KOCH EXPLORATION COMPANY
NMOCD Case No. 8946
Exhibit No. 28 4

EFFECT OF ALLOWABLE REDUCTION ON POOL OIL PRODUCTION AND RESERVOIR WITHDRAWLS

SUMMARY	ALLOWABLE	702 BOPD		588 CU FT/BO		
OIL BY OPERATOR	4/86 OIL	6/86 OIL	% INCR	PROPOSED OIL	% INCR	
AMOCO			0.0		0.0	
DUGAN	26	138	430.8	138	430.8	
MALLON	1,699	1,619	-4.7	1,157	-31.9	
MERIDIAN	437	343	-21.5	343	-21.5	
MARRION	13		-100.0		-100.0	
MESA GRANDE	753	806	7.0	790	5.0	
MCHUGH	1,875	2,800	49.3	2,495	33.1	
MOBIL			0.0		0.0	
READING & BATES			0.0		0.0	
TOTAL GAVILAN POOL AREA	4,803	5,706	18.8	4,923	2.5	
BMG	948	1,065	12.3	750	-20.9	
TOTAL STUDY AREA	5,751	6,771	17.7	5,673	-1.3	

RB BY OPERATOR	4/86 RB	6/86 RB	% INCR	PROPOSED RB	% INCR
AMOCO			0.0		0.0
DUGAN	45	269	498.0	272	504.4
MALLON	3,253	4,107	26.2	2,787	-14.3
MERIDIAN	1,279	1,156	-9.6	1,155	-9.7
MARRION	117		-100.0		-100.0
MESA GRANDE	3,658	3,077	-15.9	2,645	-27.7
MCHUGH	4,844	7,828	61.6	6,261	29.3
MOBIL			0.0		0.0
READING & BATES			0.0		0.0
TOTAL GAVILAN POOL AREA	13,196	16,437	24.6	13,120	-0.6
BMG	1,350	2,247	66.5	1,441	6.8
TOTAL STUDY AREA	14,546	18,685	28.5	14,562	0.1

