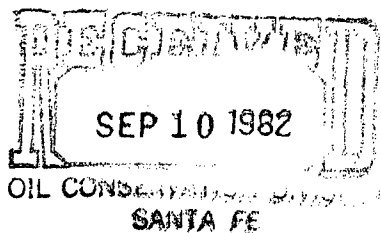


EXXON COMPANY, U.S.A.

POST OFFICE BOX 1600 • MIDLAND, TEXAS 79702

PRODUCTION DEPARTMENT
MIDCONTINENT DIVISION

August 31, 1982



Rule 303-A Exception
for the S. Carlsbad Gas
Com. 2, Well #1
Sec. 27, T-23S, R-26E,
Eddy County

Division Director
New Mexico Oil & Gas Commission
P. O. Box 2988
Santa Fe, New Mexico 87501

Exxon Corporation requests an exception to Statewide Rule 303-A to allow commingling of the Strawn and Morrow formations in our South Carlsbad Gas Com. 2-1 well. This well is currently a dual completion in the above mentioned zones. Unless a commingling permit is approved, the Morrow formation will be plugged back or the well will be shut in October 15, 1982 by Commission order.

This request is being sought in order to produce an estimated 0.2 BCF of Morrow gas which will otherwise be lost.

The necessary data as per Rule 303-C.2 is attached.

J. K. Lytle
J. K. Lytle

GAW:hct

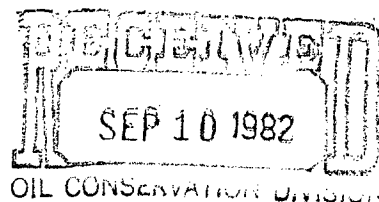
Attachments

xc: New Mexico Oil & Gas Commission
District 2
P. O. Drawer DD
Artesia, N. M. 88210

Craig Wicks
Wish to cont to
produce

ATTACHMENT I

STATE OF NEW MEXICO
RULE 303-C.2



- a) Operator: Exxon Corporation
P. O. Box 1600
Midland, TX 79702
- b) Lease: South Carlsbad Gas Com. 2, Well #1
Location: 1980' FSL, 1980' FEL, Sec. 27, T-23S, R-26E,
Eddy County, New Mexico
Pools: Strawn, Morrow
- c) Area Plat: See Attachment II
- d) Current Production: The latest well test is from the last
workover attempt to correct the com-
munication problem. Attachment III
is a copy of workover reports
- e) Decline Curves: Attachments IV and IVb
- f) Bottom Hole Pressures: Individual BHP's cannot be run accu-
rately due to communication between
zones (Attachment Va).
A graph of 24-hour shut-in tubing
pressures indicates that pressure
requirements can be met (Attachment
Vb) and cross-flow should not occur.
- g) Fluid Compatibility: See Attachment VI
- h) Value of Gas: We are currently getting the same price under
a common contract for production from both
zones. The gas characteristics are very
similar (Attachments VII - X) and should pose
no compatibility problem.
- i) Allocation Formula: The proposed allocation formula is
based on current production and decline
curves (Attachment XI).
- j) Notice - Offset Operators: Attachment XII

[illegible]

[illegible]

Page 5

ANDREWS DISTRICT

"Daily Report"

DATE	HOURS	COST TO DATE	REMARKS
7/13/82		\$33,088	600# TP, 190# CP, FLWG @ 120 MCF, DN 7 HRS, HIGH LINE PRES.
7/14/82			600# TP, 200# CP, FLWG @ 169 MCF.
7/15/82			600# TP, 180# CP, FLWG @ 140 MCF.
7/16/82			600# TP, 180# CP, FLWG @ 140 MCF.
7/17/82			600# TP, 170# CP, FLWG @ 126 MCF.
7/18/82			600# TP, 170# CP, FLWG @ 130 MCF.
7/19/82			600# TP, 170# CP, FLWG @ 127 MCF.
7/20/82			600# TP, 170# CP, FLWG @ 127 MCF.
7/21/82			600# TP, 170# CP, FLWG @ 127 MCF.
7/22/82			600# TP, 170# CP, FLWG @ 127 MCF.
7/23-24/82			600# TP, 170#, FLWG @ 127 MCF.
7/25/82			600# TP, 170# CP, FLWG @ 127 MCF.
7/26/82			600# TP, 170# CP, FLWG @ 127 MCF.
7/27/82			600# TP, 170# CP, FLWG @ 127 MCF.
7/28/82			600# TP, 190# CP, FLWG @ 120 MCF.
7/29/82	FLOWING STRAWN		600# TP, 200# CP, FLWG @ 104 MCF, DN 5 HRS
7/30/82			600# TP, 180# CP, FLWG @ 140 MCF.
7/31/82	706-136 MCF/D		600# TP, 200# CP, FLWG @ 120 MCF.
8/1/82			600# TP, 200# CP, FLWG @ 130 MCF.
8/2/82			600# TP, 500# CP, FLWG @ 90 MCF, OFF 6 HRS, PRES DN
8/3/82			600# TP, 220# CP, FLWG @ 145 MCF.
8/4/82			600# TP, 290# CP, FLWG @ 170 MCF.
8/5/82			600# TP, 180# CP, FLOWG @ 155MCF
8/6/82			600# TP, 180# CP, FLOWING @ 150 MCF
8/7/82			600# TP, 180# CP, FLOWING @ 140 MCF
8/8/82			600# TP, 180# CP, FLOWING @ 145 MCF
8/9/82			600# TP, 180# CP, FLOWING @ 140 MCF, PREPARING TO PULL BLANKET PLUG, CLOSE SLIDE IN SLEEVE
8/10/82			MIRU WL TRUCK, RIH, CLOSED SLEEVE, RIH W/FISHING TOOL, LATCHED ON TO BLANKET PLUG, MOVED PLUG 4', COULD NOT JAR PLUG LOOSE, SDON
8/11/82			MADE 10 RUNS FISHING FOR BLANKET PLUG, JARRED ON PLUG ON EACH RUN, SHEARED PINS EACH TIME, SI RD MO
8/12/82			FOUND 1200# SICP, 400# SITP. OPEN CSG & TBG TO SALE

AFE 34034 AMOUNT BUDGETED \$19,700 BEFORE W/O BO 270 BW
 PRODUCTION: EXPECTED AFTER W/O 270 ~~XXX~~ MCF BW
 OBJECTIVE REPAIR PACKER LEAK BY SETTING PACKER ABOVE PRESENT PACKER
 COMPLETION INTERVAL: Before W/O 10304-382
11381-753; After W/O SAME
 CONTRACTOR COBRA WELL SERVICE FIELD SO. CARLSBAD WELL NAME SO CARLSBAD
 COMM. 2-1

