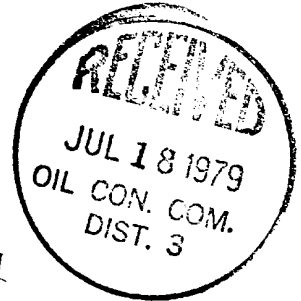




Southland Royalty Company

July 16, 1979

New Mexico Department of Energy & Minerals
Oil and Gas Division
Mr. Joe D. Ramey
P. O. Box 2088
Santa Fe, NM 87501



RE: Frontier "C" #2R
SE Sec. 5, T27N, R11W

Dear Sir:

Southland Royalty Company proposes to drill the Frontier "C" #2R Dakota well and requests an administrative ruling that this well is a "necessary infill well" as defined in Order #R-6013.

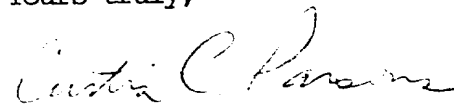
The acreage dedicated to the well is the E/2 of Section 5, T27N, R11W, San Juan County, New Mexico. The only other well on this acreage which has been completed in the Dakota is the Frontier "C" #2 which is no longer capable of production. A well history and mechanical description of this well are enclosed (A).

Also enclosed are the following:

- * Nine Section Production Map (B)
- * Nine Section Structure Map (C)
- * Nine Section Isopach of the Dakota Zone (D)
- * Production Decline Graph for Frontier "C" #2 (E)
- * Reserve Estimate for the proposed new well (F)
(It should be noted that the Frontier "C" #2 is not capable of any further production. Therefore, all reserves should be considered "additional reserves" in the proposed new well.)
- * State Form C-102 (G)
- * U.S.G.S. Form 9-331 (H)
- * Copy of Administrative Order #NSL-1018 authorizing a non-standard location (I)

The proposed well has not yet been spudded. All offset operators have been notified of this application by registered mail.

Yours truly,


Curtis C. Parsons
District Engineer

CCP/kde

SOUTHLAND ROYALTY COMPANY - PERTINENT DATA

FRONTIER "C" # 2

Location: 1750' FSL & 890' FEL, Section 5, T27N, R11W, San Juan County, New Mexico

Field: Kutz Gallup - Basin Dakota Elevation: 6114' GR

<u>Casing Size</u>	<u>Wt. & Grade</u>	<u>Depth</u>	<u>Hole Size</u>	<u>Cement</u>
10 3/4"	28.60#	176'	13 3/4"	100 sx
7"	23# J-55 & N-80	6610'	8 3/4"	200 sx (1st stage)
(SEE ATTACHED SCHEMATIC)				100 sx (2nd stage)

Top of Cement: 1700' by Temperature Survey

<u>Tubing Size</u>	<u>Wt. & Grade</u>	<u>Depth</u>
2 3/8"	4.7#, J-55, IJ	5931' (stung in parallel string anchor)
2 3/8"	4.7#, J-55, EUE	6445' (stung thru parallel anchor and into model "D" packer at 6440')

Wellhead Equipment: OCT - 3000# dual wellhead

Completion:

Dakota - Perfd 6506' - 6548' w/4 SPF. Fracd w/32,970 gals. oil & 31,000# sand

Gallup - Perfd 5913' - 5930' w/4 SPF. Fracd w/46,200 gals. oil & 48,000# sand

Perfd 5834' - 5861' w/4 SPF. Fracd w/37,000 gals. oil & 37,000# sand

Workover History:

March, 1978: MOL. Tried to unseat pump. Could not. Backed off 44 rods. Tried unsuccessfully to pull both strings of tubing. Casing appears to be collapsed above parallel string anchor at about 3900'. Put wellhead back on and rigged down.

IT DOES NOT APPEAR POSSIBLE TO RETURN THIS WELL TO PRODUCTION DUE TO SEVERE MECHANICAL PROBLEMS.

