INDEX OF BENSON-MONTIN EXHIBITS IN
CASE # 377
BEFORE THE NEW MEXICO OIL CONSERVATION COMMISSION
SEPTEMBER 17, 1953

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A

DATA ON PICTURED CLIFFS SAND

KUTZ CANYON - FULCHER BASIN, WEST KUTZ, AND GALLEGOS CANYON AREAS

SAN JUAN COUNTY, NEW MEXICO

scale

0 1 2 3 4

miles

5-1-52 GREER

8-1-53 Rev. W. Kutz Area

LEGEND

- PRODUCING PICTURED CLIFFS WELL
- WELL ABANDONED IN PICTURED CLIFFS
- WELL LOCATION
- AREA INFERRED TO BE NON-COMMERCIAL FOR PICTURED CLIFFS PRODUCTION

FULCHER-KUTZ FIELD

GALLEGOS CANYON UNIT

AREA NORTHWEST OF GALLEGOS CANYON UNIT WHICH IS COVERED BY THE APPLICATION.

PART OF THE WEST KUTZ FIELD WHICH IS OUTSIDE OF THE GALLEGOS CANYON UNIT.

TRACTS WITHIN AREA COVERED BY 320-ACRE SPACING, ON WHICH ARE PRODUCTIVE WELLS OWNED BY OTHER THAN GALLEGOS CANYON UNIT WORKING INTEREST OWNERS.

ROWS OF 160-ACRE SPACED WELLS FORMING "BUFFER ZONE" WHICH PREVENTS DRAINAGE FROM UNITIZED LANDS.

PRODUCING WELLS WITHIN "BUFFER ZONE".

UNDRILLED LOCATIONS WITHIN "BUFFER ZONE".

T30N

T29N

T28N

T27N

R13W

R12W

R11W

R10W

KUTZ CANYON — FULCHER BASIN

GALLEGOS CANYON UNIT

WEST KUTZ FIELD

FARMINGTON

Exhibit A

8-a

WELL NO. 32 LEASE GALLEGOS CANYON UNIT
OPERATOR BENSON-MONTIN

WELL DRILLING AND COMPLETION HISTORY

DATE		REMARKS
		(Top of Pictured Cliffs 1377'. 7" casing cemented at 1381').
8- 7-53	2:00 AM	TD 1383'. Flowing (15.9"/1") 118 MCF/day. 4-hour bailing test showed no water.
	5:00 AM	TD 1390'. Flowing (2.9"/2") 203 MCF/day. Sand is exceptionally hard.
	8:00 AM	TD 1395'. Flowing (14"/2") 442 MCF/day.
	9:00 AM	TD 1400'. Flowing (23.5"/2") 572 MCF/day.
	10:00 AM	TD 1405'. Flowing (32.4"/2") 672 MCF/day.
	2:00 PM	TD 1405'. Flowing (32.4"/2") 672 MCF/day. 4-hour bailing test showed no water.
	4:00 PM	TD 1410'. Flowing (7.4"/3") 720 MCF/day.
	6:00 PM	TD 1415'. Flowing (8.9"/3") 790 MCF/day.
	8:00 PM	TD 1420'. Flowing (7.5"/3") 725 MCF/day.
	11:00 PM	TD 1425'. Flowing (6.5"/3") NG. Apparently erratic reading.
8- 8-53	3:00 AM	TD 1425'. Flowing (7.4"/3") 720 MCF/day. 4-hour bailing test showed 4 gal. SW/hour.
	5:00 AM	TD 1425'. Flowing (7.0"/3") 701 MCF/day. 2-hour bailing test showed 4 gal. SW/hour. Preparing to kill well.
	3:00 PM	Killed well. Corrected TD 1419'. Plugged back to 1409' with hydromite, and from 1409' to 1407' with gravel.
	7:00 PM	Loaded 40 quarts SNG from 1389' to 1407'. Tamped with 4' gravel and 50' calseal in casing.
8- 9-53	8:00 AM	Waiting on shot.
	4:00 PM	Shot went off. Commenced drilling calseal.
8-10-53	5:00 AM	Drilled through tamp to 1405' and unloaded hole.
	6:00 AM	Flowing (24.5"/4") 2,335 MCF/day and light spray of water.
	8:00 AM	Flowing (14.6"/4") 1,785 MCF/day.
	9:00 AM	Flowing (12.9"/4") 1,690 MCF/day.
	11:00 AM	Flowing (12.0"/4") 1,620 MCF/day.
	Midnight	Flowing (7.3"/4") 1,275 MCF/day and no water.

FORM AG-2

7 (a)

B-4

WELL NO. 39 LEASE GALLEGOS CANYON UNIT
OPERATOR BENSON-MONTIN

WELL DRILLING AND COMPLETION HISTORY

DATE		REMARKS
		(Top of Pictured Cliffs 1263'. 5-1/2" casing cemented at 1269').
7-22-53	6:00 AM	Drilling cement at 1220'.
	1:00 PM	TD 1270'. Drilled cement and 1' of sand. Started water test.
	5:00 PM	TD 1270'. 4-hour bailing test showed no water. Flowing (2.4"/1") 43 MCF/day.
	10:00 PM	TD 1280'. Flowing (4.4"/2") 247 MCF/day.
	Midnight	TD 1285'. Flowing (8.3"/2") 340 MCF/day.
7-23-53	2:00 AM	TD 1290'. Flowing (8.3"/2") 340 MCF/day.
	6:00 AM	TD 1290'. Flowing (8.0"/2") 333 MCF/day. 4-hour bailing test showed no water.
	12 Noon	TD 1295'. Flowing (21"/2") 542 MCF/day.
	5:00 PM	TD 1300'. Flowing (18.7"/2") 513 MCF/day.
	10:00 PM	TD 1310'. Flowing (21.2"/2") 544 MCF/day.
7-24-53	2:00 AM	TD 1310'. Flowing (16.6"/2") 483 MCF/day. 4-hour bailing test showed 1-1/4 gal. SW/hour.
	6:00 AM	TD 1310'. Flowing (16"/2") 473 MCF/day. 4-hour bailing test showed 2-1/2 gal. SW/hour. Preparing to plug back and shoot.
	7:00 PM	TD 1310'. Plugged back to 1300' with hydromite. Plugged back 1300' to 1295' with gravel. Loaded 45 quarts SNG from 1276-1295. Tamped with 3' gravel and 50' calseal in casing.
7-25-53	8:00 AM	Waiting on shot.
	3:00 PM	Shot went off.
	10:00 PM	Drilled through tamp and unloaded hole.
	11:00 PM	Flowing (8.4"/3") 770 MCF/day.
7-26-53	6:00 AM	Cleaning out at 1290'. Making no water. Bridging badly. Flowing (7.3"/3") 713 MCF/day.
7-27-53	6:00 AM	Cleaned out to 1295'. Making no water. Flowing (6.7"/3") 685 MCF/day. Preparing to run tubing.

B-9

WELL NO. 17 LEASE GALLEGOS CANYON UNIT

OPERATOR BENSON-MONTIN

WELL DRILLING AND COMPLETION HISTORY

DATE		REMARKS
		Top of Pictured Cliffs 1395'. 5-1/2" casing cemented at 1402'.
7-30-52	8:00 AM	TD 1410'. At 1405' took 2-hour bailing test. No water. Slight show of gas at 1405'.
	1:30 PM	TD 1415'. Measured 26"/1" (150 MCF)
	7:00 PM	TD 1425'. Measured 8.6"/2" (345 MCF).
		2-hour bailing test showed no water.
7-31-52	2:00 AM	TD 1435'. Measured 22" Wtr/2" (550 MCF)
	9:00 AM	TD 1445'. Measured 2.2" Wtr/5" (1,100 MCF)
		1450'. Measured 4.0" Wtr/5" (1,470 MCF)
		1455'. Measured 6.0" Wtr/5" (1,800 MCF)
	3:00 PM	TD 1458'. Measured 7.9" Wtr/5" (2,080 MCF)
	4:30 PM	TD 1460'. Measured 7.9" Wtr/5" (2,080 MCF)
8- 1-52	8:00 AM	TD 1460'. Measured 6.9" Wtr/5" (1,910 MCF).

FORM AG-2

GROSS PAY SECTION OF PRODUCTIVE WELLS DRILLED TO THE PICTURED CLIFFS SAND IN THE GALLEGOS CANYON UNIT AS OF SEPTEMBER 15, 1953

Gross Pay Section was determined for wells drilled in with cable tools as total interval from top of Pictured Cliffs Sand to base of last gas increase. Wells marked with single asterisk were cored with rotary tools. Pay section of these wells is determined from core data and electric logs.

WELL		GROSS PAY SECTION (Feet)	REMARKS
Gallegos Canyon Unit	#1	20	
	#3	23 *	
	#4	64 *	
	#5	45 *	
	#6	40	
	#7	30 *	
	#9	41	16' from 1234-1250' and 25' from 1280-1305'.
	#10	50	
	#11	40	
	#12	50	
	#13	45	
	#14	40	
	#15	32	
	#16	40	
	#17	64	
	#18	45	
	#19	60	
	#20	40	
	#21	40	
	#22	40	
	#23	30	
	#24	61	
	#25	26	
	#28	34	
	#30	50	
	#31	30	
	#32	33	
	#33	46	
	#34	45	
	#35	66	
	#36	47	
	#37	35	
	#38	30	
	#39	29	
	#40	56	
	#41	25	

Exhibit C

(C)

WELL		GROSS PAY SECTION (Feet)	REMARKS
Lilly	#1	40	
	#2	31	
	#3	50	
	#4	76	
Payne	#1	42	
	#2	48	
	#5	40	
	#6	61	41' from 1619-1655 and 20' from 1675-1695.
	#7	40	
	#8	30	
Rhodes	#2	47	
	#3	52	

Arithmetical average of above 48 wells is 42.7' (41.5' for original Gallegos Canyon Unit wells and 46.5' for Rhodes, Payne and Lilly Leases which became part of unit effective 7-1-53).

Exhibit C

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

(D)
-1-

September 14, 1953

Benson & Montin
315-1/2 West Main
Farmington, New Mexico

Attention: Mr. Albert R. Greer

Subject: Core Analysis
Gallegos Canyon Units No. 27, 35, 41
San Juan County, New Mexico
Our File No. PR-5348

Gentlemen:

We submit herewith results of core analysis measurements on cores from the Pictured Cliffs formation of subject wells.

Rotary cores were obtained from wells No. 27 and No. 41, using water base mud. Cable tool cores were obtained from well No. 35, using oil as drilling fluid. In the latter case the hole was entirely loaded with oil, and no gas flowed from the well during coring.