RESERVOIR PRESSURE

10,000'

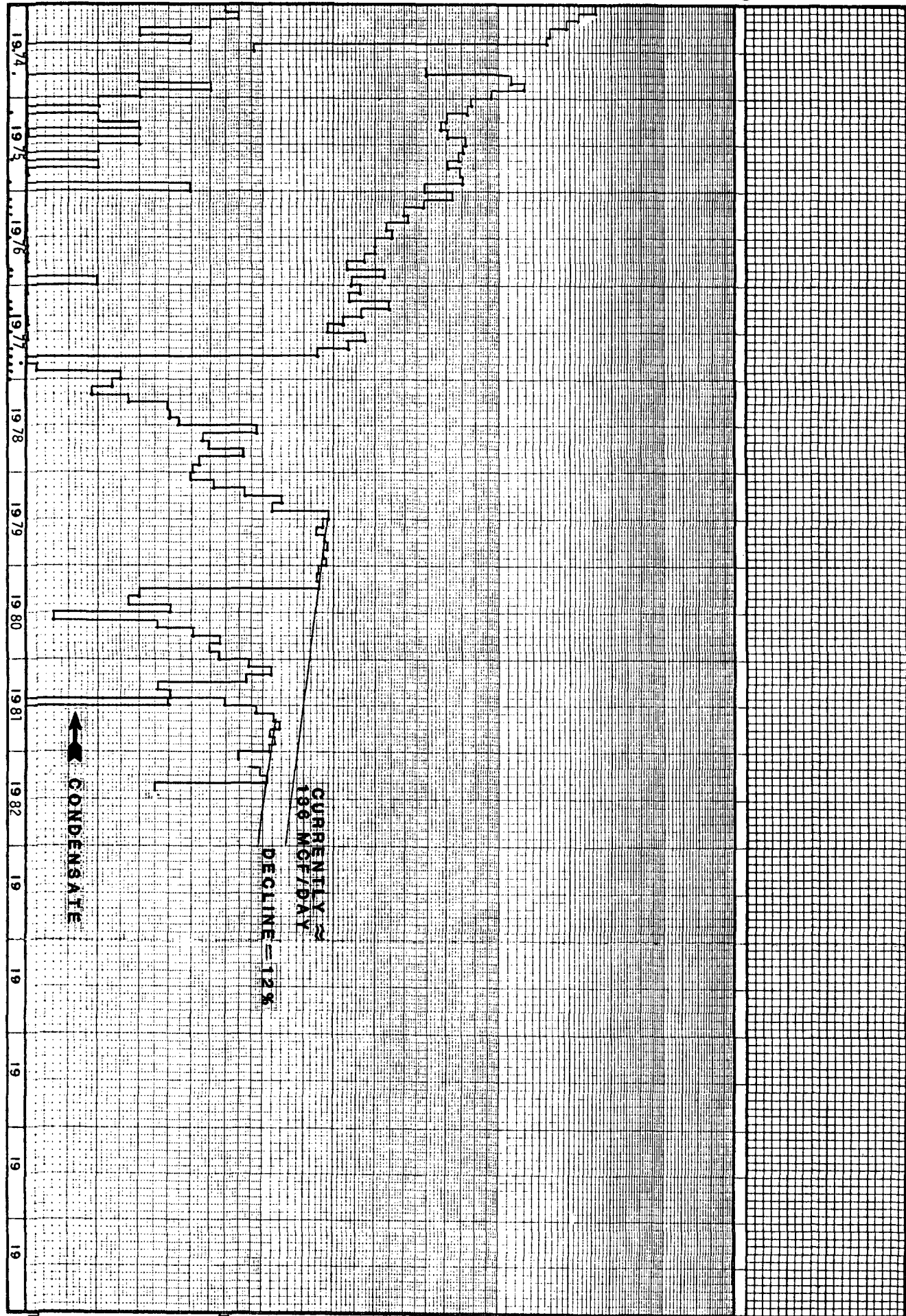
Gas Production

MCF/D

1,000

100

10



FIELD South Carl'sbad

LEASE So. Carl'sbad Gas Com 2 (Strawn)

WELL 1C

60R, CU. FT./BBL

Water Prod.
Oil Prod.

