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ANALYSIS OF ASSIGNING ALLOWABLES TO UNCONNECTED WELLS

INDIAN BASIN AREA

Estimated Pool Production:

Southern Union estimated gas takes:

Entire Area - 20 M²CFD

CASE NO. 3237

Exhibit B

Indian Basin - Upper Penn. 18 M²CFD

Indian Basin - Morrow 2 M²CFD

Natural Gas Pipeline estimated gas takes:

Entire Area - 100 M²CFD

Indian Basin - Upper Penn. 80 M²CFD

Indian Basin - Morrow 20 M²CFD

1. Upper Pennsylvanian Pool

Includes 640 acre units on which wells have been completed or in process of being completed as of April 1, 1965.

Southern Union Gas Company - 4 units

Natural Gas Pipeline Company 18 units

Assigning estimated Southern Union Gas production to units on basis of 100% acreage:

$$\frac{18 \text{ M}^2\text{CFD}}{4 \text{ units}} = 4.5 \times 4 \times 182.5 \text{ days} = 3285 \text{ M}^2\text{CF/Pro. Period.}$$

Unconnected Units:

$$4.5 \text{ M}^2\text{CFD} \times 18 \text{ units} \times 182.5 \text{ days} = \frac{14782 \text{ M}^2\text{CF/Pro. Period}}{18067 \text{ M}^2\text{CF/Pro. Period}}$$

14.782 N.G.P.L. accrued underage = 185 days underproduction in one 6 month proration period.
80 M²CFD rate of production.

Assuming two years until N.G. P.L. is connected then they will be under produced 740 days or 2.0 years.

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Exhibit 8
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MORROW POOL

Development as of April 1, 1965

Southern Union Gas Company - 2 units

Natural Gas Pipeline - 6 units

$$\frac{2 \text{ M}^2\text{CFD}}{2 \text{ units}} = 1.0 \times 2 \times 182.5 = 365 \text{ M}^2\text{CF/Pro. Period}$$

Unconnected Wells:

$$1.0 \times 6 \times 182.5 = \frac{1095 \text{ M}^2\text{CF/Pro. Unit}}$$

$$\text{Pool Allowable} \quad 1460 \text{ M}^2\text{CF/Pro. Unit}$$

1095 N.G.P.L. accrued underage = 55 days underproduction in one proration period.

$\frac{1095}{20} \text{ M}^2\text{CFD}$ N.G.P.L. rate of production.

Assuming two years until connection N.G.P.L. would be under produced 220 days or .6 years.

UPPER PENNSYLVANIAN POOL

Includes all 640 acre units which Oil Conservation Commission staff believes will be productive based on current geological data.

Productive Units - 43

Southern Union Gas - 5 units

Natural Gas Pipeline - 38 units

18 M²CFD = $3.6 \times 5 \times 182.5$ = 3285 M²CF/Period

5 units

Unconnected Wells:

$3.6 \times 38 \times 182.5$ = 24,966 M²CF/Period

Pool Allowable 28,251 M²CF/Period

24,966 N.G.P.L. accrued underage = 312 days underproduction in one period.

80 M²CFD rate of production

Assuming two years until N.G.P.L. connection, they would be underproduced 1248 days or 3.4 years.

MORROW POOL

Includes all 640 acre units which Oil Conservation Commission staff believe will be productive based on current geological data.

Productive Units - 10

Southern Union Gas - 2 Units

Natural Gas Pipeline - 8 Units

$$2 \text{ M}^2\text{CFD} = 1.0 \times 2 \times 182.5 = 365 \text{ M}^2\text{CF/Period}$$

2 units

Unconnected Wells:

$$1.0 \times 8 \times 182.5 = 1460 \text{ M}^2\text{CF/Period}$$

$$\text{Pool Allowable} \quad 1825 \text{ M}^2\text{CF/Period}$$

$\frac{1460}{20} \text{ N.G.P.L. accrued underage} = 73 \text{ days underproduction in one period.}$
 $\text{20 M}^2\text{CFD rate of production}$

Assuming two years until N.G.P.L. is connected, they would be underproduced 292 days or .8 years.

ALTERNATIVE PROCEDURES CONCERNING UNCONNECTED WELLS

1. Assign underproduction to a well after it is connected if the owner of the well establishes that he has been denied the opportunity to produce his just and equitable share of the gas in the pool.
2. Allocate the allowable production to connected wells based on the acreage in a proration unit committed to a connection; e.g., a well with 320 acres committed to Southern Union and 320 acres committed to Natural Gas Pipeline would receive a 320-acre allowable upon connection to Southern Union and a 640-acre allowable upon connection to Natural Gas Pipeline.
3. Allow each unconnected well to accrue underproduction based on total pool production divided by the number of unconnected wells.
4. Allow each unconnected well on a standard unit to accrue underproduction equivalent to the allowable assigned to a connected well on a standard unit.