- 5-22-59 Move on San Juan Drilling Rig No. 3. Spud Well at 8:00 P.M.
- 5-23-59 Total Depth 180'. Ran 4 joints, 10-3/4", 28.60#, S.W. Csg. (161') set at 176' with 100 sacks regular cement, 2% CaCl₂ circulated to surface. Held 500#/30 Minutes.
- 6-2-59 Pull Core #1. 5770'-5830'. Recovered 60'.
- 6-3-59 Pull Core #2. 5850'-5865'. Recovered 13'.
- 6-6-59 Pull Core #3. 6475'-6535'. Recovered 60'.
- 6-7-59 Pull Core #4. 6535'-6555'. Recovered 19.5'.
- 6-9-59 Pull Core #5. 6570'-6610'. Recovered 40'.
- 6-11-59 TD 6616'. Ran ES-IND 180'-6606'; Sonic 5400'-6606'; ML 5400'-6606'.
- 6-12-59 Ran DST 5900'-5950'. Tool open 5 min. Initial SIP after 60 min. 1627. Open tool 2" - 5". Good blow, gas to surface in 4 min. Gas estimated at 20-40 mcf. FP--114-313. Second SIP in 45 min. - 1524#. Recovered 800' free oil.
- 6-13-59 Ran 173 joints 7", 23.00# (Lower 971' N-80; upper 5627' J-55) N-80 & J-55 Csg. (6598') set at 6610' with 200 sacks 50/50 Pozmix, 2% gel., 25#/sk. Flocele. Two-stage collar at 2176' cemented with 100 sacks neat cement. Held 1000#/30 Min. Top of upper stage cement at 1700' by temperature survey.
- 6-16-59 Move on J. P. Gibbins Rig No. 202.
- 6-17-59 COTD--6570'. Spotted 400 gals. 7-1/2% BDA on bottom.
- 6-18-59 Ran GR-CL & Cemotron log 4200-6570 & 1400-2800. Top of cement on lower stage logged at 4430. Upper stage top logged at 1740'. Perf. 4 shots/foot 6506-6548. Sandoil fracture perfs. with 32,970 gals. oil & 31,000# sand. Flush with 21,000 gals. oil. IR: 57.2 bpm. MTP--2400#, BDP--2200#, ATP--2300#. Dropped 84 rubber balls one time.
- 6-19-59 Flow Dakota 15 hours. Flowing 5,500 MCFPD; 800# CP; 275# spr. pres.
- 6-20-59 Flow Dakota 24 hours. Flowing 5,000 MCFPD; CP--120#. Kill well with 400 bbls. water. Set Baker Model "D" prod. packer at 6440'. Went in hole with Model "D" seal assembly and 2" tbg. Swab in Dakota and flow thru 2" tbg. to clean off water.
- 6-21-59 Flowing 2,300 MCFPD thru 3/4" choke. Pull tbg. and seal assembly. Go in with modified "DR" plug. Set plug in Model "D" prod. pkr. Held 1200# O.K. Spotted 400 gals. 7-1/2% BDA 5925'-5700'. Perf. 4 shots/foot 5913'-5930'.
- 6-22-59 Sandoil fracture perfs. 5913'-5930' with 46,200 gals. oil and 48,000# sand; flush with 9,828 gals. oil. Injection Rate: 57.7 bpm. MTP--2150#, BDP--2100#, ATP--2000#. Went in with 2" tbg. and Baker Fulbore pkr. Set pkr. at 5794'. Swab Gallup Zone to test.
- 6-23-59 Flow for 6 hours. Recovered 144 bbls. oil. 1422 bbls. load oil remaining. FPT--25#; 3/4" choke.
- 6-24-59 Flow for 22 hours. Recovered 480 bbls. oil. GOR 400/1; FPT-145#; 3/4" choke; 120# spr. pres. 1042 bbls. load oil in hole.
- 6-25-59 Flow for 22 hours; recovered 587 bbls. FPT--220#; FP spr.-110#; 3/4" choke. Load oil to be recovered--455 bbls.
- 6-26-59 Flow for 23 hrs.; recovered 455 bbls. load oil; 148 bbls. new oil at rate of 25 bbls./hr. GOR 1050/1. FPT--200#; FP spr. 160#; 3/4" choke.
- 6-27-59 Flow well 24 hours; recovered 483 bbls. oil; FPT-110#; FP-spr. 10-50#; 3/4" choke.
- 6-28-59 Flow well 24 hours; recovered 508 bbls. FPT--90-130#; FP spr. 10-40#; 3/4" choke; GOR 1100/1.