BBL/D

RESERVOIR PRESSURE

10,000

Gas Production
MCF/D

WATER PRODUCTION - B/D
OIL PRODUCTION - B/D

1,000

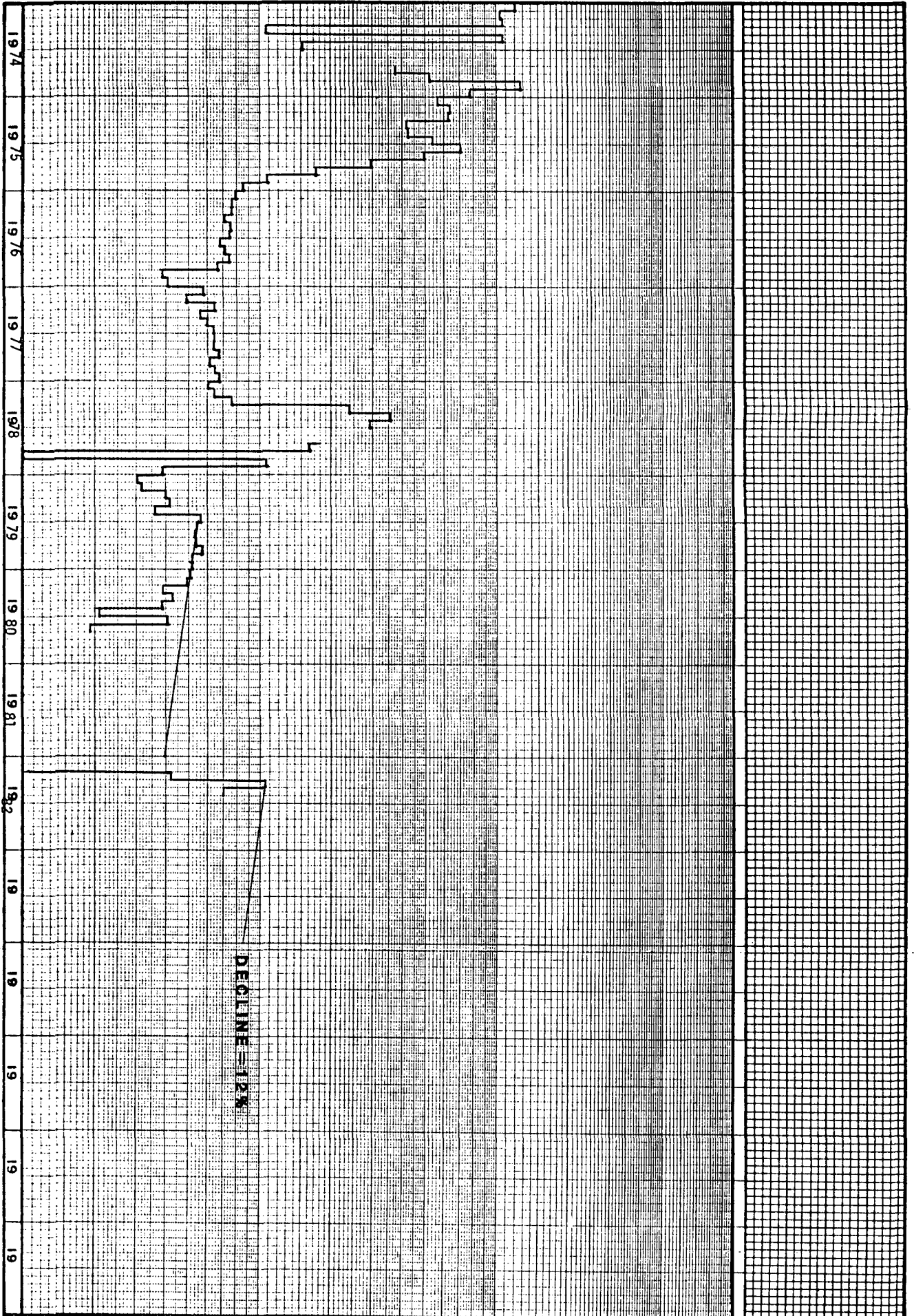
100

10

FIELD South Carlsbad

LEASE So Carlsbad Gas Com 2 (Morrow)

WELL 1 T



GOR, CU.FT./BBL

Water Prod.
Oil Prod.

BBL/D

J. AREL SERVICES, INC.

POST OFFICE BOX 1654

PHONES 505 393-5396 - 393-8274

HOBBS, NEW MEXICO 88240

ATTACHMENT Va

COMPANY: Exxon Company USA

WELL: South Carlsbad Gas Com 2, No 1

FIELD: South Carlsbad Morrow

CHRONOLOGICAL PRESSURE DATA

DATE	STATUS OF WELL	TIME	ELAPSED TIME		SURFACE PRESSURE		BHP @ (-8260)	
			HRS.	MIN.	TBG	CSG	11300'	11567'
1982								PSIG
3-15	Flowing. Run Flowing Gradient w/Tandem Bombs and Set Bombs Off @ 11300'	11:30 AM	-	-	354	Dual	2094	2178
	Shut in	12:30 PM	1	00	-	-	2094	2178
	"	12:35	0	05	-	-	2139	2220
	"	12:40	0	10	-	-	2167	2248
	"	12:45	0	15	-	-	2191	2270
	"	12:50	0	20	-	-	2208	2289
	"	12:55	0	25	-	-	2243	2324
	"	1:00	0	30	-	-	2250	2331
	"	1:05	0	35	-	-	2267	2348
	"	1:10	0	40	-	-	2285	2366
	"	1:15	0	45	-	-	2292	2373
	"	1:20	0	50	-	-	2309	2390
	"	1:25	0	55	-	-	2319	2400
	"	1:30	1	00	-	-	2326	2407
	"	1:45	1	15	-	-	2361	2442
	"	2:00	1	30	-	-	2372	2453
	"	2:15	1	45	-	-	2378	2459
	"	2:30	2	00	-	-	2389	2470
	Opened Casing	3:00	2	30	-	-	2392	2473
	Shut in, Casing Flowing	3:30	3	00	-	-	2389	2470
	"	4:30	4	00	-	-	2330	2411
	"	5:30	5	00	-	-	2306	2387
	"	6:30	6	00	-	-	2278	2359
	"	7:30	7	00	-	-	2247	2328
	"	8:30	8	00	-	-	2240	2321
	"	9:30	9	00	-	-	2229	2310
	"	10:30	10	00	-	-	2229	2310
	"	11:30	11	00	-	-	2240	2321
3-16	"	12:30 AM	12	00	-	-	2250	2331
	"	1:30	13	00	-	-	2281	2362
	"	2:30	14	00	-	-	2295	2376
	"	3:30	15	00	-	-	2309	2390
	"	4:30	16	00	-	-	2319	2400
	"	5:30	17	00	-	-	2309	2390
	"	6:30	18	00	-	-	2309	2390
	"	7:30	19	00	-	-	2299	2380
	"	8:30	20	00	-	-	2299	2380
	"	9:30	21	00	-	-	2274	2355
	"	10:30	22	00	-	-	2253	2334
	"	11:30	23	00	-	-	2215	2296
	"	12:30 PM	24	00	-	-	2201	2282
	"	1:30	25	00	-	-	2191	2272
	"	2:30	26	00	-	-	2184	2265

DATE	STATUS OF WELL	TIME	ELAPSED TIME		SURFACE PRESSURE		BHP @ (-8260)	
			HRS.	MIN.	TBG	CSG	11300'	11567'
								PSIG
	"	3:30	27	00	-	-	2170	2251
	"	4:30	28	00	-	-	2156	2237
	"	5:30	29	00	-	-	2139	2220
	"	6:30	30	00	-	-	2111	2192
	"	7:30	31	00	-	-	2097	2178
	"	8:30	32	00	-	-	2087	2168
	"	9:30	33	00	-	-	2087	2168
	"	10:30	34	00	-	-	2080	2161
	"	11:30	35	00	-	-	2080	2161
3/17	"	12:30 AM	36	00	-	-	2073	2154
	"	1:30	37	00	-	-	2073	2154
	"	2:30	38	00	-	-	2073	2154
	"	3:30	39	00	-	-	2059	2150
	"	4:30	40	00	-	-	2066	2147
	"	5:30	41	00	-	-	2066	2147
	"	6:30	42	00	-	-	2066	2147
	"	7:30	43	00	-	-	2066	2147
	"	8:30	44	00	-	-	2066	2147
	"	9:30	45	00	-	-	2066	2147
	"	10:30	46	00	-	-	2066	2147
	"	11:30	47	00	-	-	2066	2147
	"	12:30 PM	48	00	-	-	2066	2147
	"	1:30	49	00	-	-	2066	2147
	"	2:30	50	00	-	-	2066	2147
	"	3:30	51	00	-	-	2069	2150
	"	4:30	52	00	-	-	2069	2150
	"	5:30	53	00	-	-	2073	2154
	"	6:30	54	00	-	-	2073	2154
	"	7:30	55	00	-	-	2080	2161
	"	8:30	56	00	-	-	2080	2161
	"	9:30	57	00	-	-	2087	2168
	"	10:30	58	00	-	-	2087	2168
	"	11:30	59	00	-	-	2087	2168
3/18	"	12:30 AM	60	00	-	-	2090	2171
	"	1:30	61	00	-	-	2097	2178
	"	2:30	62	00	-	-	2097	2178
	"	3:30	63	00	-	-	2104	2185
	"	4:30	64	00	-	-	2104	2185
	"	5:30	65	00	-	-	2104	2185
	"	6:30	66	00	-	-	2108	2189
	"	7:30	67	00	-	-	2108	2189
	"	8:30	68	00	-	-	2115	2196
	"	9:30	69	00	-	-	2115	2196
	Fished Bombs & Run Static Gradient	10:30	70	00	805	750	2115	2196

JAREL SERVICES, I.C.

