AFTER TAX
19.1	0.	0.00
14.1	0.	
15.0	59.	-10.
		0.15
		-0.02
		RATE OF RETURN B.T.
		0.0 RATE OF RETURN A.T.

YEAR	INCOME	**PROJECT EXPENSES IN \$1000*				*****CASH FLOW ANALYSIS IN \$1000*****				
	*\$1000	*****	*****	AD.V.	*****	*****	**CUM	*****	*****	*****
	**NET*	CAPI-	*****	SEV.	PROD.	BEFORE	BEFORE	TAXED	INCOME	AFTER
	*****	*TAL*	DEPR.	TAXES	COSTS	*TAXES	TAXES	INCOME	TAXES	TAXES
1984	30	399	4	3	0	-372	-372	-212	-98	-275
1985	208	0	29	18	4	186	-186	157	72	114
1986	113	0	16	10	4	99	-87	83	38	61
1987	87	0	12	7	4	75	-12	63	29	46
1988	73	0	10	6	4	63	51	53	24	39
1989	65	0	9	6	4	55	106	46	21	34
1990	59	0	8	5	4	50	155	41	19	31
1991	55	0	8	5	4	46	201	38	18	28
1992	52	0	7	4	4	43	244	36	17	27
1993	49	0	7	4	4	41	285	34	16	25
1994	46	0	7	4	4	38	323	32	15	24
1995	44	0	6	4	4	36	359	30	14	22
1996	42	0	6	4	4	34	393	28	13	21
1997	40	0	6	3	4	32	426	26	12	20
1998	38	0	5	3	4	30	456	25	12	19
1999	37	0	5	3	4	29	485	24	11	18
2000	36	0	5	3	4	28	514	23	11	18
2001	35	0	5	3	4	28	541	23	10	17
2002	34	0	5	3	4	27	568	22	10	17
2003	33	0	5	3	4	26	594	21	10	16
-----										
TOTAL	1173	399	164	101	79	594	0	594	273	321

PAYOUT DURING MONTH 3 OF YEAR 5

**NORTHWEST PIPELINE CORPORATION**  
**GAS RESERVES DEPARTMENT ECONOMIC STUDY**  
**COMMERCIALITY OF S J 3B-5 UNIT #88**

WORKING INT. B/PAYOUT.....% 100.0  
 WORKING INT. A/PAYOUT.....% 100.0  
 INCOME TAX.....% 46.0  
 UNIT OF PRODUCTION DEPRECIATION

GAS PRODUCTION FROM S J 3B-5 UNIT #88  
 LAND OWNER ROYALTY.....% 12.5  
 AD VALOREM AND SEV TAXES.....% 8.6  
 MONTH OF CAPITAL EXPENSE..... 1  
 DRILLING COSTS (\$1000)..... 359.7  
 SALVAGE VALUE (\$1000).....% 0.0

INITIAL MONTH	MCF/D	DECLINE	MCF/D	TO MONTH
9	516.0	83.6	289.0	15
15	209.0	43.4	150.0	22
22	150.0	20.8	123.0	29
29	123.0	21.1	105.0	37
37	105.0	16.6	93.0	45
45	93.0	12.6	86.0	52
52	86.0	12.2	78.0	61
61	78.0	8.6	74.0	68
68	74.0	10.0	69.0	76
76	69.0	6.5	66.0	84
84	66.0	7.7	63.0	91
91	63.0	8.0	60.0	98
98	60.0	5.7	58.0	112
112	58.0	5.0	55.0	125
125	55.0	4.9	50.0	139
139	50.0	3.4	48.0	153
153	48.0	3.9	46.0	160
160	46.0	3.7	44.0	168
168	44.0	4.2	42.0	193
193	42.0	2.2	41.0	206
206	41.0	3.7	39.0	222
222	39.0	1.8	38.0	239
239	38.0	3.5	37.0	248
248	37.0	100.0	0.0	249

YEAR	PRICE \$/MCF	AVG MCF/D	ANNUAL MCF	ROYALTY MCF	REVENUE AFTER ROYALTY \$1000
1983	3.19	139	50831.	6354.	142.
1984	3.10	126	68114.	3514.	190.
1985	3.19	121	44059.	5507.	123.
1986	3.19	97	38395.	4424.	99.
1987	3.19	84	30598.	3025.	85.
1988	3.19	75	27317.	3415.	76.
1989	3.19	63	24900.	3112.	70.
1990	3.19	63	23084.	2886.	64.
1991	3.19	59	21441.	2680.	60.
1992	3.19	51	20240.	2531.	57.
1993	3.19	47	18241.	2406.	54.
1994	3.19	47	18300.	2291.	51.
1995	3.19	47	17658.	2207.	49.
1996	3.19	47	16997.	2125.	47.
1997	3.19	46	16255.	2044.	46.