KOCH EXPLORATION COMPANY
NMOCD Case No. 8944
Exhibit No. 29

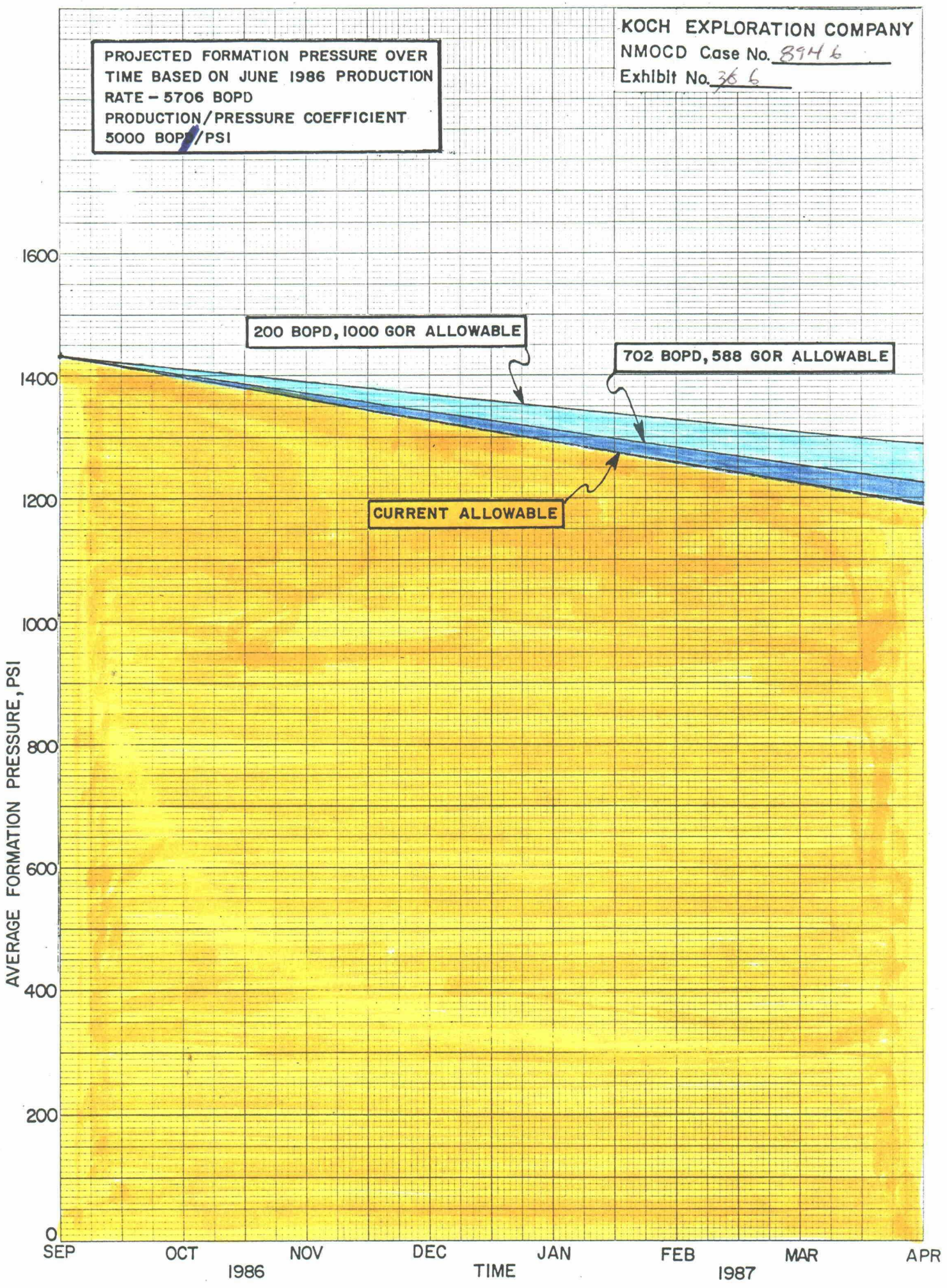
EFFECT OF ALLOWABLE REDUCTION ON POOL OIL PRODUCTION AND RESERVOIR WITHDRAWLS

SUMMARY ALLOWABLE	200 BOPD		1000 CU FT/BO		
OIL BY OPERATOR	4/86 OIL	6/86 OIL	% INCR	PROPOSED OIL	% INCR
AMOCO			0.0		0.0
DUGAN	26	138	430.8	138	430.8
MALLON	1,699	1,619	-4.7	645	-62.0
MERIDIAN	437	343	-21.5	231	-47.1
MARRION	13		-100.0		-100.0
MESA GRANDE	753	806	7.0	777	3.2
MCHUGH	1,875	2,800	49.3	1,562	-16.7
MOBIL			0.0		0.0
READING & BATES			0.0		0.0
TOTAL GAVILAN POOL AREA	4,803	5,706	18.8	3,353	-30.2
BMG	948	1,065	12.3	509	-46.3
TOTAL STUDY AREA	5,751	6,771	17.7	3,862	-32.9

RB BY OPERATOR	4/86 RB	6/86 RB	% INCR	PROPOSED RB	% INCR
AMOCO			0.0		0.0
DUGAN	45	269	498.0	272	504.4
MALLON	3,253	4,107	26.2	1,514	-53.5
MERIDIAN	1,279	1,156	-9.6	762	-40.4
MARRION	117		-100.0		-100.0
MESA GRANDE	3,658	3,077	-15.9	2,283	-37.6
MCHUGH	4,844	7,828	61.6	3,902	-19.5
MOBIL			0.0		0.0
READING & BATES			0.0		0.0
TOTAL GAVILAN POOL AREA	13,196	16,437	24.6	8,732	-33.8
BMG	1,350	2,247	66.5	914	-32.3
TOTAL STUDY AREA	14,546	18,685	28.5	9,647	-33.7

KOCH EXPLORATION COMPANY
NMOCD Case No. 8946
Exhibit No. 36

PROJECTED FORMATION PRESSURE OVER TIME BASED ON JUNE 1986 PRODUCTION RATE – 5706 BOPD
PRODUCTION/PRESSURE COEFFICIENT 5000 BOPD/PSI



KOCH EXPLORATION COMPANY
NMOCD Case No. [illegible]
Exhibit No. [illegible]

PRODUCTION CONSEQUENCES OF PROPOSED ALLOWABLE REDUCTION THREE-MONTH PERIOD BASED ON JUNE 1986 PRODUCTION

	Current Allowable	-	Applicant's Proposal	=	Immediate Loss
Oil Production, bbls.	513,540	-	301,770	=	(211,770)
Gas Production, MCF	738,990	-	386,640	=	(352,350)

KOCH EXPLORATION COMPANY
NMOCD Case No. _____
Exhibit No. _____

REVENUE CONSEQUENCES OF PROPOSED ALLOWABLE REDUCTION THREE-MONTH PERIOD BASED ON JUNE 1986 PRODUCTION

	Current Allowable	-	Applicant's Proposal	=	Immediate Loss
New Mexico Production Taxes	$ 745,113	-	$ 427,772	=	($317,341)
Working Interest Revenue	6,896,510	-	4,009,318	=	(2,887,192)
Royalty Interest Revenue	985,215	-	572,760	=	(412,455)
Total	$8,626,688		$5,009,850		($3,616,838)