The cores were quick-frozen and shipped to our Dallas laboratories, where the analysis was made using special methods in order primarily to obtain a very accurate measurement of water content; further, only a small quantity of core fragments were obtained from well No. 35 so that conventional methods could not be used. The Dean-Stark method was used for determination of fluid contents, refluxing the sample in xylene to obtain a direct measurement of water content, and determining oil by the net weight loss of the sample upon subsequent drying. Porosity was obtained by evacuating and saturating the sample with carbon tetrachloride, and permeability by drying and mounting the sample, or the largest piece thereof. Chlorides were determined by crushing a separate portion of sample and titrating with silver nitrate.

The results of the analysis are tabulated on the attached pages. On well No. 35, where the sample of core represented several feet of interval

and the size of the sample permitted, several separate portions were taken for analysis as per instructions, in order to obtain more representative data.

It is noted that the average chloride content for the samples from well No. 35 was 36,000 parts of chloride ion per million parts of core water. Variations in individual values are due at least in part to the necessity of assigning to the measured chloride a core water content determined on a separate portion. Chlorides measured on well No. 41 were in general lower, indicating flushing of the core with drill water. The relatively high measured oil saturations in the core from well No. 35 would seem to indicate a relatively efficient displacement of reservoir gas with dead oil from the drilling fluid.

We are pleased to be of service and trust that the data here presented will be useful in the further evaluation of this reservoir.

Very truly yours,

Core Laboratories, Inc.

Frank C. Kelton

Frank C. Kelton,
Manager of Research

FCK:ma

30cc. - Addressee
2cc. - Mr. Justin Reid
Seth and Montgomery
Santa Fe, New Mexico

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS

Co ny Benson & Montin — Date Report September 14, 1953 — Page 1 of 3
Well Gallegos Canyon Units No. 27, 35, 41 — Cores Rotary — File PR-5348
Field — Formation Pictured Cliffs — Analysts
County San Juan State New Mexico — Elevation — Coregraph
Location — Remarks Water base drilling mud in Unit No. 27

CORE ANALYSIS AND INTERPRETATION

(Figures in parentheses refer to footnote remarks)

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS	POROSITY PER CENT	RESIDUAL LIQUID SATURATION % PORE SPACE		PROBABLE PRODUCTION	Chloride ppm.
				OIL	TOTAL WATER		
Gallegos Canyon Unit No. 27							
	1290	11	14.6	0.0	100		30,800

NOTE:
(*) REFER TO ATTACHED LETTER.
(1) INCOMPLETE CORE RECOVERY—INTERPRETATION RESERVED.
(2) OFF LOCATION ANALYSES—NO INTERPRETATION OF RESULTS.

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS

(D)
-A-

Company Benson & Montin — Date Report September 14, 1953 — Page 2 of 3
Well Gallegos Canyon Units No. 27, 35, 41 — Cores Cable Tool — File PR-5348
Field — Formation Pictured Cliffs — Analysts
County San Juan State New Mexico — Elevation — Coregraph
Location — Remarks Oil used as drilling fluid in Unit No. 35

CORE ANALYSIS AND INTERPRETATION

(Figures in parentheses refer to footnote remarks)

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS	POROSITY PER CENT	RESIDUAL LIQUID SATURATION % PORE SPACE		PROBABLE PRODUCTION	Chloride ppm.
				OIL	TOTAL WATER		
	Gallegos Canyon Unit No. 35						
	1377-1382	6.1	19.7	47.4	44.8		35,800
	1382-1384	7.8	18.5	34.9	64.4		29,600
	1384-1385	24	21.1	19.3	68.5		10,200
	1385-1388	48*	19.3	17.8	70.2		14,100
	1392-1395	0.0	6.5	33.4	66.6		
	1392-1395	0.1	7.8	13.8	86.2		
	1392-1395	0.1	6.6	21.6	78.4		40,600
	1392-1395	1.7	5.0	23.5	76.5		
	1392-1395	2.0	6.6	15.7	84.3		
	1395-1400	49*	17.4	37.3	62.7		29,700
	1395-1400	12	20.2	57.3	42.7		
	1400-1404	0.0	10.5	51.1	48.9		52,600
	1400-1404	21	20.5	60.3	33.2		37,800
	1400-1404	51*	21.5	48.4	33.9		38,300
	1400-1404	12	22.5	50.4	33.6		38,100
	1404-1405	0.0	7.1	25.9	43.1		61,000
	1405-1410	10	17.4	4.5	95.5		25,600
	1405-1410	1.1	21.0	29.9	70.1		31,600
	1405-1410	0.4	17.9	6.3	93.7		29,400
	1405-1410	3.7	18.7	21.6	69.8		35,500
	1405-1410	0.9	16.4	0.0	94.9		30,400
	1410-1415	0.0	6.9	46.1	53.9		53,600
	1410-1415	0.0	7.1	32.3	67.7		43,400
	1410-1415	-	7.5	25.9	74.1		37,300
	1410-1415	0.1	5.6	21.5	78.5		47,900
	1410-1415	21*	8.7	24.3	75.7		32,600

* Permeability sample showed slight fracture.

NOTE:
(*) REFER TO ATTACHED LETTER.
(1) INCOMPLETE CORE RECOVERY—INTERPRETATION RESERVED.
(2) OFF LOCATION ANALYSES—NO INTERPRETATION OF RESULTS.

(D)
-5-

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS

Company Benson & Montin — Date Report September 14, 1953 — Page 3 of 3
Well Gallegos Canyon Units No. 27, 35, 41 — Cores Rotary — File PR-5348
Field — Formation Pictured Cliffs — Analysts
County San Juan — State New Mexico — Elevation — Coregraph
Location — Remarks Water base drilling mud in Unit No. 41

CORE ANALYSIS AND INTERPRETATION

(Figures in parentheses refer to footnote remarks)

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS	POROSITY PER CENT	RESIDUAL LIQUID SATURATION % PORE SPACE		PROBABLE PRODUCTION	Chloride ppm.
				OIL	TOTAL WATER		
	Gallegos Canyon Unit No. 41						
	1255	2.9	19.1	0.0	80.1		5,200
	1301	49*	9.9	0.0	100.0		5,700
	1302	49	17.7	0.0	50.8		5,500
	1303	58*	18.7	0.0	19.1		15,200
	1304	14	16.9	0.0	61.5		13,700
	1305	14	17.6	0.0	46.7		19,900
	1306	1.9	17.6	0.0	24.8		29,500
	1358	0.9	18.0	0.0	48.2		35,000
	1360	4.3	11.4	0.0	75.3		23,100
	1361	5.4	18.0	0.0	18.9		-
	1363	5.3	18.8	0.0	38.7		34,100
	1366	0.0	6.0	0.0	100.0		21,800

* Permeability sample showed slight fracture.

Core Laboratories, Inc.

Frank C. Kelton

Frank C. Kelton

NOTE:
(*) REFER TO ATTACHED LETTER.
(1) INCOMPLETE CORE RECOVERY—INTERPRETATION RESERVED.
(2) OFF LOCATION ANALYSES—NO INTERPRETATION OF RESULTS.

SUMMARY OF RESERVOIR CHARACTERISTICS AND RECOVERABLE RESERVES FOR GALLEGOS CANYON UNIT PICTURED CLIFFS FORMATION

(Taken from Benson-Montin Exhibits #4, #5, #8 and #9 in New Mexico Oil Conservation Commission Case #377, heard June 19, 1952)

INITIAL RESERVOIR PRESSURE	465 psig (well head) 496 psia (reservoir)
FINAL ABANDONMENT PRESSURE	150 psig (reservoir) 162 psia (reservoir)
AVERAGE POROSITY	18.0%
AVERAGE INTERSTITIAL WATER	50.1%
GAS DEVIATION FACTOR AT 496 psia	.904
GAS DEVIATION FACTOR AT 272 psia	.946
GAS DEVIATION FACTOR AT 162 psia	.968
RESERVOIR TEMPERATURE	80°F
AVERAGE PAY THICKNESS	40.5'

VOLUME OF GAS IN PLACE (at 15.025 psia P.B. and 60°F)

$$\frac{(43{,}560)\ (520)\ (496)\ (9.0)}{(15.025)\ (540)\ (.904)} = 137 \text{ MCF/acre-foot.}$$

VOLUME OF GAS RECOVERABLE TO 150 psig RESERVOIR ABANDONMENT PRESSURE

$$\frac{\left(\frac{496}{.904} - \frac{162}{.968}\right)}{\left(\frac{496}{.904}\right)} (137) = (.695)\ (137) = 95.5 \text{ MCF/acre-foot.}$$

VOLUME OF GAS RECOVERABLE TO 250 psig LINE PRESSURE

$$(137)\frac{\left(\frac{496}{.904} - \frac{272}{.946}\right)}{\left(\frac{496}{.904}\right)} = (.467)\ (137) = 65.2 \text{ MCF/acre-foot.}$$

Exhibit E

RESERVES BASED ON 40.5' OF SAND

(a)	GAS IN PLACE	5,550 MCF/acre.
(b)	GAS RECOVERABLE TO 150 psig RESERVOIR PRESSURE	3,870 MCF/acre.
(c)	GAS RECOVERABLE TO 250 psig LINE PRESSURE	2,640 MCF/acre.