OVERRIDING ROYALTY.....% 0.0  
 OPERATING COSTS (\$/MO)..... 300.0  
 OPERATING COSTS (% OF PROD)..... 0.0  
 TANGIBLE \$ (% OF DRILLING \$) 45.6



NORTHWEST PIPELINE CORPORATION  
GAS RESERVES DEPARTMENT ECONOMIC STUDY  
COMMERCIALITY OF SAN JUAN 39-5 UNIT #89 DK  
THU MARCH 19, 1987  
3:14:50 PM  
3-18-87

WORKING INT. B/PAYOUT.....% 100.0 ANNUAL COST INFLATION.....% 0.0  
WORKING INT. A/PAYOUT.....% 100.0 ANNUAL PRICE INFLATION.....% 0.0  
INCOME TAX.....% 46.0 NEG INC TAX OFFSET BY OTHER INCOME  
UNIT OF PRODUCTION DEPRECIATION

DISCOUNT \*\*\*\*\* DISCOUNTED PROFIT TO\*\*  
\*\*\*\*\* \$1000 \*\*\*\*\* \*\*INVESTMENT RATIO\*\*  
\*\*\* Z \*\* BEFORE TAX AFTER TAX BEFORE TAX AFTER TAX  
52.4 0. 0.00 0.00 RATE OF RETURN P.T.  
35.5 399. 1.12 0.49 RATE OF RETURN A.T.  
15.0 487. 1.37 0.44  
12.0 695. 1.96 0.98  
7.0

***CASH FLOW ANALYSIS IN \$1000***									
INCOME	***PROJECT EXPENSES IN \$1000*	***AD.V.***	***PROD. COSTS***	***TAXES***	***BEFORE TAXED INCOME***	***TAXES***	***INCOME TAXES***	***TAXES***	***TAXES***
YEAR	*****	*****	*****	*****	*****	*****	*****	*****	*****
1984	197	355	19	17	2	-177	-177	-13	-163
1985	212	0	19	18	4	190	13	79	111
1986	155	0	14	13	4	138	151	57	81
1987	129	0	12	11	4	114	266	102	67
1988	113	0	10	10	4	100	365	89	41
1989	102	0	9	9	4	90	455	81	53
1990	95	0	8	8	4	84	539	75	49
1991	96	0	8	8	4	79	618	70	46
1992	84	0	8	7	4	73	691	66	43
1993	79	0	7	7	4	69	760	61	40
1994	74	0	7	6	4	64	824	57	38
1995	70	0	6	6	4	60	884	54	35
1996	65	0	6	6	4	56	940	50	33
1997	61	0	5	5	4	52	992	47	31
1998	57	0	5	5	4	49	1041	44	29
1999	54	0	5	5	4	45	1086	41	27
2000	50	0	5	4	4	42	1129	38	25
2001	47	0	4	4	4	40	1168	35	23
2002	44	0	4	4	4	37	1205	33	22
2003	42	0	4	4	4	34	1240	31	20
TOTAL	1822	355	156	157	70	1240	0	1239	570

PAYOUT DURING MONTH 11 OF YEAR 2

NORTHWEST PIPELINE CORPORATION  
 GAS RESERVES DEPARTMENT ECONOMIC STUDY  
 CONFIDENTIALITY OF SAN JUAN 30-5 UNIT #89 DK  
 THU MARCH 19, 1987  
 3:14:50 PM  
 3-18-87

WORKING INT. R/PAYOUT.....% 100.0  
 WORKING INT. A/PAYOUT.....% 100.0  
 INCOME TAX.....% 46.0  
 UNIT OF PRODUCTION DEPRECIATION

ANNUAL COST INFLATION.....% 0.0  
 ANNUAL PRICE INFLATION.....% 0.0  
 REG INC TAX OFFSET BY OTHER INCOME

GAS PRODUCTION FROM JJ 30-5 UNIT #89 DK  
 LAND OWNER ROYALTY.....% 12.5  
 AD VALGREN AND DEV TAXES...% 8.6  
 MONTH OF CAPITAL EXPENSE.... 1  
 DRILLING COSTS (\$1000)..... 355.2  
 SALVAGE VALUE (\$1000)..... 0.0

OVERSIDDING ROYALTY.....% 0.0  
 OPERATING COSTS (\$/MO)..... 300.0  
 OPERATING COSTS (% OF PROD) 0.0  
 TANGIBLE \$ (% OF DRILLING \$) 46.6

YEAR	BEG. YR \$/ MCF	AVG MCF/D	ANNUAL MCF	ROYALTY MCF	REVENUE AFTER ROYALTY \$1000
1984	3.22	192	70036.	8755.	197.
1985	3.22	206	75152.	9394.	212.
1986	3.22	151	55664.	6883.	153.
1987	3.22	125	45728.	5716.	129.
1988	3.22	110	40090.	5011.	113.
1989	3.22	100	36344.	4543.	102.
1990	3.22	93	34608.	4251.	96.
1991	3.22	87	31894.	3987.	90.
1992	3.22	82	29911.	3739.	84.
1993	3.22	77	28051.	3506.	79.
1994	3.22	72	26307.	3288.	74.
1995	3.22	68	24671.	3084.	70.
1996	3.22	63	23137.	2872.	65.
1997	3.22	59	21699.	2712.	61.
1998	3.22	56	20350.	2544.	57.
1999	3.22	52	19084.	2386.	54.
2000	3.22	49	17878.	2237.	50.
2001	3.22	45	16785.	2098.	47.
2002	3.22	43	15741.	1968.	44.
2003	3.22	40	14743.	1845.	41.
TOTAL			646700	80836.	1822.