POST OFFICE BOX 1854

PHONE 505 393-5396 — 393-8274

HOBBS, NEW MEXICO 88240

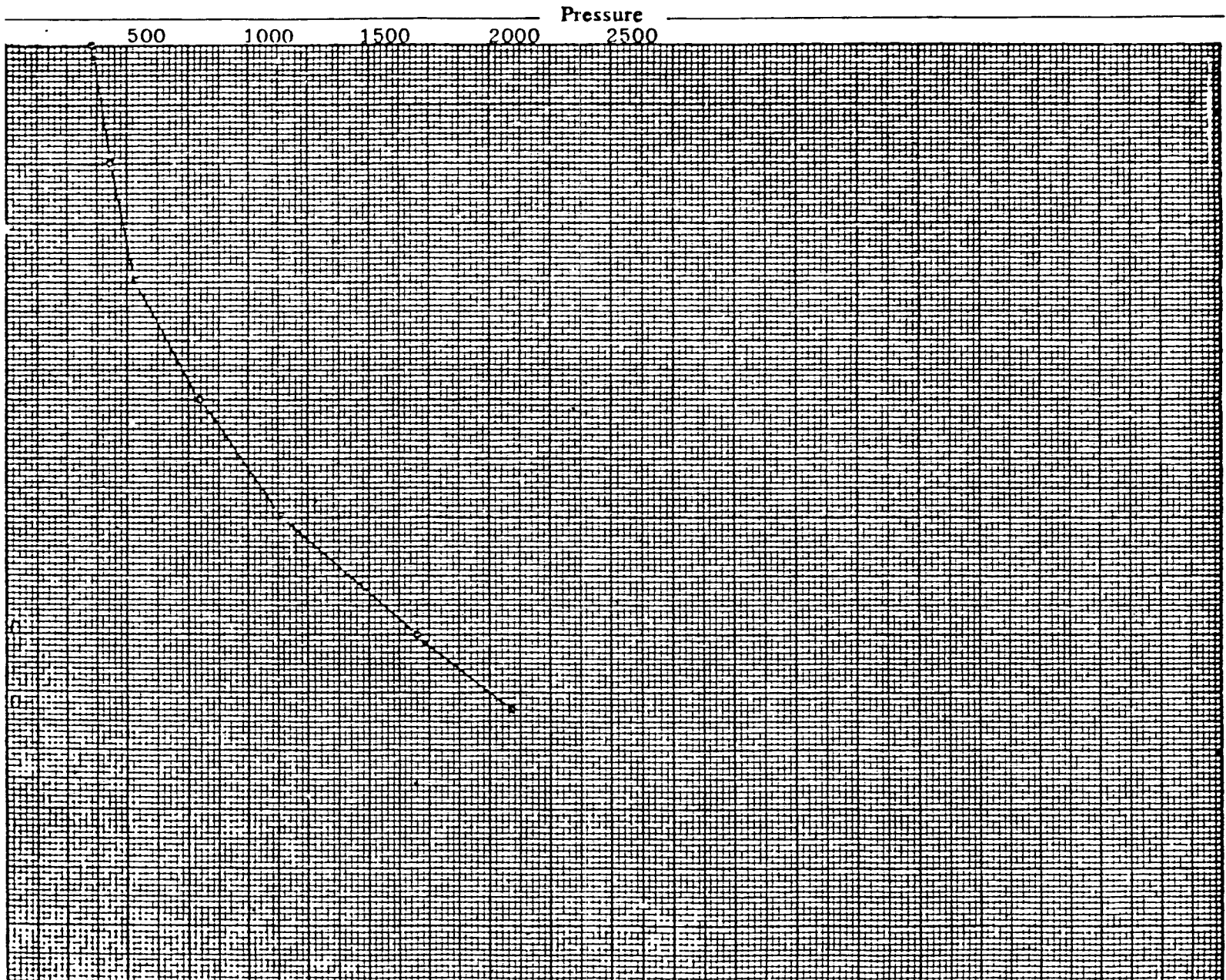
BOTTOM HOLE PRESSURE RECORD

OPERATOR Exxon Company USA
 FIELD South Carlsbad
 FORMATION Morrow
 LEASE South Carlsbad Gas Com 2 WELL #1
 COUNTY Eddy STATE New Mexico
 DATE 3/15/82 TIME 11:30 AM
 Status Flowing
 Test Depth 11300'
 Time S. I. - Last test date -
 Tub Pres. 354 BHP last test -
 Gas. Pres. PKR BHP change -
 Elev. 3307' KB-18 Fluid top Flowing
 Datum (-8260)** Water top -
 Temp. @ 200 F Run by JSI #21
 Cal. No. A19189N Chart No. 1

Depth	Pressure	Gradient
0	354	-
2000	426	.036
4000	529	.052
6000	797	.134
8000	1159	.181
10000	1700	.271
11300	2094	.303
11567 (-8260)	2178 * **	(.303)