(F-a)

PRODUCTION HISTORY OF SIX ADJOINING WELLS IN THE WEST KUTZ FIELD HAVING AN INITIAL PRODUCTION RATE INTO PIPE LINE OF APPROXIMATELY 550 MCF/WELL/DAY

(MARCH, 1952, FIRST MONTH OF PRODUCTION FOR ALL SIX WELLS)
(FRONTIER #11, 12, 13, 14 BOLACK & #10 & 12 SCHWERDTFEGER)
(W/2 OF SECTION 15 & ALL SECTION 16, TWP. 27N, RGE. 11W)

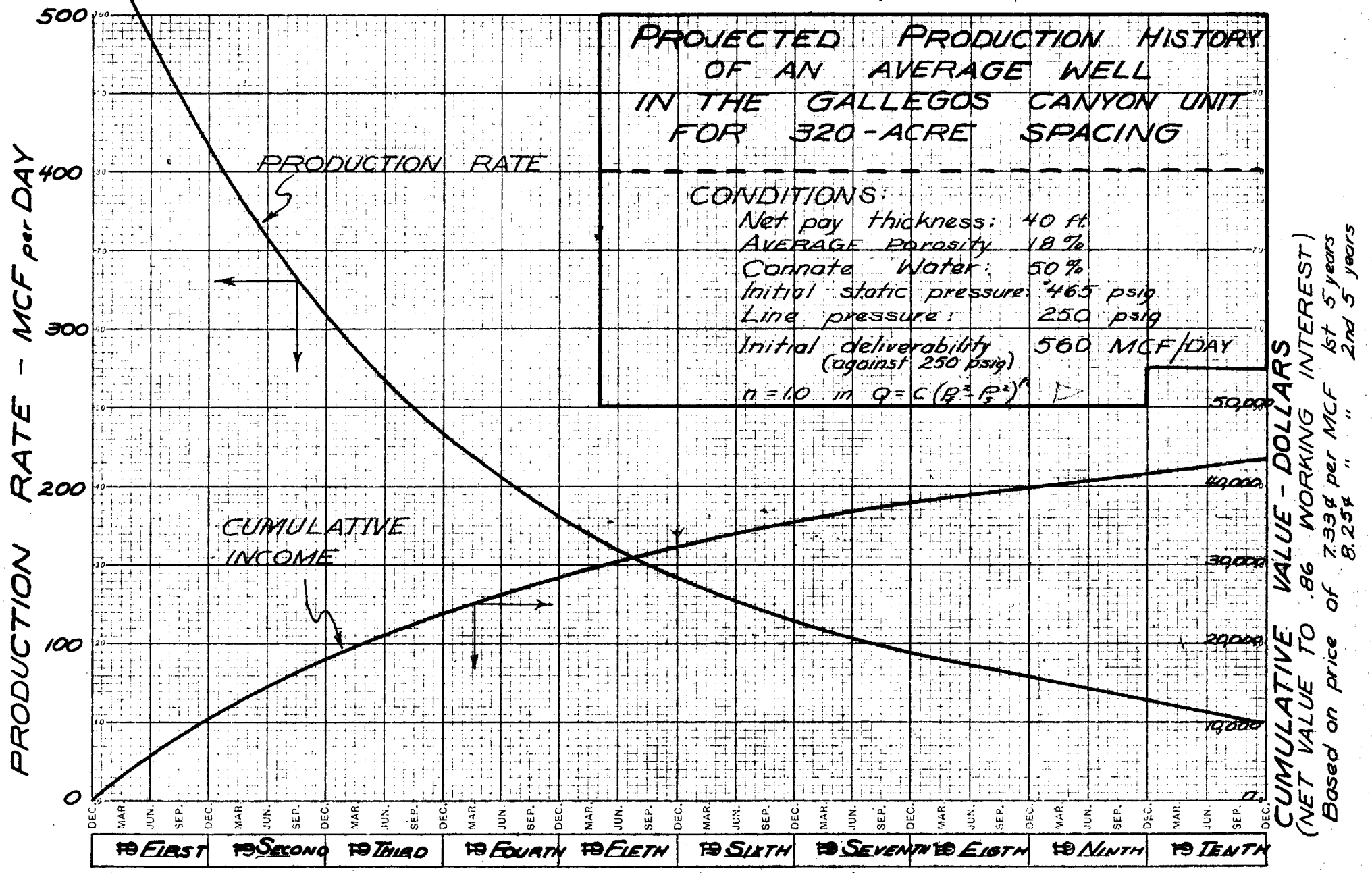
1952	TOTAL PRODUCTION MCF/MONTH	NO. WELLS	DAILY AVERAGE PRODUCTION RATE PER WELL (MCF)
JANUARY	46,940	3	505
FEBRUARY	102,929	5	710
MARCH	96,966	6	520
APRIL	100,207	6	555
MAY	102,511	6	548
JUNE	92,343	6	513
JULY	89,813	6	483
AUGUST	81,516	6	438
SEPTEMBER	71,135	6	395
OCTOBER	65,677	6	354
NOVEMBER	51,471	6	285
DECEMBER	59,907	6	322
1953			
JANUARY	57,137	6	307
FEBRUARY	44,025	6	262
MARCH	48,717	6	262
APRIL	41,977	6	232
MAY	54,967	6	295
JUNE	47,801	6	258

Exhibit F(a)