NORTHWEST PIPELINE CORPORATION  
GAS RESERVES DEPARTMENT ECONOMIC STUDY  
COMMERCIALITY OF SAN JUAN 30-5 UNIT #92 DK

THU MARCH 19, 1987  
3:23:04 PM

WORKING INT. B/PAYOUT.....% 100.0  
WORKING INT. A/PAYOUT.....% 100.0  
INCOME TAX.....% 46.0  
-UNIT OF PRODUCTION DEPRECIATION

GAS PRODUCTION FROM SJ 30-5 UNIT #92 DK  
LAND OWNER ROYALTY.....% 12.5  
AD VALOREM AND SEV TAXES.....% 17.4  
MONTH OF CAPITAL EXPENSE..... 8  
DRILLING COSTS (\$1000)..... 354.1  
SALVAGE VALUE (\$1000)..... 0.0

ANNUAL COST INFLATION.....% 0.0  
ANNUAL PRICE INFLATION.....% 0.0  
REG INC TAX OFFSET BY OTHER INCOME

OVERRIDING ROYALTY..... 0.0  
OPERATING COSTS (\$/MO)..... 500.0  
OPERATING COSTS (% OF PROD)..... 0.0  
TANGIBLE \$ (% OF DRILLING \$) 47.0

INITIAL NORTH	HCF/D	DECLINE %	TO ENDING HCF/D MONTH
15	275.0	31.7	250.0 18
18	250.0	49.3	211.0 21
21	211.0	37.0	183.0 24
24	183.0	29.9	172.0 27
27	172.0	20.9	136.0 39
39	136.0	14.0	117.0 51
51	117.0	10.3	105.0 63
63	105.0	5.2	45.0 255
255	45.0	100.0	0.0 256

YEAR	REG. YR \$/ MCF	AVG HCF/D	ANNUAL HCF	ROYALTY HCF	REVENUE AFTER ROYALTY \$1000
1983	3.63	0	0	0	0
1984	3.63	192	70201	8775	221
1985	3.16	161	50263	7370	169
1986	2.25	131	47675	5939	92
1987	1.80	114	41465	5183	65
1988	1.80	104	37812	4727	80
1989	1.80	98	35820	4477	56
1990	1.80	93	33772	4247	54
1991	1.80	83	32220	4028	51
1992	1.80	84	30558	3820	48
1993	1.80	79	28982	3623	45
1994	1.80	73	27487	3435	43
1995	1.80	71	26069	3259	41
1996	1.80	68	24725	3091	39
1997	1.80	64	23450	2931	37
1998	1.80	61	22240	2780	35
1999	1.80	58	21091	2637	33
2000	1.80	55	20005	2501	32
2001	1.80	52	18971	2372	30
2002	1.80	49	17995	2249	28
2003	1.80	46	17066	2133	27
TOTAL			636765	77594	1197



THU MARCH 19, 1987  
3:23:04 PM

ANNUAL COST INFLATION.....%	0.0
ANNUAL PRICE INFLATION.....%	0.0
NEG INC TAX OFFSET BY OTHER INCOME	

UNATED PROFIT TO**	ESTMENT RATION***	RATE OF RETURN B.T.
TAX	AFTER TAX	RATE OF RETURN A.T.
0.00	0.00	0.0
0.23	0.01	0.01
0.36	0.09	0.09
0.55	0.27	0.27

****CASH FLOW ANALYSIS IN \$1000****					
*****	*****	*****	*****	*****	*****
BEFORE	BEFORE	TAXED	INCOME	INCOME	AFTER
TAXES	TAXES	INCOME	TAXES	TAXES	TAXES
*****	*****	*****	*****	*****	*****
-354	-354	-188	-86	-268	
177	-177	159	73	104	
126	-51	110	51	75	
70	19	58	27	44	
48	67	37	15	31	
43	110	33	17	28	
41	151	31	14	26	
38	189	29	13	25	
36	225	27	13	22	
34	259	26	12	21	
32	290	24	11	19	
30	320	23	10	17	
28	348	21	10	16	
26	374	20	9	15	
24	399	18	8	14	
23	422	17	8	13	
21	443	16	7	12	
20	463	15	7	12	
19	482	14	6	12	
17	499	13	6	11	
16	515	12	5		
515	0	515	237	278	

EXCULT DURING MONTH 9 OF YEAR 4

NORTHWEST PIPELINE CORPORATION  
 GAS RESERVES DEPARTMENT ECONOMIC STUDY  
 COMMERCIALITY OF SJ 30-5 UNIT #94 DK

FRI MAY 23, 1986  
 4:16:16 PM

WORKING INT. B/PAYOUT.....%	100.0	ANNUAL COST INFLATION.....%	0.0
WORKING INT. A/PAYOUT.....%	100.0	ANNUAL PRICE INFLATION.....%	0.0
INCOME TAX.....%	46.0	NEG INC TAX OFFSET BY OTHER INCOME	
UNIT OF PRODUCTION DEPRECIATION			