* EXTRAPOLATED PRESSURE

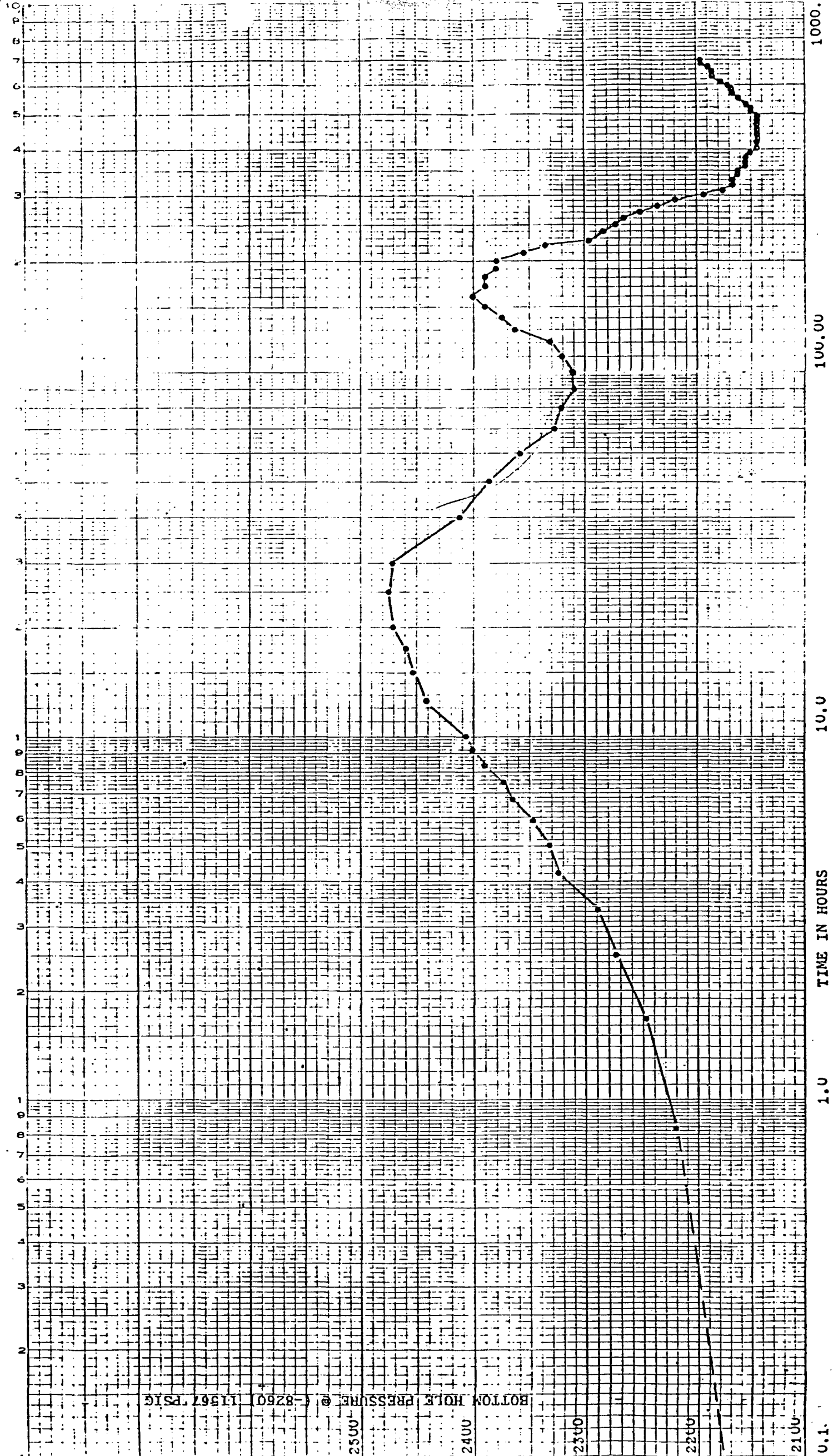
** MIDPOINT OF CASING PERFORATIONS



MADE IN U.S.A.

JARREL SERVICES, INC.

SEMI-LOGARITHMIC
CLIPS X 10 DIVISIONS PER INCH



BOTTOM HOLE PRESSURE @ (-8260) 11567 PSIG

JAREL SERVICES, INC.