15

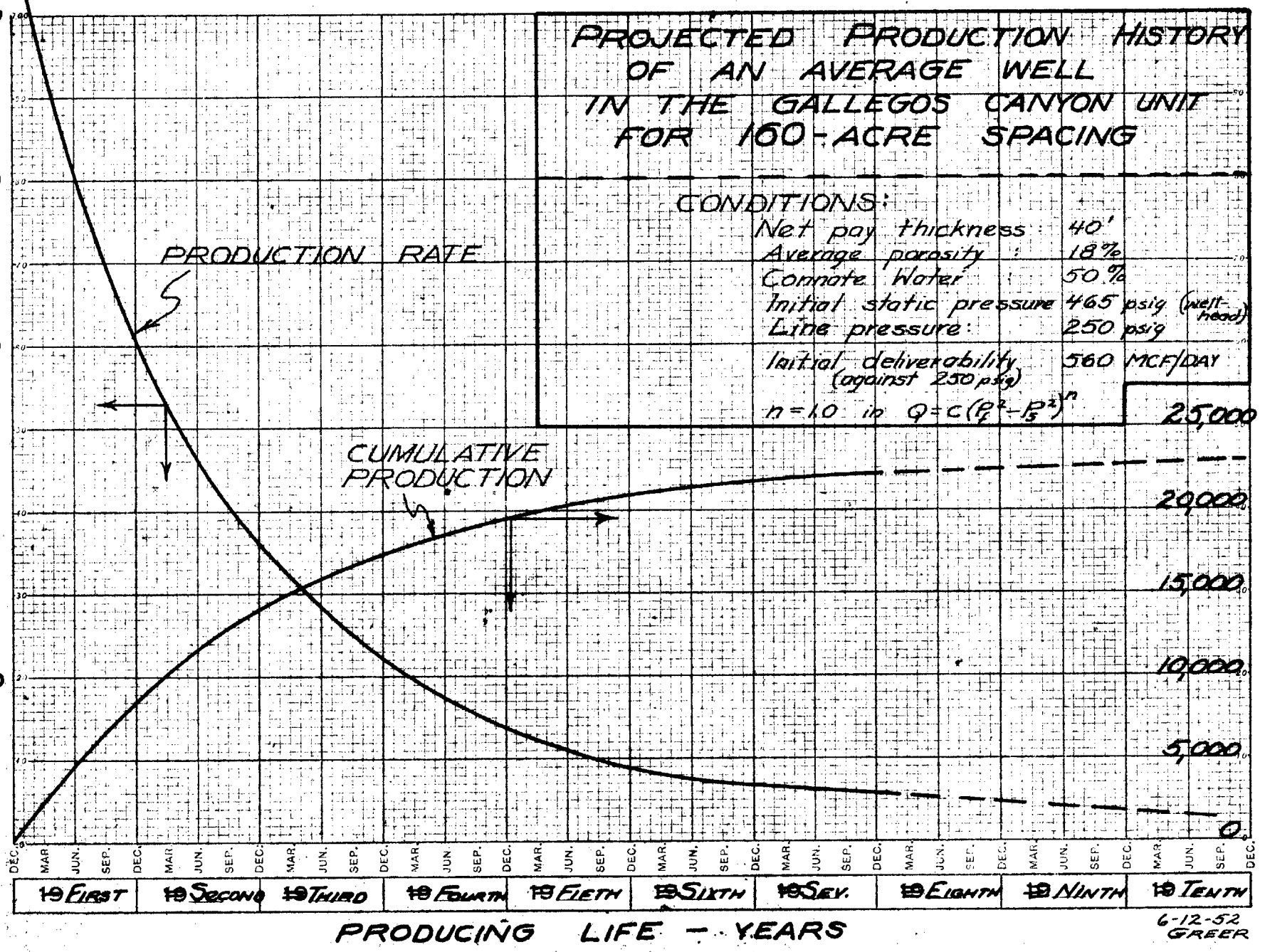
Ex. 15
Case 377

43,000 40,000 - 8
45,000 - 4

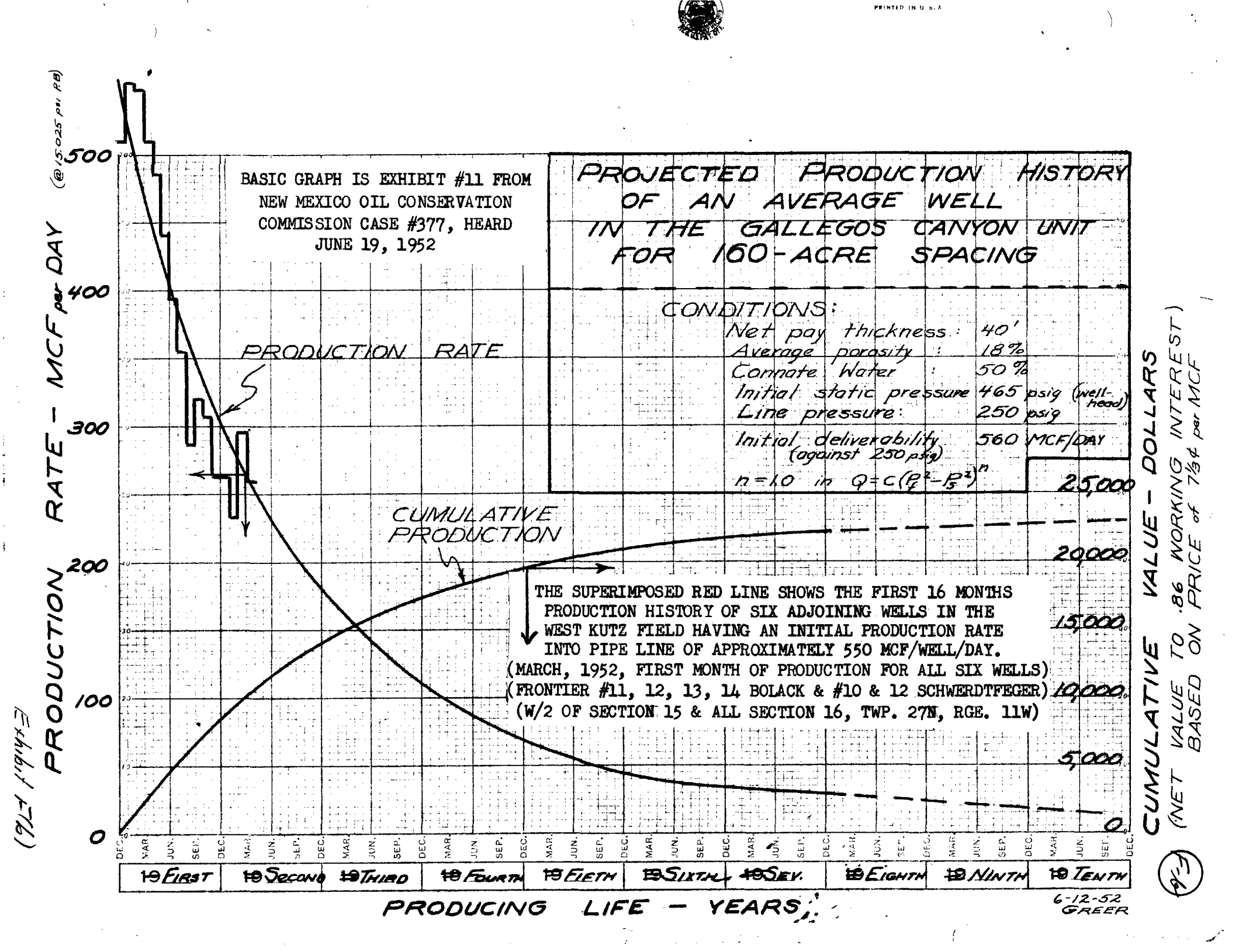


6-18-52
GREER

Ex. 11 - Case 377



6-12-52
GREER


PRINTED IN U.S.A.
(@15.025 psi, RB)
PRODUCTION RATE - MCF per DAY
500
400
300
200
100
0
BASIC GRAPH IS EXHIBIT #11 FROM NEW MEXICO OIL CONSERVATION COMMISSION CASE #377, HEARD JUNE 19, 1952
PROJECTED PRODUCTION HISTORY OF AN AVERAGE WELL IN THE GALLEGOS CANYON UNIT FOR 160-ACRE SPACING
CONDITIONS:
Net pay thickness: 40'
Average porosity: 18%
Connate Water: 50%
Initial static pressure 465 psig (well-head)
Line pressure: 250 psig
Initial deliverability (against 250 psig) 560 MCF/DAY
n = 1.0 in $Q = C(P_t^2 - P_s^2)^n$
PRODUCTION RATE
CUMULATIVE PRODUCTION
THE SUPERIMPOSED RED LINE SHOWS THE FIRST 16 MONTHS PRODUCTION HISTORY OF SIX ADJOINING WELLS IN THE WEST KUTZ FIELD HAVING AN INITIAL PRODUCTION RATE INTO PIPE LINE OF APPROXIMATELY 550 MCF/WELL/DAY.
(MARCH, 1952, FIRST MONTH OF PRODUCTION FOR ALL SIX WELLS)
(FRONTIER #11, 12, 13, 14 BOLACK & #10 & 12 SCHWERDTFEGER)
(W/2 OF SECTION 15 & ALL SECTION 16, TWP. 27N, RGE. 11W)
25,000
20,000
15,000
10,000
5,000
0
DEC. MAR. JUN. SEP.
1ST 2ND 3RD 4TH 5TH 6TH 7TH 8TH 9TH 10TH
PRODUCING LIFE - YEARS
6-12-52 GREER
CUMULATIVE VALUE - DOLLARS
(NET VALUE TO .86 WORKING INTEREST)
BASED ON PRICE of 7⅓¢ per MCF
EXHIBIT #14
(9-4)

BENSON-MONTIN
INTERFERENCE TEST NO. 1
GALLEGOS CANYON AREA
SAN JUAN COUNTY, NEW MEXICO
PICTURED CLIFFS FORMATION

DATE OF TEST: May, June, July, 1952

AREA OF TEST:

Description	Approximate Area
All Section 33, Twp. 28N, Rge. 12W	640 acres
" Section 34, Twp. 28N, Rge. 12W	640 "
" Section 35, Twp. 28N, Rge. 12W	640 "
" Section 2, Twp. 27N, Rge. 12W	640 "
" Section 3, Twp. 27N, Rge. 12W	640 "
" Section 4, Twp. 27N, Rge. 12W	640 "
" Section 9, Twp. 27N, Rge. 12W	640 "
" Section 10, Twp. 27N, Rge. 12W	640 "
" Section 11, Twp. 27N, Rge. 12W	640 "
TOTAL	5,760 acres

PRODUCING WELLS WITHIN TEST AREA:

Well	Location	Date of First Production into pipe line
Benson-Montin #4 G.C.U.	NE/4 Sec. 34, T-28N, R-12W	February, 1952
Danube #1 Harmon	SW/4 Sec. 2, T-27N, R-12W	February, 1952
Danube #2 Harmon	NW/4 Sec. 2, T-27N, R-12W	February, 1952
Danube #1 Thompson	NE/4 Sec. 2, T-27N, R-12W	February, 1952
Danube #2 Thompson	SE/4 Sec. 2, T-27N, R-12W	February, 1952
Danube #3 Thompson	SE/4 Sec. 3, T-27N, R-12W	February, 1952
Danube #5 Thompson	NW/4 Sec. 3, T-27N, R-12W	May, 1952
Danube #7 Thompson	SW/4 Sec. 3, T-27N, R-12W	February, 1952
Hancock #4 Edgar	NE/4 Sec. 11, T-27N, R-12W	November, 1951
Hancock #6 Edgar	NW/4 Sec. 11, T-27N, R-12W	January, 1952

(F-6)

SHUT-IN WELL WITHIN TEST AREA:

Well: J. D. Hancock #11 Hancock

Location: 1575' FNL, 1650' FEL, Sec. 3, T-27N, R-11W

DISTANCES FROM NEAREST WELLS:

Well	Distance from #11 Hancock
Danube #3 Thompson	2,160 feet 2/4
Danube #5 Thompson	2,700 "
Danube #2 Harmon	3,300 "

Exh. K

G-c

INTERFERENCE TEST OF
HANCOCK #11 HANCOCK
NE/4 SEC. 3, TWP. 27N, RGE. 12W
WEST KUTZ FIELD, SAN JUAN COUNTY, NEW MEXICO

SHOWING

RECORD OF WELL-HEAD PRESSURES

MEASUREMENT NO.	DATE	TIME	TUBING-HEAD PRESSURE (psig)	DAYS SHUT IN	TYPE PRESSURE GAUGE	REMARKS
1	5-17-52	-	-	0		Shut in.
2	5-23-52	-	434	6	S.U.G. Dead-Weight	3-hour state potential test taken by Southern Union Gas Co.
3	5-26-52	7:30 PM	444	9	B & M Spring Gauge	
4	6- 3-52	2:00 PM	443	17	B & M Spring Gauge	Well has apparently reached maximum pressure.
5			446½		EPNG Dead-weight Gauge	Spring gauge is 3½# in error.
6	6- 7-52	7:30 PM	446½	21	EPNG Dead-Weight Gauge	Well blown through tubing in morning by Hancock personnel to check for water. No water in hole.
7	6- 8-52	1:00 PM	446½	22	"	
8	6-11-52	10:00 PM	446½	25	"	
9	6-25-52	12:30 PM	445-3/4	39	"	
10	7- 2-52	9:00 PM	445	46	"	
11	7- 5-52	4:30 PM	444½	49	"	
12	7-11-52	12:00 N	444.2	55	"	
13			444.5		B & M Dead Weight Gauge	0.3# difference in B & M gauge and EPNG gauge.

G.- (c)

5-d

INTERFERENCE TEST OF
HANCOCK #11 HANCOCK

(CONTINUED)

NOTE: To eliminate possible measurement error between different gauges, measurements 5 through 12 were taken with the same dead weight gauge, borrowed from El Paso Natural Gas Company. Smallest weight was 1#. Readings reported to nearest one-fourth and one-half pound were estimated.

For measurement #12, 1/10# weights from Benson-Montin's dead weight gauge were used and reading of 444.2# was determined to nearest 1/10# for that gauge. Difference in Benson-Montin and El Paso Natural Gas Company dead weight gauges was 3/10#.

G-2

DATA ON PICTURED CLIFFS SAND

KUTZ CANYON - FULCHER BASIN, WEST KUTZ, AND GALLEGOS CANYON AREAS

SAN JUAN COUNTY, NEW MEXICO

scale

0 1 2 3 4

miles

5-1-52 GREER
8-1-53 Rev. W. Kutz Area

LEGEND

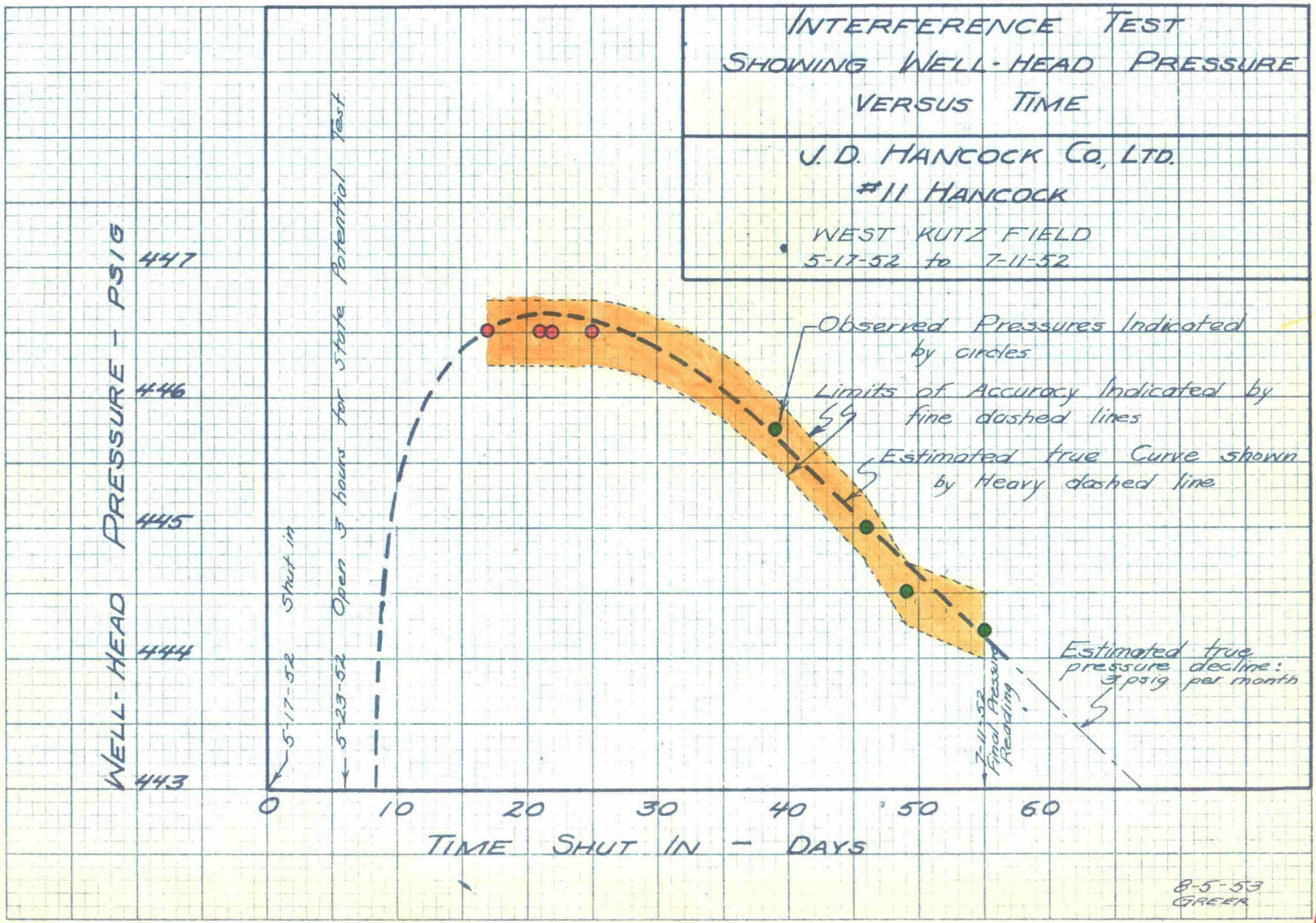
- PRODUCING PICTURED CLIFFS WELL
- WELL ABANDONED IN PICTURED CLIFFS
- WELL LOCATION
- AREA INFERRED TO BE NON-COMMERCIAL FOR PICTURED CLIFFS PRODUCTION