GAS PRODUCTION FROM SJ 30-5 UNIT #94 DK

LAND OWNER ROYALTY.....%	12.5	OVERRIDING ROYALTY.....	0.0
AD VALOREM AND SEV TAXES...%	8.6	OPERATING COSTS (\$/MO).....	343.0
MONTH OF CAPITAL EXPENSE....	11	OPERATING COSTS (% OF PROD).	0.0
DRILLING COSTS (\$1000).....	381.4	TANGIBLE \$ (% OF DRILLING \$)	44.9
SALVAGE VALUE (\$1000).....	0.0		

INITIAL MONTH	MCF/D	% DECLINE	TO MCF/D	ENDING MONTH
16	254.0	0.0	254.0	21
21	254.0	100.0	1.0	22
22	1.0	0.0	1.0	24
24	1.0	-999999.9	163.0	25
25	163.0	13.8	137.0	39
39	137.0	6.7	39.0	256
256	39.0	100.0	0.0	257

NORTHWEST PIPELINE CORPORATION  
 GAS RESERVES DEPARTMENT ECONOMIC STUDY  
 COMMERCIALITY OF SJ 30-5 UNIT #94 DK

FRI MAY 23, 1986  
 4:16:16 PM

YEAR	BEG. YR \$/ MCF	AVG MCF/D	ANNUAL MCF	ROYALTY MCF	REVENUE AFTER ROYALTY \$1000
1983	3.54	0	0.	0.	0.
1984	3.54	127	46478.	5810.	144.
1985	3.16	152	55658.	6957.	131.
1986	2.25	135	49129.	6141.	80.
1987	1.80	125	45753.	5719.	72.
1988	1.80	117	42682.	5335.	67.
1989	1.80	109	39817.	4977.	63.
1990	1.80	102	37145.	4643.	59.
1991	1.80	95	34652.	4331.	55.
1992	1.80	89	32326.	4041.	51.
1993	1.80	83	30156.	3770.	47.
1994	1.80	77	28132.	3516.	44.
1995	1.80	72	26244.	3280.	41.
1996	1.80	67	24482.	3060.	39.
1997	1.80	63	22839.	2855.	36.
1998	1.80	58	21306.	2663.	34.
1999	1.80	54	19876.	2484.	31.
2000	1.80	51	18542.	2318.	29.
2001	1.80	47	17297.	2162.	27.
2002	1.80	44	16136.	2017.	25.
TOTAL.....			608645.	76079.	1076.

FRI MAY 23, 1986  
4:16:16 PM

ANNUAL COST INFLATION.....%	0.0
ANNUAL PRICE INFLATION.....%	0.0
NEG INC TAX OFFSET BY OTHER INCOME	

YEAR	INCOME	**PROJECT EXPENSES IN \$1000*				****CASH FLOW ANALYSIS IN \$1000****				
	**\$1000 **NET*	***** CAPI- *TAL*	***** DEPR.	AD.V. SEV. TAXES	***** PROD. COSTS	***** BEFORE *TAXES	**CUM BEFORE TAXES	***** TAXED INCOME	***** INCOME TAXES	***** AFTER TAXES
1983	0	381	0	0	0	-381	-381	-210	-97	-285
1984	144	0	13	12	3	129	-253	116	53	75
1985	131	0	16	11	4	116	-137	100	46	70
1986	80	0	14	7	4	69	-68	55	25	44
1987	72	0	13	6	4	62	-6	49	22	39
1988	67	0	12	6	4	57	51	45	21	36
1989	63	0	11	5	4	53	105	42	19	34
1990	59	0	10	5	4	49	154	39	18	31
1991	55	0	10	5	4	46	200	36	17	29
1992	51	0	9	4	4	42	242	33	15	27
1993	48	0	8	4	4	39	281	31	14	25
1994	44	0	8	4	4	36	318	28	13	23
1995	41	0	7	4	4	34	351	26	12	22
1996	39	0	7	3	4	31	382	24	11	20
1997	36	0	6	3	4	29	411	22	10	18
1998	34	0	6	3	4	27	438	21	9	17
1999	31	0	6	3	4	24	462	19	9	16
2000	29	0	5	3	4	23	485	17	8	15
2001	27	0	5	2	4	21	505	16	7	13
2002	25	0	5	2	4	19	525	15	7	12
TOTAL	1076	382	171	93	77	525	0	524	241	283

PAYOUT DURING MONTH 2 OF YEAR 6

NORTHWEST PIPELINE CORPORATION  
 GAS RESERVES DEPARTMENT ECONOMIC STUDY  
 COMMERCIALITY OF SJ 30-5 UNIT #95 DK

TUE MAY 27, 1986  
 10:52:49 AM

WORKING INT. B/PAYOUT.....%	100.0	ANNUAL COST INFLATION.....%	0.0
WORKING INT. A/PAYOUT.....%	100.0	ANNUAL PRICE INFLATION.....%	0.0
INCOME TAX.....%	46.0	NEG INC TAX OFFSET BY OTHER INCOME	
UNIT OF PRODUCTION DEPRECIATION			