POST OFFICE BOX 1854

PHONES 505 393-5396 — 393-8274

HOBBS, NEW MEXICO 88240

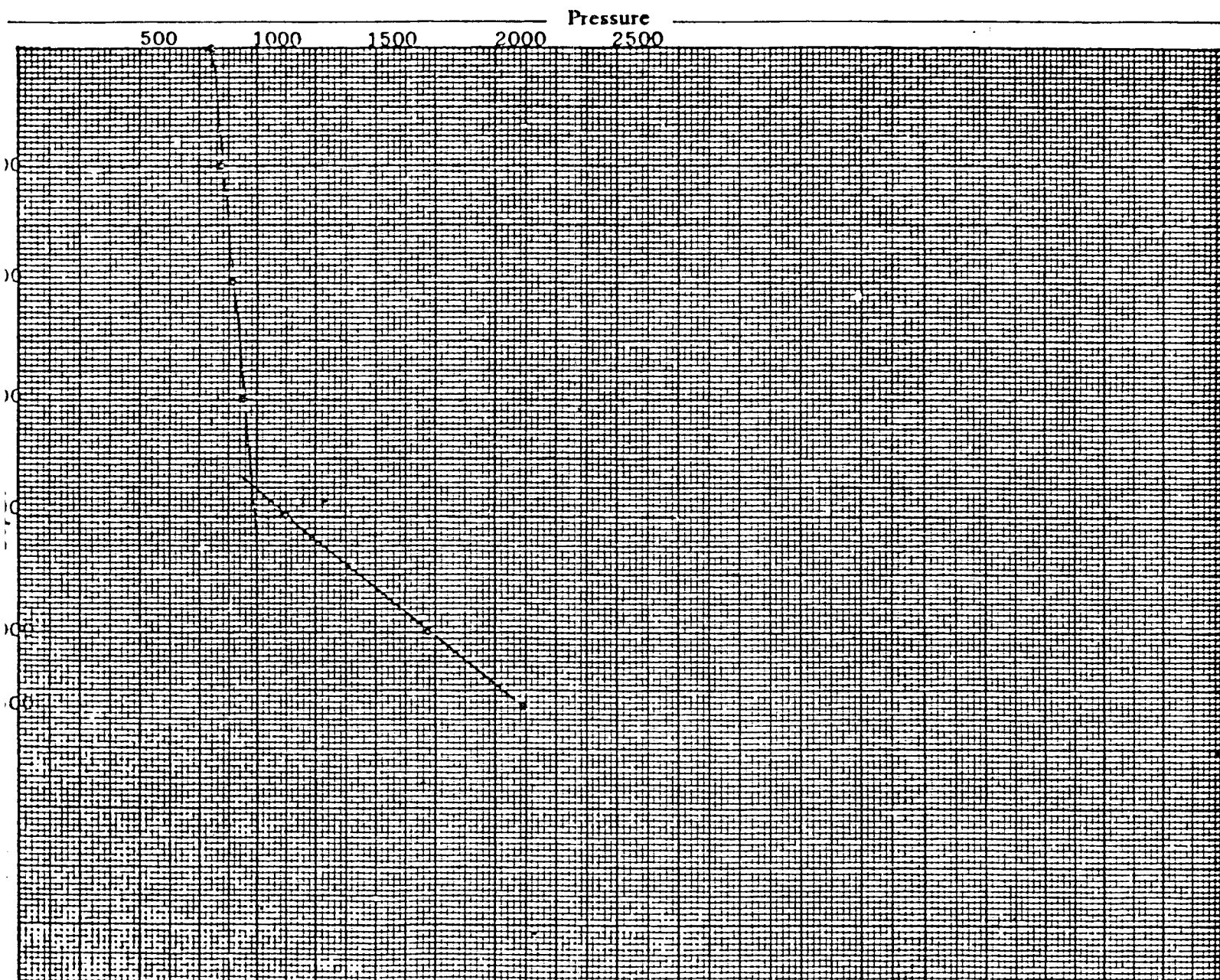
BOTTOM HOLE PRESSURE RECORD

OPERATOR Exxon Company USA
 FIELD South Carlsbad
 FORMATION Morrow
 LEASE South Carlsbad Gas Com 2 WELL #1
 COUNTY Eddy STATE New Mexico
 DATE 3/18/82 TIME 10:30 AM
 Status Shut in, Casing Flowing
 Test Depth 11300'
 Time S. I. 70.0 hr Last test date 1/2/82
 Tub Pres. 805 BHP last test 2503
 Cas. Pres. PKR 750G BHP change 307# Loss
 Elev. 3307' KB-18' Fluid top 7500'
 Datum (-8260)** Water top None
 Temp. @ 200 F Run by JSI #21
 Cal. No. A19189N Chart No. #2

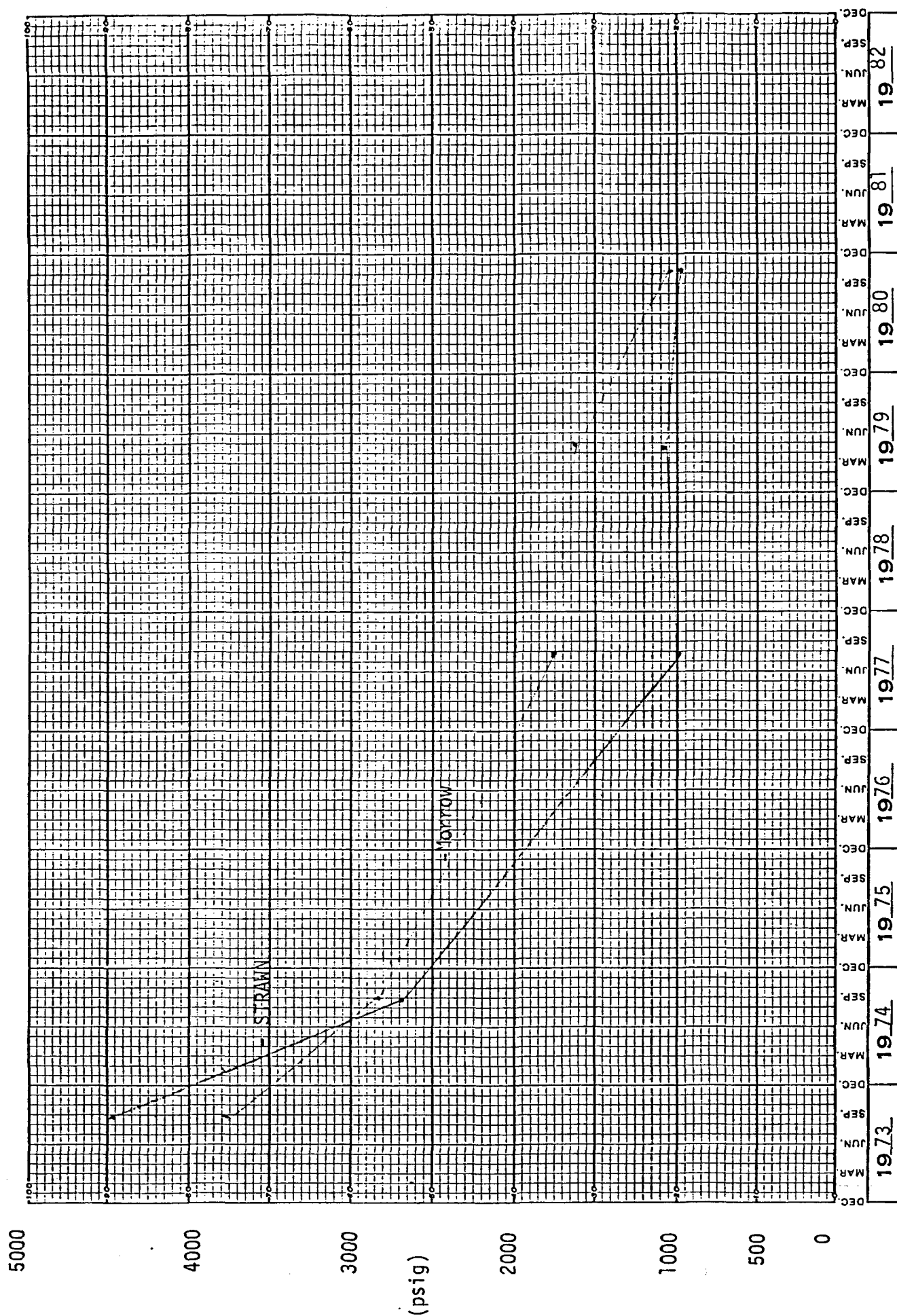
Depth	Pressure	Gradient
0	805	-
2000	845	.020
4000	891	.023
6000	939	.024
8000	1121	.091
10000	1723	.301
11300	2115	.302
11567 (-8260)	2196 * **	(.302)

* EXTRAPLATED PRESSURE

** MIDPOINT OF CASING PERFORATIONS



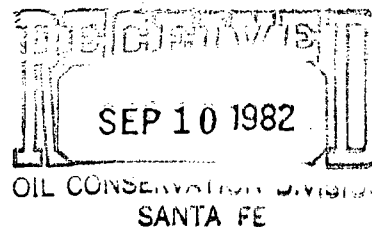
S. CARLSBAD GAS COM. 2-1
24 HR SHUT-IN TUBING PRESSURE



August 10, 1982

ATTACHMENT VI

Mr. Mike Metza
Exxon Company, U.S.A.
1700 West Broadway
Andrews, TX 79714



Subject: Recommendations relative to analyses #97393 (9-20-73),
#10735 (10-3-73), and #38226 (3-5-82) - South Carlsbad
Gas Comm. 2 #1.

Dear Mr. Metza:

As per your recent telephone conversation, we have pulled our records for a compatibility study between the Morrow (analysis #97393 and #10735) and the Strawn analysis #38226 (3-5-82). Based on these results, we have not identified evidence of any potential incompatibility between these two waters. It should be clarified that great care should be taken to prevent any air contamination in either or both of these waters as this would cause a serious precipitation of iron oxide.

