

EXHIBIT "B"

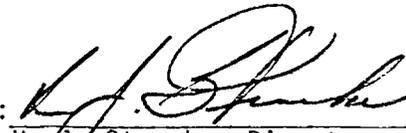
COX CANYON UNIT  
SAN JUAN COUNTY, NEW MEXICO

GEOLOGIC REPORT  
PICTURED CLIFFS EXPANSION

PROPOSED FIFTH EXPANSION OF THE  
PICTURED CLIFFS PARTICIPATING AREA

NORTHWEST PIPELINE CORPORATION

BY:



K. J. Stracke, Director  
Production & Drilling Division

Exhibit "B"

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San Juan County, New Mexico

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Pictured Cliffs Formation

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GENERAL INFORMATION

The Pictured Cliffs Formation, within the Cox Canyon Unit of San Juan County, New Mexico, is of upper Cretaceous age. It consists of sandstone with occasional, thin zones of siltstone and shaly sandstone. The producing characteristics of the Pictured Cliffs formation in this area are a result of variations in the cleanliness of the sands.

Included in this report are Exhibit "C", Figure No. 1, a structure map contoured on the top of the Pictured Cliffs Formation; Exhibit "C" Figure No. 2, an isopachous map of the Pictured Cliffs net reservoir sand; and Exhibit "D", Table No. 1, a tabulation of the Cox Canyon Unit Pictured Cliffs gas production. This table shows the cumulative production by well to January 1, 1977; the 1977 monthly production from January through September; the total production of nine (9) months of 1977; and the cumulative production to October 1, 1977. The Cox Canyon Unit has produced a cumulative total of 5,733,710 MCF of gas from the Pictured Cliffs Formation as of October 1, 1977.

PROPOSED FIFTH EXPANSION OF THE  
PICTURED CLIFFS PARTICIPATING AREA

Effective Date: October 1, 1977

Proposed Expanded Acreage:

Township 32 North, Range 11 West, N.M.P.M.  
Section 8, Lots 1 and 2, and the S/2 of the SE/4 (168.20 ac)  
Section 9, Lots 1,2,3,4; the S/2 of the SE/4; S/2 of the SW/4 (336.40)  
Section 16, N/2 (320.00)  
Section 17, NE/4; E/2 of the W/2 (320.00)  
Section 28, N/2 of the NW/4 (80.00)

The proposed Fifth Expansion of the Pictured Cliffs Participating Area is based on well log interpretations and initial well test results. From this data, it is inferred that the proposed expanded acreage is capable of producing unitized substances in commercial quantities from the Pictured Cliffs Formation, and that the acreage should be admitted to the participating area.

The Cox Canyon Unit No. 19 Com well is located 1125' FNL and 1450' FWL of Section 28, Township 32 North, Range 11 West, N.M.P.M., San Juan County, New Mexico. It was spudded on July 12, 1977 and completed October 11, 1977 at a total depth of 3204'. The Pictured Cliffs Formation was perforated with one shot per foot at the following depths: 3070', 3074', 3078', 3084', 3088', 3092', 3096', 3104', 3108' and 3120'. Subsequently, the perforated interval was acidized and sand-water fractured. The well was shut-in for eleven (11) days with a SIP of 885 psia, and was tested on October 11, 1977. The well gauged 1126 MCF/D on a three (3) hour test through a 0.750 inch choke on the 2.875 inch casing. The calculated absolute open flow potential is 1145 MCF/D.

The Cox Canyon Unit No. 20 well is located 895' FNL and 1150' FEL of Section 16, Township 32 North, Range 11 West, N.M.P.M., San Juan County, New Mexico. It was spudded June 14, 1977 and completed October 10, 1977 at a total depth of 3394 feet. The Pictured Cliffs Formation was perforated with one shot per foot between 3260'-3288' and between 3328'-3356'. The perforated intervals were then acidized and sand-water fractured. The well was shut-in for seven (7) days, with a SIP of 657 psia, and was tested on October 10, 1977. The well gauged 2114 MCF/D on a three (3) hour test through a 0.750 inch choke on the 2.875 inch casing. The calculated absolute open flow potential is 2360 MCF/D.

The Cox Canyon Unit No. 21 well is located 1065' FNL and 1450' FWL of Section 16, Township 32 North, Range 11 West, N.M.P.M., San Juan County, New Mexico. It was spudded June 18, 1977 and completed October 10, 1977 at a total depth of 3437 feet. The Pictured Cliffs Formation was perforated with one shot per foot between 3324'-3354'. The perforated interval was then acidized and fractured with a mixture of sand and water. The well was shut-in for seven (7) days, with a SIP of 709 psia, and was tested on October 10, 1977.