LEGEND REGARDING INTERFERENCE TEST

- AREA COVERED BY TEST.
- SUBJECT SHUT-IN WELL.
- WELLS PRODUCING DURING PERIOD OF TEST. (ALL OTHER WELLS SHOWN IN TEST AREA WERE NOT COMPLETED AS OF TIME OF INTERFERENCE TEST.

T30N
T29N
T28N
T27N
R13W
R12W
R11W
R10W
FARMINGTON
KUTZ CANYON — FULCHER BASIN GAS FIELD
GALLEGOS CANYON UNIT
WEST KUTZ FIELD

(G-2)



H-a

BENSON-MONTIN
INTERFERENCE TEST NO. 2
GALLEGOS CANYON AREA
SAN JUAN COUNTY, NEW MEXICO
PICTURED CLIFFS FORMATION

DATE OF TEST: July 1952 to March 1953.

AREA OF TEST:

Description	Approximate Area
All Section 15, Twp. 28N, Rge. 12W	640 acres
" Section 16, Twp. 28N, Rge. 12W	640 "
" Section 17, Twp. 28N, Rge. 12W	640 "
" Section 20, Twp. 28N, Rge. 12W	640 "
" Section 21, Twp. 28N, Rge. 12W	640 "
" Section 22, Twp. 28N, Rge. 12W	640 "
" Section 27, Twp. 28N, Rge. 12W	640 "
" Section 28, Twp. 28N, Rge. 12W	640 "
" Section 29, Twp. 28N, Rge. 12W	640 "
TOTAL	5,760 acres

PRODUCING WELLS WITHIN TEST AREA:

Well	Location (T-28N, R-12W)	Date of First Production into pipe line
#6 Gallegos Canyon Unit	SW/4 Sec. 22	February, 1952
#16 Gallegos Canyon Unit	NE/4 Sec. 27	September, 1952
#17 Gallegos Canyon Unit	NE/4 Sec. 28	September, 1952

SHUT-IN WELL WITHIN TEST AREA:

Well	Location	Nearest Producing Well	Distance to Nearest Producing Well
#18 Gallegos Canyon Unit	NE/4 Sec. 21 T-28N, R-12W	#6 G.C.U.	3,050 feet

H-6

INTERFERENCE TEST OF
BENSON-MONTIN'S #18 GALLEGOS CANYON UNIT
NE/4 SECTION 21, TWP. 28N, RGE. 12W
SAN JUAN COUNTY, NEW MEXICO
SHOWING
RECORD OF WELL-HEAD PRESSURES

MEASUREMENT NO.	DATE	TIME	CASINGHEAD PRESSURE (psig)	DAYS SHUT IN	REMARKS
1	7-27-52	6:30 PM	-	0	Shut in.
2	7-31-52	10:00 AM	450	3½	B & M Spring Gauge.
3	8- 5-52	6:00 PM	459.6	9	B & M Dead Weight Gauge.
4	8- 9-52	1:00 PM	460.9	13	"
5	8-21-52	12:00 Noon	462.7	25	"
6	9-21-52	4:00 PM	462.8	56	"
7	10-28-52	12:00 Noon	461.8	93	"
8	12-11-52	3:30 PM	460.5	137	"
9	1-22-53	4:00 PM	459.2	179	"
10	2-12-53	4:00 PM	458.4	200	"
11	3- 5-53	3:30 PM	457.7	221	"
12	3-28-53	11:00 AM	457.0	244	"

NOTE: Measurements #3 through #12 were made with Benson-Montin's dead weight gauge, which has a sensitivity of 1/10#.

After being shut in 7-27-52, the well was not opened until after Measurement #12 on 3-28-53, at which time it was blown through the tubing for 5 minutes to determine if there was any fluid in the hole. The well was absolutely dry.

State Potential Test was taken 4-3-53.

Ex H 16

DATA ON PICTURED CLIFFS SAND

H-6

KUTZ CANYON - FULCHER BASIN, WEST KUTZ, AND GALLEGOS CANYON AREAS

SAN JUAN COUNTY, NEW MEXICO

scale

0 1 2 3 4

miles

5-1-52 GREER
8-1-53 Rev. W. Kutz Area

LEGEND

- PRODUCING PICTURED CLIFFS WELL
- WELL ABANDONED IN PICTURED CLIFFS
- WELL LOCATION
- AREA INFERRED TO BE NON-COMMERCIAL FOR PICTURED CLIFFS PRODUCTION

LEGEND REGARDING INTERFERENCE TEST

- AREA COVERED BY TEST.
- SUBJECT SHUT-IN WELL.
- WELLS PRODUCING DURING PERIOD OF TEST. (ALL OTHER WELLS SHOWN IN TEST AREA WERE NOT PRODUCING AS OF TIME OF INTERFERENCE TEST.)

T30N

T29N

T28N

T27N

R13W

R12W

R11W

R10W

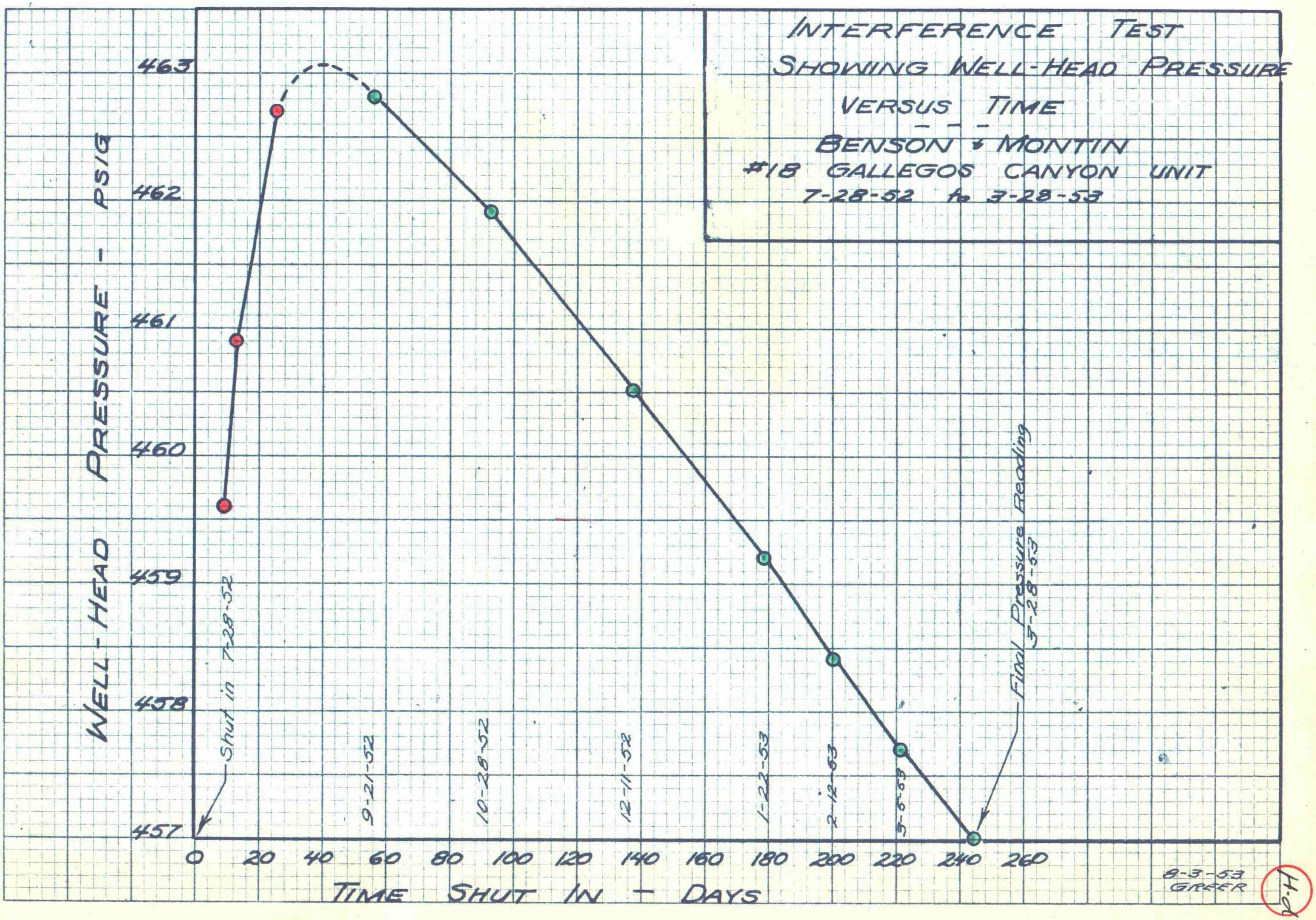
KUTZ CANYON — FULCHER BASIN GAS FIELD

FARMINGTON

GALLEGOS CANYON UNIT

WEST KUTZ FIELD

Ex H-(c)



Ex H. (d)

I-a

BENSON-MONTIN
INTERFERENCE TEST NO. 3
GALLEGOS CANYON AREA
SAN JUAN COUNTY, NEW MEXICO
PICTURED CLIFFS FORMATION

DATE OF TEST: November 1952 to March 1953.