GAS PRODUCTION FROM SJ 30-5 UNIT #95 DK

LAND OWNER ROYALTY.....%	12.5	OVERRIDING ROYALTY.....	0.0
AD VALOREM AND SEV TAXES...%	8.6	OPERATING COSTS (\$/MO).....	343.0
MONTH OF CAPITAL EXPENSE....	9	OPERATING COSTS (% OF PROD)..	0.0
DRILLING COSTS (\$1000).....	348.9	TANGIBLE \$ (% OF DRILLING \$)	43.5
SALVAGE VALUE (\$1000).....	0.0		

INITIAL MONTH	MCF/D	% DECLINE	TO MCF/D	ENDING MONTH
16	287.0	-81908.7	502.0	17
17	502.0	94.0	397.0	18
18	397.0	98.1	285.0	19
19	285.0	87.3	240.0	20
20	240.0	26.2	234.0	21
21	234.0	100.0	1.0	22
22	1.0	0.0	1.0	26
26	1.0	-999999.9	132.0	27
27	132.0	5.3	125.0	39
39	125.0	7.6	30.0	256
256	30.0	100.0	0.0	257

NORTHWEST PIPELINE CORPORATION  
 GAS RESERVES DEPARTMENT ECONOMIC STUDY  
 COMMERCIALITY OF SJ 30-5 UNIT #95 DK

TUE MAY 27, 1986  
 10:52:49 AM

YEAR	BEG. YR \$/ MCF	AVG MCF/D	ANNUAL MCF	ROYALTY MCF	REVENUE AFTER ROYALTY \$1000
1983	3.54	0	0.	0.	0.
1984	3.54	162	59292.	7412.	184.
1985	3.16	108	39429.	4929.	90.
1986	2.25	122	44605.	5576.	73.
1987	1.80	113	41242.	5155.	65.
1988	1.80	104	38112.	4764.	60.
1989	1.80	96	35220.	4403.	55.
1990	1.80	89	32548.	4068.	51.
1991	1.80	82	30078.	3760.	47.
1992	1.80	76	27795.	3474.	44.
1993	1.80	70	25686.	3211.	40.
1994	1.80	65	23737.	2967.	37.
1995	1.80	60	21936.	2742.	35.
1996	1.80	55	20271.	2534.	32.
1997	1.80	51	18733.	2342.	30.
1998	1.80	47	17311.	2164.	27.
1999	1.80	44	15997.	2000.	25.
2000	1.80	40	14784.	1848.	23.
2001	1.80	37	13662.	1708.	22.
2002	1.80	35	12625.	1578.	20.
TOTAL.....			533056.	66632.	960.

NORTHWEST PIPELINE CORPORATION  
GAS RESERVES DEPARTMENT ECONOMIC STUDY  
COMMERCIALITY OF SJ 30-5 UNIT #95 DK

TUE MAY 27, 1986  
10:52:49 AM

WORKING INT. B/PAYOUT.....%	100.0	ANNUAL COST INFLATION.....%	0.0
WORKING INT. A/PAYOUT.....%	100.0	ANNUAL PRICE INFLATION.....%	0.0
INCOME TAX.....%	46.0	NEG INC TAX OFFSET BY OTHER INCOME	
UNIT OF PRODUCTION DEPRECIATION			

DISCOUNT	****PRESENT VALUE*****	DISCOUNTED PROFIT TO**
**RATE**	***** \$1000 *****	***INVESTMENT RATIO***
*** % **	BEFORE TAX    AFTER TAX	BEFORE TAX    AFTER TAX
20.4	0.	0.00
14.1	0.	0.0
15.0	53.	-7.
		0.15
		-0.02
		RATE OF RETURN B.T.
		0.0 RATE OF RETURN A.T.

YEAR	INCOME	**PROJECT EXPENSES IN \$1000*				****CASH FLOW ANALYSIS IN \$1000****				
	**\$1000	*****	*****	AD.V.	*****	*****	**CUM	*****	*****	*****
	**NET*	CAPIT-	*****	SEV.	PROD.	BEFORE	BEFORE	TAXED	INCOME	AFTER
	*****	*TAL*	DEPR.	TAXES	COSTS	*TAXES	TAXES	INCOME	TAXES	TAXES
1983	0	349	0	0	0	-349	-349	-197	-91	-258
1984	184	0	17	16	3	165	-184	148	68	97
1985	90	0	11	8	4	78	-106	66	31	47
1986	73	0	13	6	4	62	-44	50	23	39
1987	65	0	12	6	4	55	12	43	20	35
1988	60	0	11	5	4	51	62	40	18	32
1989	55	0	10	5	4	47	109	37	17	30
1990	51	0	9	4	4	43	152	33	15	27
1991	47	0	9	4	4	39	191	31	14	25
1992	44	0	8	4	4	36	227	28	13	23
1993	40	0	7	3	4	33	259	26	12	21
1994	37	0	7	3	4	30	290	23	11	19
1995	35	0	6	3	4	27	317	21	10	18
1996	32	0	6	3	4	25	342	19	9	16
1997	30	0	5	3	4	23	365	17	8	15
1998	27	0	5	2	4	21	386	16	7	13
1999	25	0	5	2	4	19	405	14	7	12
2000	23	0	4	2	4	17	422	13	6	11
2001	22	0	4	2	4	16	437	12	5	10
2002	20	0	4	2	4	14	451	10	5	9
-----										
TOTAL	961	349	152	83	77	451	0	451	208	244