Yours very truly,

Raylan C. Martin

WCM/md

cc: Mr. O. W. Davenport, Midland



ATTACHMENT VII

HYDROCARBON ANALYSIS

LABORATORY REPORT

Charge Exxon Company, U.S.A.
Test No. WFL-73-1006
Date of Run 10-1-73
Date Received 9-28-73

Sample of Gas from Separator - South Carlsbad Gas Com. 2 - Well No. 1

Produced from Strawn Formation

Eddy County, New Mexico

Secured by

J. Wolf

SEP 10 1982

SANTA FE

Purpose

Time

Date

9-28-73

Sampling Conditions:

Separator Pressure 700 psig

Gas Volume 868236 Cu. Ft.

Bottom Hole Pressure 5116 psig @ 165° F.

CHROMATOGRAPH ANALYSIS

55°C

ANALYSIS INFORMATION

Volume of Sample cc. @ ° F

Sp. Gr. Residue Vol. of Residue cc

Molecular Wgt. of Residue

Gal/lb. Mol.

VAPOR PRESSURE

lbs. @ 100° F

Calculated lbs. @ 100° F

GASOLINE CONTENT

26/70 Gasoline .15 G. P. M

100 % Propane .30 G. P. M

Excess Butanes .09 G. P. M

TOTAL .54 G. P. M

SULFUR DETERMINATION

Hydrogen Sulfide H₂S .0812 grs/100 SCF

Mercaptans RSH .2744 grs/100 SCF

Sulfides RSR .0512 grs/100 SCF

Residual Sulfides RSSR .0050 grs/100 SCF

Total Sulfides .4118 grs/100 SCF

OTHER DATA

DRY BASIS 1063

BTU Content (Actual) WET BASIS (Calc.) 1044

Sp. Gravity (Actual) (Calc.) .6098

A. P. I. Gr. (Actual) (Calc.)

Run by: J. Wolf

Checked by: J. Wolf

Approved:

Additional Data and Remarks

- Exxon Company, U.S.A.
Mr. C. S. Neel, Jr.
Box 1600, Midland, Texas 79701
- Mr. V. E. Young
Box 1600, Midland, Texas 79701
- Mr. C. C. Stewart, Jr.
1700 West Broadway
Andrews, Texas 79714

Apache Exploration Corp.
3 - Mr. Don Hansen
Box 2299
Tulsa, Oklahoma 74101

COPIES

J. M. Huber Corp.
3 - Mr. R. Cramer
1900 Wilco Building
Midland, Texas 79701
1 - File

ATTACHMENT VIII

HYDROCARBON ANALYSIS

LABORATORY REPORT

Charge Exxon Company, U.S.

Test No. WPL-73-1005

Date of Run 9-27-73

Date Received 9-26-73

Sample of Gas from Separator - South Carlsbad Gas Com. 2 - Well No. 1

ured from Morrow Formation

Eddy County, New Mexico

Secured by J. Wolf

pose Time Date 9-26-73

Sampling Conditions: Separator Pressure 380 psig

CHROMATOGRAPH ANALYSIS

ANALYSIS INFORMATION

	Gas Vol. or Mol. %	Liquid Vol. %	GPM
Hydrogen Sulfide	1.20		
Carbon Dioxide			
Hydrogen	.93		
Oxygen			
Propane	95.85		
Isobutane	1.70		
Normal Butane	.21		
Isobutane	.03		
Normal Pentane	.02		
Isopentane	.02		
Normal Hexane	.01		
Isohexane			
Heptanes (2)			
Octanes (2)	.03		
Nonane			
Decane			
TOTAL	100.00		

Volume of Sample	cc. @	° F
Sp. Gr. Residue	Vol. of Residue	cc.
Molecular Wgt. of Residue		
Gal/lb. Mol.		

VAPOR PRESSURE

Calculated lbs. @ 100° F

GASOLINE CONTENT

26/70	Gasoline	.034	G. P. M.
100 %	Propane	.058	G. P. M.
Excess	Butanes	.005	G. P. M.
	TOTAL	.097	G. P. M.

SULFUR DETERMINATION

Hydrogen Sulfide	H ₂ S	.0648	grs/100 SCI
Mercaptans	RSH	.2066	grs/100 SCI
Sulfides	RSR	.0440	grs/100 SCI
Residual Sulfides	RSSR	.0050	grs/100 SCI
Total Sulfides		.3204	grs/100 SCI

OTHER DATA

and lighter
and heavier

	DRY BASIS	1002
BTU Content (Actual)	WET BASIS (Calc.)	984
Sp. Gravity (Actual)	(Calc.)	.5816
A. P. I. Gr. (Actual)	(Calc.)	

Run by: J. Wolf Checked by: J. Wolf Approved:

Additional Data and Remarks

- Exxon Company, U.S.A.
Mr. C. S. Neel, Jr.
Box 1600, Midland, Texas 79701
- Mr. V. E. Young
Box 1600, Midland, Texas 79701
- Mr. C. C. Stewart, Jr.
1700 West Broadway
Andrews, Texas 79714

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Box 2299
Tulsa, Oklahoma 74101

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3 - Mr. R. Cramer
1900 Wilco Building
Midland, Texas 79701
1 - File

NEW-TEX LAB

PHONE 505/393-3581

P. O. BOX 1181

611 W. SNYDER

HOBBS, NEW MEXICO 88240

ATTACHMENT IX

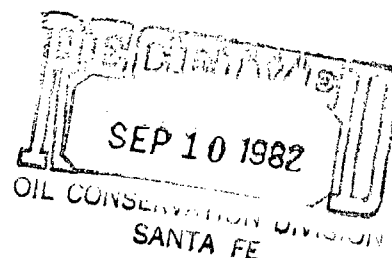
ANALYSIS CERTIFICATE

CLIENT: EXXON CO.USA
ADDRESS: BOX 2100
CITY, STATE: HOBBS NM 88240

ANALYSIS NUMBER : 7552
DATE OF RUN : 6 3 82
DATE SECURED : 6 3 82

SAMPLE IDENT: SOUTH CARLSBAD COM 2 #1 - ~~STRAWN~~
SAMPLING PRESS: SAMPLING TEMP:

***** GAS ANALYSIS *****



	MOLE PERCENT	GAL/ MCF
NITROGEN	1.057	
CARBON DIOXIDE	0.717	
METHANE	90.520	
ETHANE	5.703	1.521
PROPANE	0.974	0.267
ISO-BUTANE	0.230	0.075
NORMAL BUTANE	0.324	0.102
ISO-PENTANE	0.132	0.048
NORMAL PENTANE	2.091	0.033
HEXANES	0.071	0.029
HEPTANES PLUS	0.181	0.083
TOTAL	100.000	2.158