AREA OF TEST:

Description	Approximate Area
All Section 27, Twp. 28N, Rge. 12W	640 acres
" Section 28, Twp. 28N, Rge. 12W	640 "
" Section 33, Twp. 28N, Rge. 12W	640 "
" Section 34, Twp. 28N, Rge. 12W	640 "
TOTAL	2,560 acres

PRODUCING WELLS WITHIN TEST AREA:

Well	Location (T-28N, R-12W)	Date of First Production into Pipe Line
#4 Gallegos Canyon Unit	NE/4 Sec. 34	February, 1952
#11 Gallegos Canyon Unit	SW/4 Sec. 34	November, 1952
#16 Gallegos Canyon Unit	NE/4 Sec. 27	September, 1952
#17 Gallegos Canyon Unit	NE/4 Sec. 28	September, 1952

SHUT-IN WELLS WITHIN TEST AREA:

Well	Location (T-28N, R-12W)
#10 Gallegos Canyon Unit	SW/4 Sec. 33
#12 Gallegos Canyon Unit	NE/4 Sec. 33
#13 Gallegos Canyon Unit	SW/4 Sec. 27
#24 Gallegos Canyon Unit	SE/4 Sec. 34

DISTANCE FROM TEST WELL (G.C.U. #13) TO PRODUCING WELLS WITHIN TEST AREA:

3,750 feet to #4 Gallegos Canyon Unit
4,000 feet to #17 Gallegos Canyon Unit
4,750 feet to #16 Gallegos Canyon Unit
5,280 feet to #11 Gallegos Canyon Unit

INTERFERENCE TEST OF
BENSON-MONTIN'S #13 GALLEGOS CANYON UNIT
SW/4 SECTION 27, TWP. 28N, RGE. 12W
SAN JUAN COUNTY, NEW MEXICO
SHOWING
RECORD OF WELL-HEAD PRESSURES

MEASURE-MENT NO.	DATE	TIME	CASINGHEAD PRESSURE psig	DAYS SHUT IN	REMARKS
1	11- 9-52	4:00 PM	-	0	Shut in.
2	11-13-52	-	447	4	Open 3 hours to take State Potential Test.
3	11-22-52	7:00 PM	457.0	13	B & M Dead Weight Gauge.
4	12- 3-52	3:00 PM	460.1	24	"
5	12-11-52	3:00 PM	460.7	32	"
6	12-30-52	4:30 PM	460.9	51	"
7	1-12-53	6:30 PM	460.6	64	"
8	1-22-53	3:30 PM	460.3	74	"
9	2- 3-53	4:00 PM	459.5	86	"
10	2-12-53	2:30 PM	458.8	95	"
11	3- 1-53	4:00 PM	458.0	112	"

I-c

DATA ON PICTURED CLIFFS SAND

KUTZ CANYON - FULCHER BASIN, WEST KUTZ, AND GALLEGOS CANYON AREAS

SAN JUAN COUNTY, NEW MEXICO

scale

0 1 2 3 4

miles

5-1-52 GREER
8-1-53 Rev. W. Kutz & Area

LEGEND

- PRODUCING PICTURED CLIFFS WELL
- WELL ABANDONED IN PICTURED CLIFFS
- WELL LOCATION
- AREA INFERRED TO BE NON-COMMERCIAL FOR PICTURED CLIFFS PRODUCTION

T30N

T29N

T28N

T27N

R13W

R12W

R11W

R10W

KUTZ CANYON — FULCHER BASIN GAS FIELD

FARMINGTON

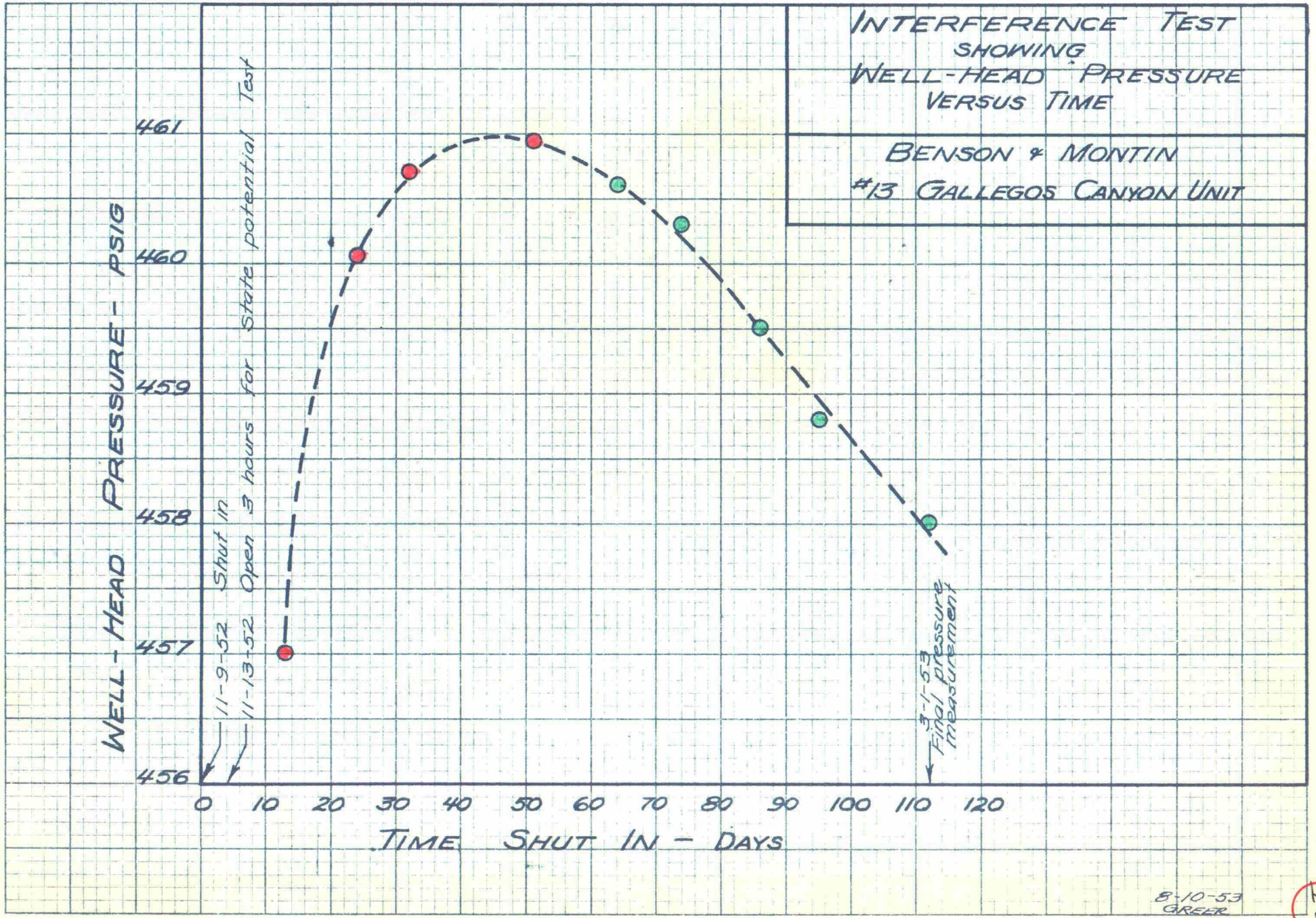
GALLEGOS CANYON UNIT

Initial S.I.P. 468 psig

Initial S.I.P. 469 psig

WEST KUTZ FIELD

Ex I (c)



(P) I Ex 31

P-I

(1-a)

BENSON-MONTIN
INTERFERENCE TEST NO. 4
GALLEGOS CANYON AREA
SAN JUAN COUNTY, NEW MEXICO
PICTURED CLIFFS FORMATION

DATE OF TEST: March, April, May, June, July, 1953.

AREA OF TEST:

Description	Approximate Area
All Section 26, Twp. 28N, Rge. 12W	640 acres
" Section 27, Twp. 28N, Rge. 12W	640 "
" Section 28, Twp. 28N, Rge. 12W	640 "
" Section 33, Twp. 28N, Rge. 12W	640 "
" Section 34, Twp. 28N, Rge. 12W	640 "
" Section 35, Twp. 28N, Rge. 12W	640 "
" Section 2, Twp. 27N, Rge. 12W	640 "
" Section 3, Twp. 27N, Rge. 12W	640 "
" Section 4, Twp. 27N, Rge. 12W	640 "
TOTAL	5,760 acres

PRODUCING WELLS WITHIN TEST AREA:

Well	Location	Date of First Production into Pipe Line
Benson-Montin		
#4 Gallegos Canyon Unit	NE/4 Sec. 34, T-28N, R-12W	February, 1952
#10 Gallegos Canyon Unit	SW/4 Sec. 33, T-28N, R-12W	March, 1953
#11 Gallegos Canyon Unit	SW/4 Sec. 34, T-28N, R-12W	November, 1952
#12 Gallegos Canyon Unit	NE/4 Sec. 33, T-28N, R-12W	March, 1953
#13 Gallegos Canyon Unit	SW/4 Sec. 27, T-28N, R-12W	March, 1953
#14 Gallegos Canyon Unit	SW/4 Sec. 26, T-28N, R-12W	November, 1952
#16 Gallegos Canyon Unit	NE/4 Sec. 27, T-28N, R-12W	September, 1952
#17 Gallegos Canyon Unit	NE/4 Sec. 28, T-28N, R-12W	September, 1952
#24 Gallegos Canyon Unit	SE/4 Sec. 34, T-28N, R-12W	March, 1953

J-6

INTERFERENCE TEST NO. 4 - CONTINUED

Well	Location	Date of First Production into Pipe Line
Benson-Montin (contd.)		
#5 Payne	NE/4 Sec. 35, T-28N, R-12W	December, 1952
#6 Payne	NW/4 Sec. 35, T-28N, R-12W	September, 1952
#7 Payne	SW/4 Sec. 35, T-28N, R-12W	September, 1952
#8 Payne	SE/4 Sec. 35, T-28N, R-12W	September, 1952
#1 Lilly	NE/4 Sec. 4, T-27N, R-12W	November, 1952
#2 Lilly	NW/4 Sec. 4, T-27N, R-12W	January, 1953
#4 Lilly	SE/4 Sec. 4, T-27N, R-12W	February, 1953
Danube		
#1 Thompson	NE/4 Sec. 2, T-27N, R-12W	February, 1952
#2 Thompson	SE/4 Sec. 2, T-27N, R-12W	February, 1952
#3 Thompson	SE/4 Sec. 3, T-27N, R-12W	February, 1952
#5 Thompson	NW/4 Sec. 3, T-27N, R-12W	May, 1952
#7 Thompson	SW/4 Sec. 3, T-27N, R-12W	February, 1952
#1 Harmon	SW/4 Sec. 2, T-27N, R-12W	February, 1952
#2 Harmon	NW/4 Sec. 2, T-27N, R-12W	February, 1952
Hancock		
#11 Hancock	NE/4 Sec. 3, T-27N, R-12W	July, 1952