PAYOUT DURING MONTH 10 OF YEAR 5

NORTHWEST PIPELINE CORPORATION  
 GAS RESERVES DEPARTMENT ECONOMIC STUDY  
 COMMERCIALITY OF SJ 30-5 UNIT #97 DK

FRI MAY 23, 1986  
 2:24:20 PM

WORKING INT. B/PAYOUT.....%	100.0	ANNUAL COST INFLATION.....%	0.0
WORKING INT. A/PAYOUT.....%	100.0	ANNUAL PRICE INFLATION....%	0.0
INCOME TAX.....%	46.0	NEG INC TAX OFFSET BY OTHER INCOME	

UNIT OF PRODUCTION DEPRECIATION

GAS PRODUCTION FROM SJ 30-5 UNIT #97 DK

LAND OWNER ROYALTY.....%	12.5	OVERRIDING ROYALTY.....	0.0
AD VALOREM AND SEV TAXES...%	8.6	OPERATING COSTS (\$/MO).....	343.0
MONTH OF CAPITAL EXPENSE....	2	OPERATING COSTS (% OF PROD).	0.0
DRILLING COSTS (\$1000).....	369.9	TANGIBLE \$ (% OF DRILLING \$)	47.6
SALVAGE VALUE (\$1000).....	0.0		

INITIAL MONTH	MCF/D	% DECLINE	TO MCF/D	ENDING MONTH
8	470.0	99.4	305.0	9
9	305.0	98.3	217.0	10
10	217.0	72.3	195.0	11
11	195.0	66.5	178.0	12
12	178.0	81.0	155.0	13
13	155.0	24.2	148.0	15
15	148.0	9.5	134.0	27
27	134.0	6.7	37.0	248
248	37.0	100.0	0.0	249



NORTHWEST PIPELINE CORPORATION  
GAS RESERVES DEPARTMENT ECONOMIC STUDY  
COMMERCIALITY OF SJ 30-5 UNIT #97 DK

FRI MAY 23, 1986

2:24:20 PM

WORKING INT. B/PAYOUT.....%	100.0	ANNUAL COST INFLATION.....%	0.0
WORKING INT. A/PAYOUT.....%	100.0	ANNUAL PRICE INFLATION.....%	0.0
INCOME TAX.....%	46.0	NEG INC TAX OFFSET BY OTHER INCOME	

UNIT OF PRODUCTION DEPRECIATION

DISCOUNT	****PRESENT VALUE****	DISCOUNTED PROFIT TO**
***RATE**	***** \$1000 *****	***INVESTMENT RATIO***
*** % **	BEFORE TAX    AFTER TAX	BEFORE TAX    AFTER TAX
20.1	0.	0.00
13.6	0.	
15.0	60.	-13.

RATE OF RETURN B.T.  
0.0 RATE OF RETURN A.T.  
-0.04

YEAR	INCOME	**PROJECT EXPENSES IN \$1000*				****CASH FLOW ANALYSIS IN \$1000****				
	**\$1000 **NET*	***** CAPI- *TAL*	***** DEPR.	AD.V. SEV. TAXES	***** PROD. COSTS	***** BEFORE *TAXES	**CUM BEFORE TAXES	***** TAXED INCOME	***** INCOME TAXES	***** AFTER TAXES
1984	124	370	12	11	2	-258	-258	-94	-43	-215
1985	124	0	15	11	4	110	-148	94	43	66
1986	78	0	14	7	4	67	-81	53	25	43
1987	70	0	13	6	4	60	-21	47	22	39
1988	66	0	12	6	4	56	35	44	20	36
1989	61	0	11	5	4	52	87	40	19	33
1990	57	0	11	5	4	48	135	37	17	31
1991	53	0	10	5	4	45	180	35	16	29
1992	50	0	9	4	4	41	221	32	15	27
1993	46	0	9	4	4	38	259	30	14	25
1994	43	0	8	4	4	35	294	27	13	23
1995	40	0	7	3	4	33	327	25	12	21
1996	38	0	7	3	4	30	357	23	11	20
1997	35	0	6	3	4	28	385	21	10	18
1998	33	0	6	3	4	26	411	20	9	17
1999	30	0	6	3	4	24	435	18	8	15
2000	28	0	5	2	4	22	456	17	8	14
2001	26	0	5	2	4	20	476	15	7	13
2002	25	0	5	2	4	18	495	14	6	12
2003	23	0	4	2	4	17	512	13	6	11
TOTAL	1053	370	176	91	80	512	0	512	235	276