The well gauged 1678 MCF/D on a three (3) hour test through a 0.750 inch choke on the 2.875 inch casing. The calculated absolute open flow potential is 1779 MCF/D.

The Cox Canyon Unit No. 22 well is located 1110' FNL and 1120' FEL of Section 17, Township 32 North, Range 11 West, N.M.P.M., San Juan County, New Mexico. It was spudded July 2, 1977 and was completed on October 11, 1977 at a total depth of 3492 feet. The Pictured Cliffs Formation was perforated at 3376' with two shots and with one shot per foot at the following depths: 3380', 3384', 3388', 3392', 3396', 3400', 3404', 3408', 3426', 3430', 3440' and 3444'. The perforated section then was acidized and sand-water fractured. The well was shut-in for eleven (11) days with a SIP of 855 psia, and was tested on October 11, 1977. The well gauged 1780 MCF/D on a three (3) hour test through a 0.750 inch choke on the 2.875 inch casing. The calculated absolute open flow potential is 1863 MCF/D.

The Cox Canyon Unit No. 23 Com well is located 1170' FNL and 1690' FWL of Section 17, Township 32 North, Range 11 West, N.M.P.M., San Juan County, New Mexico. It was spudded July 1, 1977 and was completed on October 11, 1977 at a total depth of 3408 feet. The Pictured Cliffs Formation was perforated with one shot per foot from 3298'-3322'. The perforated section was acidized and sand-water fractured. The well was shut-in for eleven (11) days with a SIP of 1026 psia, and was tested on October 11, 1977. The well gauged 2401 MCF/D on a three (3) hour test through a 0.750 inch choke on the 2.875 inch casing. The calculated absolute open flow potential is 2540 MCF/D.

The Cox Canyon Unit No. 24 Com well is located 1035' FSL and 1735' FWL of Section 17, Township 32 North, Range 11 West, N.M.P.M., San Juan County, New Mexico. It was spudded on July 3, 1977 and was completed on October 11, 1977 at a total depth of 3559'. The Pictured Cliffs Formation was perforated with one shot per foot at the following depths: 3428', 3432', 3436', 3440', 3446', 3450', 3454', 3460', 3464', 3470', 3474', and 3478'. The perforated section was acidized and fractured with a mixture of sand and water. The well was shut-in for eight (8) days, with a SIP of 919 psia, then was tested on October 11, 1977. The well gauged 1073 MCF/D through a 0.750 inch choke on the 2.875 inch casing. The calculated absolute open flow potential is 1109 MCF/D.

The Cox Canyon Unit No. 25 well is located 1080' FSL and 1450' FEL of Section 9, Township 32 North, Range 11 West, N.M.P.M., San Juan County, New Mexico. It was spudded on June 9, 1977 and was completed on October 10, 1977 at a total depth of 3400 feet. The Pictured Cliffs Formation was perforated with one shot per foot from 3286' to 3320'. The perforated section was acidized and sand-water fractured. The well was shut-in for seven (7) days, with a SIP of 678 psia and was tested on October 10, 1977. The well gauged 2305 MCF/D on a three (3) hour test through a 0.750 inch choke on the 2.875 inch casing. The calculated absolute open flow potential is 2613 MCF/D.

The Cox Canyon Unit No. 26 well is located 1520' FSL and 1070' FWL of Section 9, Township 32 North, Range 11 West, N.M.P.M., San Juan County, New Mexico. It was spudded on June 18, 1977 and was completed on October 4, 1977 at a total depth of 3338 feet. The Pictured Cliffs Formation was perforated with one shot per foot from 3222'-3254'. The perforated section was acidized and fractured with a sand-water mixture. The well was shut-in for thirteen (13) days, with a SIP of 767 psia, and was tested on October 4, 1977. The

well gauged 2083 MCF/D on a three (3) hour test through a 0.750 inch choke on the 2.875 inch casing. The calculated absolute open flow potential is 2245 MCF/D.

The Cox Canyon No. 27 well is located 1580' FSL and 1620' FEL of Section 8, Township 32 North, Range 11 West, N.M.P.M., San Juan County, New Mexico. The well was spudded on June 24, 1977 and was completed on October 4, 1977 at a total depth of 3368'. The Pictured Cliffs Formation was perforated with one shot per foot from 3260'-3288'. The perforated section was acidized and sand-water fractured. The well was shut-in for ten (10) days, with a SIP of 990 psia, and was tested on October 14, 1977. The well gauged 3702 MCF/D on a three (3) hour test through a 0.750 inch choke on the 2.875 inch casing. The calculated absolute open flow potential is 4293 MCF/D.