Assumes: Average Royalty - 1/8
Oil Price - $15.00/BO
Gas Price - $1.25/MCF

KOCH EXPLORATION COMPANY
NMOCD Case No. 8946
Exhibit No. 38 & 39

ECONOMIC COST OF REPRESSURIZATION
THREE-MONTH PERIOD
BASED ON JUNE 1986 PRODUCTION

	Current Allowable	-	Applicant's Proposal	=	Reduction
Reservoir Voidage, bbls.	1,479,330	-	785,610	=	693,720
Gas Volume Required, MCF	831,060	-	441,360	=	389,700
Cost of Gas	$1,246,590	-	$662,040	=	$584,550

Assumes: Gas Price - $1.25/MCF
Injection Costs - $0.25/MCF
Gas Formation Volume Factor = 1.78 RB/MCF

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 8946-8950 Exhibit No. 10
Submitted by Koch
Hearing Date 8/22/86

10

Case No. 8946

KOCH EXPLORATION COMPANY

SUMMARY OF POSITION

Koch is a major owner of the production which the Application here seeks to restrict. As a major owner, Koch is as interested as anyone in assuring the greatest ultimate oil recovery from the Gavilan Pool. That is why we have participated in the owner's study which has been mentioned and why we have conducted our own independent studies.

We conclude the ultimate recovery from the Gavilan Pool will not be enhanced by further limiting oil production. Whether the reservoir drive mechanism is a secondary gas cap, as Mallon-Mesa Grande concludes, or merely solution gas, the Commission's current regulations will allow maximum recovery, at least through March 1987, without damaging the Gavilan Pool.

Conversely, the proposed production cut will drastically cut income of owners like Koch and income of royalty owners. The State of New Mexico will lose significant tax revenue. All are already suffering from perhaps the worst depression the Oil Industry has ever seen.

All that hardship is to no purpose because Gavilan will not benefit from the energy saved. Even if all the studies are completely wrong, and the reservoir would benefit from higher pressure, the drastic cut proposed would save only a meaningless few pounds of pressure.

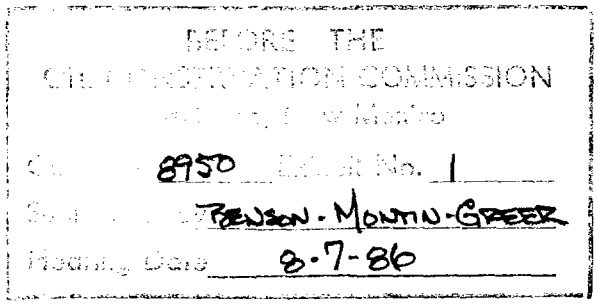
In any event, even if a few pounds should be saved, the Application would cut oil production, when free gas production is the culprit. If the Commission chooses to further limit production, the rational way to conserve reservoir energy is to conserve free gas. Therefore, we have proposed alternatively that gas production should be limited to the solution gas ratio of 588 SCF per STB with oil production still restricted by the existing depth bracket allowable to 702 BOPD.

OIL CONSERVATION DIVISION

MR. STAMETS

BENSON-MONTIN-GREER DRILLING CORP.
EXHIBITS IN CASE NO. 8950
BEFORE THE OIL CONSERVATION DIVISION OF THE
NEW MEXICO DEPARTMENT OF ENERGY AND MINERALS

AUGUST 7, 1986



BENSON-MONTIN-GREER DRILLING CORP.
EXHIBITS IN CASE NO. 8950
BEFORE THE OIL CONSERVATION DIVISION OF THE
NEW MEXICO DEPARTMENT OF ENERGY AND MINERALS

AUGUST 7, 1986

INDEX

BEFORE THE
OIL CONSERVATION DIVISION
NEW MEXICO DEPARTMENT OF ENERGY AND MINERALS

IN THE MATTER OF THE APPLICATION OF BENSON-MONTIN-GREER DRILLING CORP. FOR AMENDMENT TO THE SPECIAL RULES AND REGULATIONS OF THE WEST PUERTO CHIQUITO-MANCOS OIL POOL AS PROMULGATED BY DIVISION ORDER R-3401, AND TO ESTABLISH TEMPORARY SPECIAL PRODUCTION ALLOWABLE LIMITATIONS AND GAS-OIL RATIO LIMITATIONS, RIO ARRIBA COUNTY, NEW MEXICO.

Case 8950

APPLICATION

Comes now, BENSON-MONTIN-GREER DRILLING CORP., by and through its undersigned attorneys, and hereby applies to the New Mexico Oil Conservation Division for the establishment of a Temporary Gas-Oil Ratio limitation of not more than 1000 cubic feet of gas for each barrel of oil produced and an allowable of not more than 400 barrels of oil per day per 640-acre spacing and proration unit for the West Puerto Chiquito-Mancos Oil Pool, Rio Arriba County, New Mexico, OR IN THE ALTERNATIVE, a similar production limitation formula that will preserve reservoir energy and prevent waste, and in support thereof would show:

1. Applicant is the operator of the Canada Ojitos Unit from which oil is produced from the West Puerto Chiquito-Mancos Oil Pool, Rio Arriba County, New Mexico.