SHUT-IN WELLS WITHIN TEST AREA:

Well	Location	Nearest Producing Well	Distance to Nearest Producing Well
Benson-Montin #30 G.C.U.	SE/4 33-28-12	#12 G.C.U.	1920'
Benson-Montin #31 G.C.U.	NW/4 34-28-12	#11 G.C.U.	2120'

Ex. J-6

(J-e)

INTERFERENCE TEST OF
BENSON-MONTIN #31 GALLEGOS CANYON UNIT
NW/4 SECTION 34, TWP. 28N, RGE. 12W
SAN JUAN COUNTY, NEW MEXICO
SHOWING
RECORD OF WELL-HEAD PRESSURES

MEASURE-MENT NO.	DATE	TIME	CASINGHEAD PRESSURE (psig)	DAYS SHUT IN	REMARKS
1	3-17-53	12:00 Noon	-	0	Shut in.
2	4- 3-53	-	443	17	Opened well 3 hours for State Potential test. Pressure measured with EPNG dead weight gauge.
3	4-23-53	6:00 PM	442.5	37	Used B & M dead-weight gauge.
4	5-12-53	3:30 PM	440.7	56	"
5	5-29-53	1:00 PM	437.9	73	"
6	6- 9-53	3:00 PM	436.2	84	"
7	7-11-53	4:30 PM	431.2	116	"

NOTE: Measurements #3 through #7 were made with Benson-Montin's dead weight gauge, which has a sensitivity of 1/10#. After the well was shut in at close of potential test on 4-3-53, it was not opened until after Measurement #7 on 7-11-53, at which time it was blown through the tubing for 5 minutes to determine if there was any fluid in the hole. This showed the well to be absolutely dry.

Ex T (a)

DATA ON PICTURED CLIFFS SAND

J-d

KUTZ CANYON - FULCHER BASIN, WEST KUTZ, AND GALLEGOS CANYON AREAS

SAN JUAN COUNTY, NEW MEXICO

scale

0 1 2 3 4

miles

5-1-52 GREER
8-1-53 Rev. W. Kutz Area

LEGEND

- PRODUCING PICTURED CLIFFS WELL
- WELL ABANDONED IN PICTURED CLIFFS
- WELL LOCATION
- AREA INFERRED TO BE NON-COMMERCIAL FOR PICTURED CLIFFS PRODUCTION

LEGEND REGARDING INTERFERENCE TEST

- AREA COVERED BY TEST.
- SUBJECT SHUT-IN WELL.
- WELLS PRODUCING DURING PERIOD OF TEST. (ALL OTHER WELLS SHOWN IN TEST AREA WERE NOT PRODUCING AS OF TIME OF INTERFERENCE TEST.)

T30N

T29N

T28N

T27N

R13W

R12W

R11W

R10W

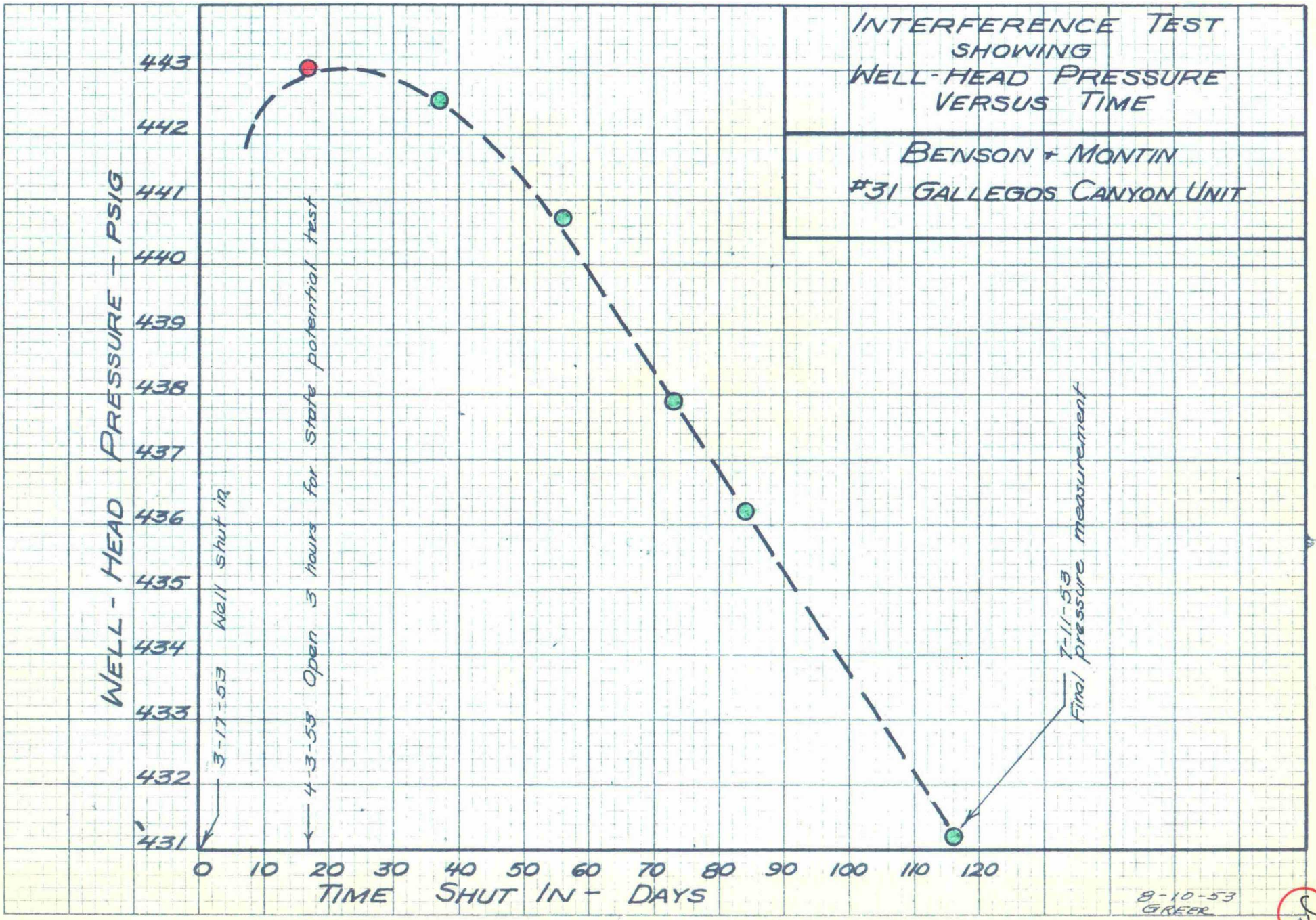
KUTZ CANYON — FULCHER BASIN GAS FIELD

GALLEGOS CANYON UNIT

WEST KUTZ FIELD

FARMINGTON

Ex. J(d)



Ex N(e)

(K-a)

BENSON-MONTIN
INTERFERENCE TEST NO. 5
GALLEGOS CANYON AREA
SAN JUAN COUNTY, NEW MEXICO
PICTURED CLIFFS FORMATION

DATE OF TEST: June, July, August, 1953

AREA OF TEST:

Description	Approximate Area
SW/2 Section 16, Twp. 28N, Rge. 12W	320 acres
SE/2 Section 17, Twp. 28N, Rge. 12W	320 "
SE/2 Section 19, Twp. 28N, Rge. 12W	320 "
All Section 20, Twp. 28N, Rge. 12W	640 "
All Section 21, Twp. 28N, Rge. 12W	640 "
SW/2 Section 22, Twp. 28N, Rge. 12W	320 "
NW/2 Section 27, Twp. 28N, Rge. 12W	320 "
All Section 28, Twp. 28N, Rge. 12W	640 "
All Section 29, Twp. 28N, Rge. 12W	640 "
NE/2 Section 30, Twp. 28N, Rge. 12W	320 "
NE/2 Section 32, Twp. 28N, Rge. 12W	320 "
NW/2 Section 33, Twp. 28N, Rge. 12W	320 "
TOTAL	5,120 acres

PRODUCING WELLS WITHIN TEST AREA:

Well	Location (T-28N, R-12W)	Date of First Production into pipe line
#6 Gallegos Canyon Unit	SW/4 Sec. 22	February, 1952
#7 Gallegos Canyon Unit	NE/4 Sec. 30	August, 1952
#17 Gallegos Canyon Unit	NE/4 Sec. 28	September, 1952
#18 Gallegos Canyon Unit	NE/4 Sec. 21	April, 1953

Ex K (a)

(K-6)

PRODUCING WELLS ON BOUNDARY OF TEST AREA:

Well	Location (T-28N, R-12W)	Date of First Production into pipe line
#10 Gallegos Canyon Unit	SW/4 Sec. 32	March, 1953
#12 Gallegos Canyon Unit	NE/4 Sec. 32	March, 1953
#13 Gallegos Canyon Unit	SW/4 Sec. 27	March, 1953
#16 Gallegos Canyon Unit	NE/4 Sec. 27	September, 1952
#20 Gallegos Canyon Unit	SW/4 Sec. 17	April, 1953

SHUT-IN WELLS WITHIN TEST AREA:

Well	Location (T-28N, R-12W)	Nearest Producing Well	Distance to nearest producing well
#19 Gallegos Canyon Unit	NE/4 Sec. 20	#20 G.C.U.	4,400 feet
#33 Gallegos Canyon Unit	SW/4 Sec. 21	#17 G.C.U.	3,850 "
#34 Gallegos Canyon Unit	SW/4 Sec. 28	#17 G.C.U.	3,740 "
#39 Gallegos Canyon Unit	SW/4 Sec. 16	#18 G.C.U.	4,300 "
#40 Gallegos Canyon Unit	NE/4 Sec. 29	#17 G.C.U.	5,000 "
#41 Gallegos Canyon Unit	NE/4 Sec. 32	# 9 G.C.U.	3,230 "

(K-e)

INTERFERENCE TEST OF
BENSON-MONTIN #33 GALLEGOS CANYON UNIT
SW/4 SECTION 21, TWP. 28N, RGE. 12W
SAN JUAN COUNTY, NEW MEXICO
SHOWING
RECORD OF SHUT-IN WELL-HEAD PRESSURES

MEASUREMENT NO.	DATE	TIME	CASINGHEAD PRESSURE (psig)	DAYS SHUT IN	REMARKS
1	6-26-53	8:00 AM	0	0	Shut in
2	7-21-53	8:30 PM	459.0	25	
3	7-31-53	7:30 AM	459.1	35	
4	8- 5-53	6:00 PM	459.1	40	
5	8- 9-53	11:30 AM	458.85	44	8-8-53 well was blown into pipe line lateral for 5 minutes to purge it. This reading abnormally low because of blowing well. Installed locks on valves.
6	8-15-53	2:00 PM	459.0	50	
7	8-19-53	5:30 PM	458.7	54	
8	8-24-53	9:30 PM	458.55	59	
9	8-31-53	4:00 PM	458.45	66	
10	9-12-53	12:30 PM	457.5	78	Took State Potential Test.