PROPANE GPM: 0.27 BUTANES GPM: 0.18
ETHANE GPM: 1.52 PENTANES PLUS GPM: 0.19

SPECIFIC GRAV (CALC): 0.6211
MOLE WEIGHT: 18.00

HHV-BTU/CU FT	PRESSURE (PSIA)	WET	DRY
14.696		1061	1080
14.650		1058	1077
14.730		1064	1083
14.735		1064	1083

DEANE SIMPSON

ANALYZED BY:

APPROVED BY

[Signature]

NEW-TEX
LAB

PHONE 505/393-3561

P. O. BOX 1161

611 W. SNYDER

HOBBS, NEW MEXICO 88240

ATTACHMENT X

ANALYSIS CERTIFICATE

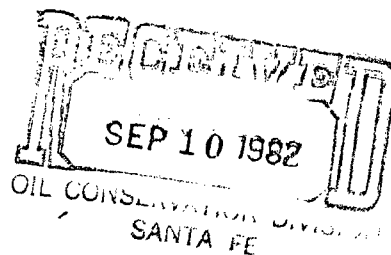
CLIENT: EXXON CO USA
ADDRESS: BOX 2100
CITY, STATE: HOBBS NM 88240

ANALYSIS NUMBER : 7553
DATE OF RUN : 6 3 82
DATE SECURED : 6 3 82

SAMPLE IDENT: SOUTH CARLSBAD COM 2 #1 - MORROW
SAMPLING PRESS: SAMPLING TEMP:

***** GAS ANALYSIS *****

	MOLE PERCENT	GAL/ MCF
NITROGEN	0.978	
CARBON DIOXIDE	0.699	
METHANE	90.451	
ETHANE	5.623	1.500
PROPANE	1.036	0.284
ISO-BUTANE	0.252	0.082
NORMAL BUTANE	0.364	0.114
ISO-PENTANE	0.177	0.065
NORMAL PENTANE	0.110	0.040
HEXANES	0.079	0.032
HEPTANES PLUS	0.231	0.106
TOTAL	100.000	2.223



PROPANE GPM: 0.28 BUTANES GPM: 0.20
ETHANE GPM: 1.50 PENTANES PLUS GPM: 0.24

SPECIFIC GRAV (CALC): 0.6244
MOLE WEIGHT: 18.11

HHV-BTU/CU FT	PRESSURE (PSIA)	WET	DRY
14.696		1068	1087
14.650		1065	1084
14.730		1071	1090
14.735		1071	1090

DEANE SIMPSON

ANALYZED BY:

APPROVED BY

Proposed Allocation Formula - Based on Attached Decline Curves

Q_t = Total Well Production (MCF/D)

Q_m = Production from Morrow (MCF/D)

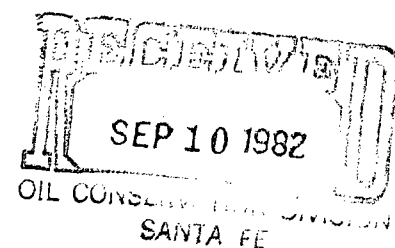
Q_s = Production from Strawn (MCF/D)

Using Decline Analysis $Q = Q_i (1-d)^t$

Q = Rate After Any Time t (MCF/D)

Q_i = Initial Rate (MCF/D)

d = Decline/Year (%)



Working Equations

(1) $Q_m = Q_{mi} (1-d_m)^t$ where d_m = Morrow Decline Rate (%)

(2) $Q_s = Q_{si} (1-d_s)^t$ where d_s = Strawn Decline Rate (%)

(3) $Q_t = Q_m + Q_s$

Divide (1) by (2)

$$\frac{Q_m}{Q_s} = \frac{Q_{mi}}{Q_{si}} \cdot \frac{(1-d_m)^t}{(1-d_s)^t}; \text{ from decline curves } d_m = d_s$$

and t is the same for either zone

$$\text{then } \frac{(1-d_m)^t}{(1-d_s)^t} = 1 \text{ and } \frac{Q_m}{Q_s} = \frac{Q_{mi}}{Q_{si}} \quad (4)$$

Solve (4) for either Q_m or Q_s and substitute into (3) to get:

$$(5) Q_t = Q_s \left(\frac{Q_{mi}}{Q_{si}} \right) + Q_s \text{ or } (6) Q_t = Q_m + Q_m \left(\frac{Q_{si}}{Q_{mi}} \right)$$

Knowing Q_t = Actual Production

Q_{mi} = Initial Rate Morrow tested at in Aug. '82

Q_{si} = Initial Rate Strawn tested at in July-Aug. '82

Can Solve Either (5) or (6) for

$$Q_s = Q_t \left[1 + \frac{Q_{mi}}{Q_{si}} \right]^{-1} \text{ or } Q_m = Q_t \left[1 + \frac{Q_{si}}{Q_{mi}} \right]^{-1}$$

Based on current production:

Q_m = 189 MCF/day

Q_s = 136 MCF/day

Allocation should be 58% Morrow and 42% Strawn.

The following offset operators to Exxon's S. Carlsbad Gas Com. 2, Well #1 were notified of intent to commingle the Strawn and Morrow formations in the well:

Apache Corporation
1900 Houston Natural Gas Bldg.
Houston, Texas 77002

J. M. Huber
2000 West Loop South
Houston, Texas 77027

Samedan
900 Wall Towers East
Midland, Texas 79701

Troporo Oil & Gas Co.
619 W. Texas, Room 104
Midland, Texas 79701

7/ma

OIL CONSERVATION COMMISSION

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

October 29, 1973

C
O
P
Y

Exxon Corporation
Box 1600
Midland, Texas 79701

Re: Order No. MC-2074

Gentlemen:

Enclosed herewith please find Administrative Order No. MC-2074 for your South Carlsbad Gas Com. No. 2 Well No. 1 located in Unit J, Section 27, Township 23 South, Range 26 East, NMPM, Eddy County, New Mexico, to produce gas from the South Carlsbad Strawn Gas Pool and from the South Carlsbad Morrow Gas Pool.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/WEA/og

cc: Oil Conservation Commission
Drawer DD
Artesia, New Mexico

12/13/82

Memo

From

MICHAEL E. STOGNER
PETROLEUM ENGINEER

To Les Clements

Per our conversation today,
may I have your blessing
on this application.

Attached.

M. Stogner

Phone Conversation w/Les - OK

11/17/82

Memo

From

MICHAEL E. STOGNER
PETROLEUM ENGINEER

To Les Clemente

*I have not received anything from
the Petrolia Office concerning this,
may I have your blessing. See attached
application cover-letter.*

M. Stogner