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14-Conn. upper Penn.
15-Conn. lower Penn.

WELLS IN INDIAN BASIN AREA

Purchaser	Elev.	Upper Penn.		Morrow		Upper Penn.		Morrow		Status
		Comp. Int.	Comp. Int.	Comp. Int.	Comp. Int.	C-128	C-128	G-128	G-128	
Marathon-N. Indian Basin Unit	3874	#3K-3-21-23	7470-7596	9118-72	10-640	NP	10-640	10-640	5132	Drl.
Marathon-N. Indian Basin Unit	3893	#1M 10-21-23	7552-63		NP				6076	SI
Marathon-N. Indian Basin Unit	3794	#2G 11-21-23	7464-7548	9457-84	NP			NP	21800	Drl. SI
Ralph Lowe-Indian Basin	3824	#1K 14-21-23	7396-7450		NP				8118	SI
Robt. Enfield-W. Indian Basin	4077	#1N 17-21-23			NP					SI
Robt. Enfield-Bunnel Fed.	4089	#1J 18-21-23	7044-7296		518-574					Drl.
J. C. Williams-Std. Fed.	4064	#1G 19-21-23			NP				21000	SI
Robt. Enfield-W. Indian Hills	3901	#2G 20-21-23			520-640					Drl.
Sun-Bright Fed	3883	#1G 21-21-23	7232-7530		521-642				23000	SI
Ralph Lowe-Ind. Basin Fed A	3847	#1J 22-21-23	7505-7572	9118-9266	522-640			522-640	14250	SI
Ralph Lowe-Ind. Basin	3832	#1E 23-21-23	7376-7588	9039-9263	523-640			523-640	12100	SI
Ralph Lowe-Ind. Basin Fed. C	3856	#1F 26-21-23	7366-7416		526-640				67000	SI
Penroc-Indian Basin Fed.	3779	#1G 19-21-24	7388-7533	9226-9470	519-640			NP	11834	SI
Ralph Lowe-Indian Hills Unit	3704	#1M 21-21-24	7316-32		NP				21500	SI
Kerr McGee-Martha Creek	3722	#1J 30-21-24	7334-7444	9152-9426	530-640			530-640	17600	Drl. SI
Redfern-Winston	3905	#1K 31-21-24	7365-7670	9545-9604	531-637			531-637	6000	SI
Managan-Fepee	3849	#1D 32-21-24	T. 7360		NP				28500	SI
Std. of Texas -Bogle Flats	4035	#1G 3-22-23			53-677					Drl.
Std. of Texas -Bogle Flats	4082	#2I 4-22-23			54-679					Drl.
Atlantic-Wait Canyon	3970	#2D 4-22-24	7550-7700		NP				17600	SI
John Trigg-Fed. I.B	3932	#1D 6-22-24	7430-7554		NP				151349	SI
John Trigg-Fed. C J	3961	#1F 35-21-23	7360-7476		535-640				264879	SI
Monsanto-Lowe St.	3868	#1F 36-21-23	7520-45	9296-9555	536-640				840	SI
Curtis-Inman-Walt Canyon		#1O 3-22-24		TD 10694						Dry Hole
Northern Nat-McKittrick Hill		#1AC 23-22-24		TD 11730						Dry Hole
Superior-Cone Butte Unit		#1D 19-22-24		TD 10503				TD 7530		Dry Hole
St. of Tex-Fed. A		#1M 8-21-23								Dry Hole
Sinclair-Marathon-Fed		#1K 24-21-23								Dry Hole
Union of Calif. St.		#1J 18-21-24						TD 9755		Dry Hole
DeKalb-Fed.	3725	#1M 20-21-24		TD 9320						Dry Hole
Ralph Lowe-Staple	3690	#1K 22-21-24	T 6702	TD 9900						Dry Hole

Gas Gravity	Range	Ave.	Morrow	Range	Ave.
Gas Liquid Ratio	.635-.677	.636		.603-.614	
Liquid Gravity	16,265-501,071	125,523		43,600-530,560	
Wellhead Pressure	49.2-59.2	55.10		53-57	
	2356-2746	2304		2667-2990	