- 6-29-59 Flow well 24 hours; recovered 463 bbls. oil. FPT-60-125#; FP spr. 20-35#; 3/4" choke; GOR 1250/1. Pulled pkr. and tbg. Perf. 4 shots/foot 5834'-5861'. Set Baker Retrievable Bridge Plug at 5868'. Spot 250 gals. 7-1/2% BDA.
- 6-30-59 Sandoil fracture perfs. with 37,100 gals. oil and 37,000# sand; flush with 10,060 gals. oil; Injection Rate: 56.4bpm; MTP--3600#; BDP--2675#; ATP-2600#. Dropped 54 rubber balls one time.
- 7-1-59 Found 93 bbls. salt water in casing while cleaning out sand. Also found shale cavings mixed with sand cleaned out.
- 7-2-59 Went in hole with Baker Retrievable Bridge Plug and Fulbore pkr. Set BP at 5813'. Tested with 2000#. Came up the hole with Fulbore testing for leak. Found split casing at 4000'. Cemented with 200 sacks neat cement. Held no squeeze pressure. WOC 12 hours. Resqueezed with 100 sacks neat cement. Final pressure 3000#. Left 100' cement in casing.
- 7-5-59 Drilled out cement in casing. Test casing with 1600#. Pull retrievable bridge plug.
- 7-6-59 Go in with Fulbore and 2" tbg. to test perfs. 5834'-5861'. Set Fulbore at 5812'. Swab 88 bbls. oil in 5-1/2 hours. 1328 bbls. load oil remaining.
- 7-7-59 Swab and flow 24 hours for 424 bbls. recovery. FPT--50# thru 3/4" choke. 904 bbls. load oil in hole.
- 7-8-59 Swab and flow 301 bbls. in 20 hours. GOR 1100/1. 603 bbls. load oil in hole.
- 7-9-59 Flow 218 bbls. oil in 19 hours. GOR 500/1; FPT--45#; FP Spr. 45#. 235 bbls. load oil in hole.
- 7-10-59 Flow 404 bbls. oil in 24 hours; GOR 760/1; made 16 bbls./hour; FPT--50#; FP Spr. 50#.
- 7-11-59 Flow 279 bbls. new oil in 16 hours. 3/4" choke; flow pressure as before. Pulled Fulbore packer. Pulled retrievable bridge plug and mod. "DR" plug.
- 7-12-59 Ran 202 joints, 2-3/8", 4.70#, J-55 EUE tbg. (6435'); landed at 6445'; latched into Model "D" at 6440'. 20,000# strain placed in Dakota tbg. string. Baker Mod. 699 dual string latching sub located at 5931'. Ran 193 joints, 2-3/8", 4.70#, J-55 EUE thd'd with Hardy-Griffin pins and boxes (5921'); landed at 5931' and latched into dual string sub; this string has 14,000# strain on it; seating nipple is at 5924'.
- 7-14-59 Swab in Gallup zone. Flowing 10 bbls./hour when shut-in.
- 7-22-59 Potential Test on Dakota zone -- 3 hour open flow thru 3/4" choke -- SIPT -- 2069# (D); FPT--239# (D); choke volume - 2,850 MCF; CAOF - 2,990 MCFPD.
- 7-23-59 Potential Test on Gallup Zone - 216 bbls. oil per 24 hours; 260 mcf gas; oil gravity 39.3° API; GOR - 1202/1; flowing thru 2" tbg. and 24/64" choke; FPT--150; FPC--400.