NOTE: Measurements 2 through 10 were made with B & M dead weight gauge, which has a sensitivity of 1/10#. After Measurement No. 10 on 9-12-53 well was blown through tubing for 5 minutes to determine if there was any liquid in the well bore. This showed the well to be absolutely dry.

(K-9)

INTERFERENCE TEST OF BENSON-MONTIN #34 GALLEGOS CANYON UNIT SW/4 SECTION 28, TWP. 28N, RGE. 12W SAN JUAN COUNTY, NEW MEXICO SHOWING RECORD OF SHUT-IN WELL-HEAD PRESSURES

MEASUREMENT NO.	DATE	TIME	CASINGHEAD PRESSURE (psig)	DAYS SHUT IN	REMARKS
1	6-19-53	12:00 Noon	0	0	Shut in
2	6-29-53	-	458	10	Opened well for 3 hours for State Potential Test. Pressure measured with EPNG gauge.
3	7-11-53	5:30 PM	460.6	22	
4	7-21-53	9:00 PM	462.6	32	
5	7-31-53	8:30 AM	462.9	42	
6	8- 5-53	7:30 PM	462.5	47	Well blown on 8-5-53 for 5 minutes to purge lateral, causing this pressure to be abnormally low. Installed locks on valves.
7	8- 9-53	12:00 Noon	463.1	51	
8	8-15-53	2:30 PM	463.3	57	
9	8-19-53	6:30 PM	463.4	61	
10	8-24-53	10:30 PM	463.3	66	
11	8-31-53	4:30 PM	463.3	73	
12	9-12-53	4:00 PM	462.9	85	

NOTE: Measurements #3 through #12 were made with B & M's dead weight gauge, which has a sensitivity of 1/10#. After the well was shut in at close of potential test on 6-29-53 it was not opened again until after Measurement #12 on 9-12-53, with the exception of being inadvertently opened on 8-5-53 for 5 minutes. After Measurement #12 the well was blown through the tubing for 5 minutes to determine if there was any liquid in the well bore. This showed the well to be absolutely dry.

(K-6)

INTERFERENCE TEST OF
BENSON-MONTIN #41 GALLEGOS CANYON UNIT
NE/4 SECTION 31, TWP. 28N, RGE. 12W
SAN JUAN COUNTY, NEW MEXICO
RECORD OF SHUT-IN WELL HEAD PRESSURES

MEASUREMENT NO.	DATE	TIME	CASINGHEAD PRESSURE (psig)	DAYS SHUT IN	REMARKS
1	6-12-53	4:00 PM	0	0	Shut in.
2	6-26-53	-	457	14	Well opened for 3 hours to take State Potential Test. Pressure measured with EPNG gauge.
3	7-11-53	6:00 PM	462.3	29	
4	7-21-53	10:00 PM	463.0	39	
5	7-31-53	9:00 AM	463.0	49	
6	8- 5-53	8:00 PM	463.05	54	
7	8- 9-53	12:00 Noon	463.05	58	
8	9-12-53	4:15 PM	462.4	92	

NOTE: Measurements #2 through #8 were taken with B & M dead weight gauge, which has a sensitivity of 1/10#. After closing in the well at completion of potential test on 6-26-53, the well was not opened until after Measurement #8, at which time it was blown through the tubing for 5 minutes to determine if there was any liquid in the well bore. This showed the well to be absolutely dry.

Ex K-6

(K-4)

INTERFERENCE TEST OF BENSON-MONTIN #40 GALLEGOS CANYON UNIT NE/4 SECTION 29, TWP. 28N, RGE. 12W SAN JUAN COUNTY, NEW MEXICO SHOWING RECORD OF SHUT-IN WELL-HEAD PRESSURES

MEASUREMENT NO.	DATE	TIME	WELL-HEAD PRESSURE (psig)	DAYS SHUT IN	REMARKS
1	7- 9-53	12:00 Noon	0	0	Shut in.
2	7-21-53	8:00 PM	457.4	12	
3	7-31-53	7:00 AM	459.9	22	
4	8- 5-53	6:30 PM	461.0	27	
5	8- 9-53	11:15 AM	461.1	31	Well was blown for 5 minutes on 8-7-53. This pressure is low as a result. Installed locks on valves.
6	8-15-53	1:30 PM	461.75	37	
7	8-19-53	6:00 PM	462.15	41	
8	8-24-53	11:00 PM	462.25	46	
9	8-31-53	4:15 PM	462.4	53	
10	9-12-53	12:15 PM	462.3	65	Took State Potential Test.

NOTE: Measurements #2 through #10 were taken with B & M dead weight gauge, which has a sensitivity of 1/10#. After Measurement #10 the well was blown through the tubing for 5 minutes to determine if there was any liquid in the well bore. This showed the well to be absolutely dry.

DATA ON PICTURED CLIFFS SAND

KUTZ CANYON - FULCHER BASIN, WEST KUTZ, AND GALLEGOS CANYON AREAS

SAN JUAN COUNTY, NEW MEXICO

scale

0 1 2 3 4

miles

5-1-52 GREER
8-1-53 Rev. W.Mex. Area

LEGEND

- PRODUCING PICTURED CLIFFS WELL
- WELL ABANDONED IN PICTURED CLIFFS
- WELL LOCATION
- AREA INFERRED TO BE NON-COMMERCIAL FOR PICTURED CLIFFS PRODUCTION

LEGEND REGARDING INTERFERENCE TEST

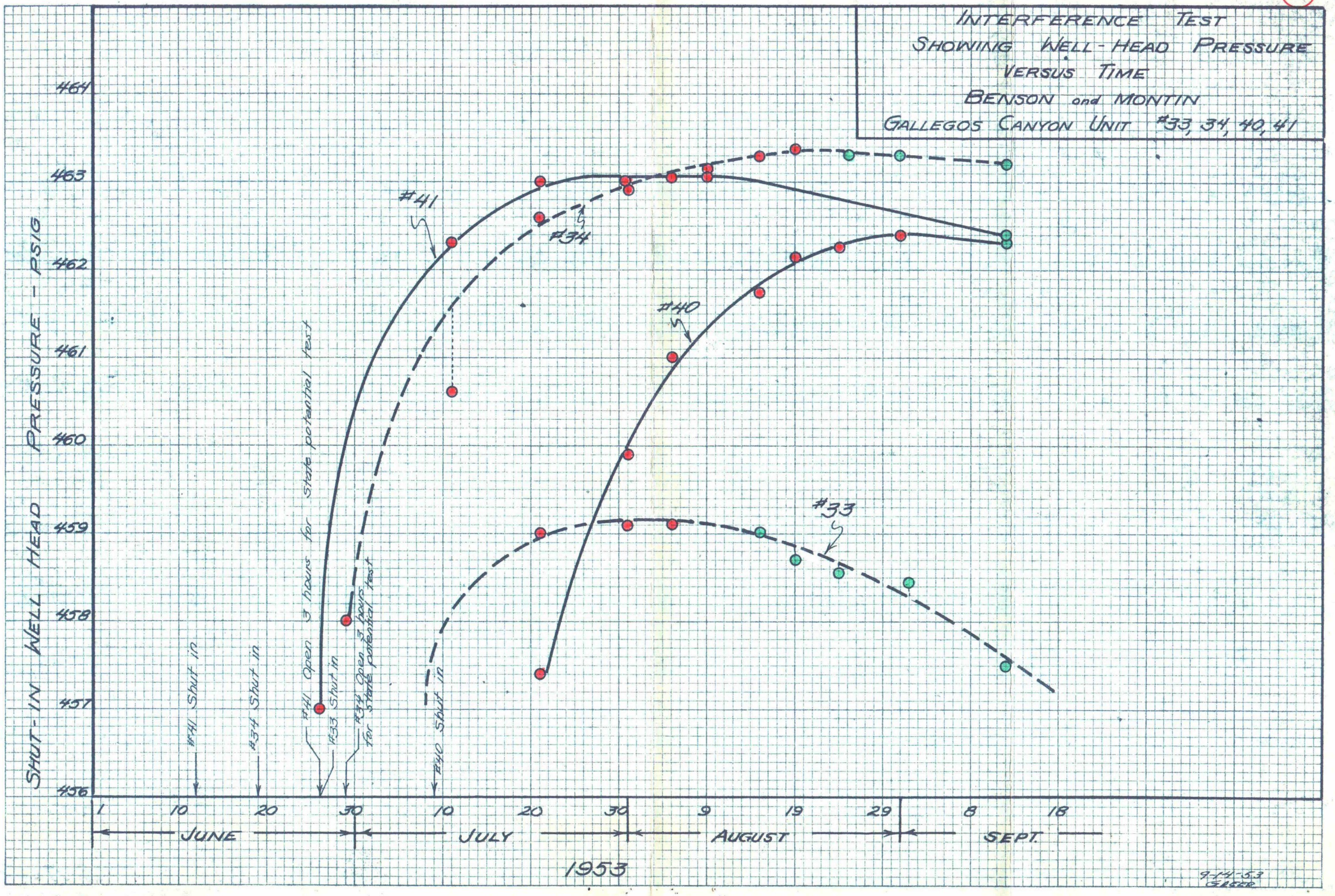
- AREA COVERED BY TEST.
- SUBJECT SHUT-IN WELL.
- WELLS PRODUCING DURING PERIOD OF TEST. (ALL OTHER WELLS SHOWN IN TEST AREA WERE NOT PRODUCING AS OF TIME OF INTERFERENCE TEST).
- WELLS FROM WHICH VIRGIN PRESSURE OF AREA WAS DETERMINED.

T30N
T29N
T28N
T27N
R13W
R12W
R11W
R10W
FARMINGTON
KUTZ CANYON — FULCHER BASIN GAS FIELD
GALLEGOS CANYON UNIT
Initial S.I.P. 467 3 psig
Initial S.I.P. 468 2 psig
WEST KUTZ FIELD

Ex K(8)

K-h

INTERFERENCE TEST
SHOWING WELL-HEAD PRESSURE VERSUS TIME
BENSON and MONTIN
GALLEGOS CANYON UNIT #33, 34, 40, 41



9-14-53
Slater