PAYOUT DURING MONTH 5 OF YEAR 5

NORTHWEST PIPELINE CORPORATION  
 GAS RESERVES DEPARTMENT ECONOMIC STUDY  
 COMMERCIALITY OF SJ 30-5 UNIT #97 DK

FRI MAY 23, 1986  
 2:24:20 PM

YEAR	BEG. YR \$/ MCF	AVG MCF/D	ANNUAL MCF	ROYALTY MCF	REVENUE AFTER ROYALTY \$1000
1984	3.53	114	41547.	5193.	124.
1985	3.15	144	52740.	6592.	124.
1986	2.25	131	47996.	6000.	78.
1987	1.80	122	44728.	5591.	70.
1988	1.80	114	41710.	5214.	66.
1989	1.80	106	38894.	4862.	61.
1990	1.80	99	36269.	4534.	57.
1991	1.80	93	33821.	4228.	53.
1992	1.80	86	31539.	3942.	50.
1993	1.80	81	29410.	3676.	46.
1994	1.80	75	27425.	3428.	43.
1995	1.80	70	25574.	3197.	40.
1996	1.80	65	23848.	2981.	38.
1997	1.80	61	22239.	2780.	35.
1998	1.80	57	20738.	2592.	33.
1999	1.80	53	19338.	2417.	30.
2000	1.80	49	18033.	2254.	28.
2001	1.80	46	16816.	2102.	26.
2002	1.80	43	15681.	1960.	25.
2003	1.80	40	14622.	1828.	23.
TOTAL.....			602961.	75369.	1052.

NORTHWEST PIPELINE CORPORATION  
GAS RESERVES DEPARTMENT ECONOMIC STUDY  
COMMERCIALITY OF SJ 30-5 UNIT #101

MON AUGUST 12, 1985  
10:13:35 AM

WORKING INT. B/PAYOUT.....%	100.0	ANNUAL COST INFLATION.....%	0.0
WORKING INT. A/PAYOUT.....%	100.0	ANNUAL PRICE INFLATION.....%	0.0
INCOME TAX.....%	46.0	NEG INC TAX OFFSET BY OTHER INCOME	

UNIT OF PRODUCTION DEPRECIATION

GAS PRODUCTION FROM SJ 30-5 UNIT #101

LAND OWNER ROYALTY.....%	12.5	OVERRIDING ROYALTY.....	0.0
AD VALOREM AND SEV TAXES...%	8.6	OPERATING COSTS (\$/MO).....	343.0
MONTH OF CAPITAL EXPENSE....	1	OPERATING COSTS (% OF PROD).	0.0
DRILLING COSTS (\$1000).....	389.0	TANGIBLE \$ (% OF DRILLING \$)	41.6
SALVAGE VALUE (\$1000).....	0.0		

INITIAL MONTH	MCF/D	% DECLINE	TO MCF/D	ENDING MONTH
1	379.0	70.0	170.0	9
9	170.0	22.0	144.0	17
17	144.0	25.8	118.0	25
25	118.0	18.4	103.0	33
33	103.0	15.6	92.0	41
41	92.0	12.8	84.0	49
49	84.0	10.5	78.0	57
57	78.0	9.5	73.0	65
65	73.0	8.1	69.0	73
73	69.0	5.4	46.0	160
160	46.0	2.8	38.0	240
240	38.0	100.0	0.0	241

YEAR	PRICE \$/ MCF	AVG MCF/D	ANNUAL MCF	ROYALTY MCF	REVENUE AFTER ROYALTY \$1000
1984	2.86	238	86779.	10847.	217.
1985	2.86	139	50661.	6333.	127.
1986	2.86	108	39373.	4922.	99.
1987	2.86	91	33140.	4143.	83.
1988	2.86	80	29186.	3648.	73.
1989	2.86	72	26419.	3302.	66.
1990	2.86	67	24568.	3071.	61.
1991	2.86	64	23231.	2904.	58.
1992	2.86	60	21968.	2746.	55.
1993	2.86	57	20773.	2597.	52.
1994	2.86	54	19643.	2455.	49.
1995	2.86	51	18575.	2322.	46.
1996	2.86	48	17564.	2196.	44.
1997	2.86	46	16721.	2090.	42.
1998	2.86	44	16230.	2029.	41.
1999	2.86	43	15772.	1971.	39.
2000	2.86	42	15326.	1916.	38.
2001	2.86	41	14893.	1862.	37.
2002	2.86	40	14472.	1809.	36.
2003	2.86	39	14063.	1758.	35.
TOTAL.....			519351.	64919.	1300.

MON AUGUST 12, 1985  
10:13:35 AM

DISCOUNT	*****PRESENT VALUE*****	DISCOUNTED PROFIT TO**
***RATE**	***** \$1000 *****	***INVESTMENT RATIO***
*** % **	BEFORE TAX      AFTER TAX	BEFORE TAX      AFTER TAX
31.1	0.	0.00
21.2	0.	0.0
15.0	163.      50.	0.42      0.13

PAYOUT DURING MONTH 12 OF YEAR 3

NORTHWEST PIPELINE CORPORATION  
GAS RESERVES DEPARTMENT ECONOMIC STUDY  
COMMERCIALITY OF SJ 30-5 UNIT #104 DK

TUE MAY 27, 1986  
6:13:15 PM

WORKING INT. B/PAYOUT.....%	100.0	ANNUAL COST INFLATION.....%	0.0
WORKING INT. A/PAYOUT.....%	100.0	ANNUAL PRICE INFLATION.....%	0.0
INCOME TAX.....%	46.0	NEG INC TAX OFFSET BY OTHER INCOME	
UNIT OF PRODUCTION DEPRECIATION			