2. At the request of the applicant, the Oil Conservation Division entered Division Order R-3401 creating and adopting Special Rules and Regulations for the West Puerto Chiquito-Mancos Oil Pool (BMG West Puerto Chiquito-Mancos Pressure Maintenance

Project), Rio Arriba County, New Mexico.

3. Currently available geologic and engineering data demonstrates that the statewide GOR and allowables applied to the West Puerto Chiquito-Mancos Oil Pool are resulting in the inefficient use of the reservoir energy and are causing waste to occur.

4. That the reservoir characteristics of the subject pool justify the establishment of a temporary gas-oil limitation of 1,000 cubic feet of gas per barrel of oil and a production limitation on allowables of not more than 400 barrels of oil per day per 640-acre spacing unit.

5. That applicant believes that a gas-oil ratio of not more than 1,000 and a daily allowable of not more than 400 barrels a day per well is necessary in order to prevent waste, increase ultimate oil recovery, and to preservr reservoir energy.

6. That in order to prevent waste and protect correlative rights immediate action needs to be taken to reduce the GOR and the production rates on pool wells for a period of not less than 90 days.

WHEREFORE, applicant requests that the Division set this matter for hearing and that after notice and hearing the Division establish a temporary special 1,000 to 1 GOR and a maximum allowable of 400 barrels of oil per day per 640-acre spacing unit, for the West Puerto Chiquito-Mancos Oil Pool, OR IN THE ALTERNATIVE, a similar production limitation formula that will preserve reservoir energy and prevent waste.

Respectfully submitted,

CAMPBELL & BLACK, P.A.

By _____
William F. Carr
Post Office Box 2208
Santa Fe, New Mexico 87501
(505) 988-4421

ATTORNEYS FOR BENSON-MONTIN-GREER DRILLING CORP.

R 5 W R 4 W R 3 W R 2 W R 1 W R 1 E R 2 E R 3 E

PLAT OF PORTION OF SAN JUAN BASIN SHOWING POOLS ESTABLISHED BY NMOCD WITH PRODUCTION FROM MANCOS FORMATION

T 28 N

T 27 N

T 26 N

T 25 N

T 24 N

SPACING — * ACRES/WELL
DENSITY — ** ACRES/WELL

* AS SET BY OCD RULES
** ACTUAL DRILLED DENSITY AS OF 1-1-83

BOULDER MANCOS
SPACING - 80
DENSITY ±80

PUERTO CHIQUITO MANCOS, WEST
SPACING- 640
DENSITY- ±2500

EPCMU

WILD HORSE GALLUP

OJITO GALLUP - DAKOTA
SPACING- 40
DENSITY- ±160

NWPL APP.

LINDRITH GALLUP - DAKOTA, WEST
SPACING- 160
DENSITY- ± 160

CAÑADA OJITOS UNIT
SPACING - 640
DENSITY - ±2500

Mc HUGH APP.

PUERTO CHIQUITO MANCOS, EAST
SPACING — 160
DENSITY — ±160

B .

File 56A

October, 1983

R 5 W R 4 W R 3 W R 2 W R 1 W R 1 E R 2 E R 3 E

T 28 N

T 27 N

T 26 N

T 25 N

T 24 N

PLAT OF PORTION OF SAN JUAN BASIN SHOWING POOLS ESTABLISHED BY NMOCD WITH PRODUCTION FROM MANCOS FORMATION

BOULDER MANCOS

$\Delta P/P$: 2500-4000
INT : —
RECOMB: (1)

PUERTO CHIQUITO MANCOS, WEST

EPCMU

WILD HORSE GALLUP

OJITO GALLUP - DAKOTA

NWPL APP.

PUERTO CHIQUITO MANCOS, EAST

LINDRITH GALLUP - DAKOTA, WEST

$\Delta P/P$: —
INT : —
RECOMB.: 2500-4000

CAÑADA OJITOS UNIT

$\Delta P/P$: 1500-3000
INT. : 2000-3000
RECOMB: (2)

Mc HUGH APP.

NOTES:

(1) Gas Not Sold & Metered Reported GOR's May Not Be Sufficienty Accurate.

(2) N.A. Gas Injection Project

Reservoir Per Acre Volume Of Effective Hydrocarbon Pore Space Determined By:

$\frac{\Delta P/P}{AREA}$ Comparison Of Production/Pressure Coefficients At Different Fractions Of Undersaturated Oil.

INT. TEST By Direct Calculation Of Interference Test Data.

RECOMB. By Recombination To Initial Reservoir Conditions Of Estimated Ultimate Recovery Of Gas And Oil.

File 56A

October, 1983