DISCOUNT	*****PRESENT VALUE*****		DISCOUNTED PROFIT TO**	
**RATE**	***** \$1000 *****		***INVESTMENT RATIO***	
*** % **	BEFORE TAX	AFTER TAX	BEFORE TAX	AFTER TAX
15.3	0.		0.00	RATE OF RETURN B.T.
10.8		0.		0.0 RATE OF RETURN A.T.
15.0	4.	-40.	0.01	-0.11

YEAR	INCOME	**PROJECT EXPENSES IN \$1000*				****CASH FLOW ANALYSIS IN \$1000****				
	**\$1000 **NET*	***** CAPI- *TAL*	***** DEPR.	AD.V. SEV. TAXES	***** PROD. COSTS	***** BEFORE *TAXES	**CUM BEFORE TAXES	***** TAXED INCOME	***** INCOME TAXES	***** AFTER TAXES
1984	18	360	2	2	1	-345	-345	-185	-85	-260
1985	188	0	24	16	4	168	-177	143	66	102
1986	72	0	13	6	4	62	-115	48	22	40
1987	65	0	12	6	4	55	-60	42	20	35
1988	60	0	11	5	4	50	-10	39	18	33
1989	55	0	11	5	4	46	37	36	16	30
1990	51	0	10	4	4	43	79	33	15	28
1991	48	0	9	4	4	39	119	30	14	25
1992	44	0	8	4	4	36	155	28	13	23
1993	41	0	8	4	4	33	188	25	12	21
1994	38	0	7	3	4	30	218	23	11	20
1995	35	0	7	3	4	28	246	21	10	18
1996	32	0	6	3	4	25	271	19	9	17
1997	30	0	6	3	4	23	295	18	8	15
1998	28	0	5	2	4	21	316	16	7	14
1999	26	0	5	2	4	19	335	14	7	13
2000	24	0	5	2	4	18	353	13	6	12
2001	22	0	4	2	4	16	369	12	5	11
2002	20	0	4	2	4	15	383	11	5	10
2003	19	0	4	2	4	13	397	10	4	9
TOTAL	915	360	162	79	79	397	0	397	183	214

PAYOUT DURING MONTH 3 OF YEAR 6

NORTHWEST PIPELINE CORPORATION  
GAS RESERVES DEPARTMENT ECONOMIC STUDY  
COMMERCIALITY OF SJ 30-5 UNIT #104 DK

TUE MAY 27, 1986  
6:13:15 PM

WORKING INT. B/PAYOUT.....%	100.0	ANNUAL COST INFLATION.....%	0.0
WORKING INT. A/PAYOUT.....%	100.0	ANNUAL PRICE INFLATION....%	0.0
INCOME TAX.....%	46.0	NEG INC TAX OFFSET BY OTHER INCOME	
UNIT OF PRODUCTION DEPRECIATION			

GAS PRODUCTION FROM SJ 30-5 UNIT #104 DK

LAND OWNER ROYALTY.....%	12.5	OVERRIDING ROYALTY.....	0.0
AD VALOREM AND SEV TAXES...%	8.6	OPERATING COSTS (\$/MO).....	343.0
MONTH OF CAPITAL EXPENSE....	2	OPERATING COSTS (% OF PROD).	0.0
DRILLING COSTS (\$1000).....	360.0	TANGIBLE \$ (% OF DRILLING \$)	45.0
SALVAGE VALUE (\$1000).....	0.0		

INITIAL MONTH	MCF/D	% DECLINE	TO MCF/D	ENDING MONTH
10	1.0	-999999.9	200.0	12
12	200.0	100.0	1.0	13
13	1.0	0.0	1.0	14
14	1.0	-999999.9	652.0	15
15	652.0	53.2	612.0	16
16	612.0	100.0	1.0	17
17	1.0	0.0	1.0	18
18	1.0	-999999.9	612.0	19
19	612.0	100.0	1.0	20
20	1.0	0.0	1.0	21
21	1.0	-999999.9	503.0	22
22	503.0	100.0	127.0	23
23	127.0	7.4	30.0	249
249	30.0	100.0	0.0	250

YEAR	BEG. YR \$/ MCF	AVG MCF/D	ANNUAL MCF	ROYALTY MCF	REVENUE AFTER ROYALTY \$1000
1984	3.56	18	6548.	819.	18.
1985	3.16	220	80300.	10037.	188.
1986	2.25	121	44228.	5529.	72.
1987	1.80	112	40966.	5121.	65.
1988	1.80	104	37945.	4743.	60.
1989	1.80	96	35146.	4393.	55.
1990	1.80	89	32554.	4069.	51.
1991	1.80	83	30153.	3769.	47.
1992	1.80	76	27929.	3491.	44.
1993	1.80	71	25869.	3234.	41.
1994	1.80	66	23961.	2995.	38.
1995	1.80	61	22193.	2774.	35.
1996	1.80	56	20557.	2570.	32.
1997	1.80	52	19040.	2380.	30.
1998	1.80	48	17636.	2204.	28.
1999	1.80	45	16335.	2042.	26.
2000	1.80	41	15130.	1891.	24.
2001	1.80	38	14014.	1752.	22.
2002	1.80	36	12981.	1623.	20.
2003	1.80	33	12023.	1503.	19.
TOTAL.....			535503.	66938.	915.