3-29-78

MIRU-Big A Well Service @ 9:30 AM 3-29-78. Work pump could not unseat, backed off 44 rods. PU on short string, could not get out parallel string anchor. Stripped off tbg head, removed donuts. Worked w/short string again, could not work free pt, indicated free pt on short string by stretch 3900'. GO ran free pt. survey on long string, indicated free pt 3800'.

3-30-78

Pumped in annulus. Hole loaded @ 49 bbls. Circ. long string w/100 bbls. Pumped total 150 bbls. Tried working short string free, could not. Reran 44 rods, screwed bk onto rod string. Working rod string, no pump action. Pumped dwn annulus. Hole loaded again @ 50 bbls. Circ short string. Circ. out approx 50 bbls of oil and thi paraffin. Worked pump again, could not free. Pumped 150 gals acid down annulus, spot @ parallel string anchor. Circ. out approx. 200 bbls, drlg mud. Let acid set 30 minutes, worked rod string and short tbg string, no luck. Circ. hole thru short string. Trying to back off rods.

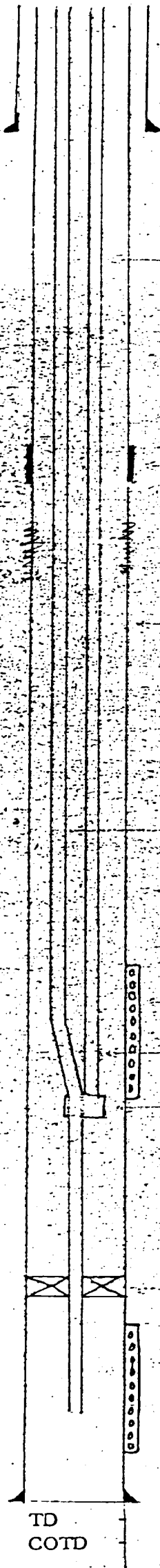
3-31-78

Tried backing rods off deeper could not. Rods strings would not stay together. Pulled and laid dwn 44 rods. Stacked out both tbg string. NU wellhead. Rel rig @ 1:30 3-31-78.

SCHEMATIC DIAGRAM OF DUAL COMPLETION
FRONTIER NO. 2-C (GD)
NE SE Section 5, Township 27N, Range 11W

(A-#5)

DUAL STRING
XMAS TREE



10-3/4", 32.75#, J-55, ST & C Surface Casing (161') set at 176' with 100 sacks cement circulated to surface.

Gallup Production Tubing 2-3/8", 4.70#, J-55, (5921') set at 5931' with Latching Sub Set in Baker Model 699 Parallel String Anchor. 5911' Integral Joint (Hardy-Griffin) EUE Tbg. with 10' Accessories.

Baker Model "J" Stage Cementing Collar Set at 2176'. Cemented with 100 sacks Cement. Top of Cement by Temperature Survey at 1700'.

* Casing appears to be collapsed at about 3800'.

7", 23.00# Production Casing (Lower 971' N-80, Upper 5627' J-55); set at 6610' with 200 sacks cement. Top of Cement by Radioactive Logging at 4430'.

Dakota Production Tubing 2-3/8" OD; 4.70#, J-55 (6434') set at 6445'. 10' Accessories; 6421' J-55 EUE Tbg.

Gallup Formation Perforated 5834'-5861' (4 sh./ft.) Sandoil Fractured with 37,100 Gals. Oil & 37,000# Sand. Perforated 5913'-5930' (4 sh./ft.) Sandoil Fractured with 46,200 Gals. Oil & 48,000# Sand. Pump Seating Nipple (1-25/32" ID) @ 5924'.

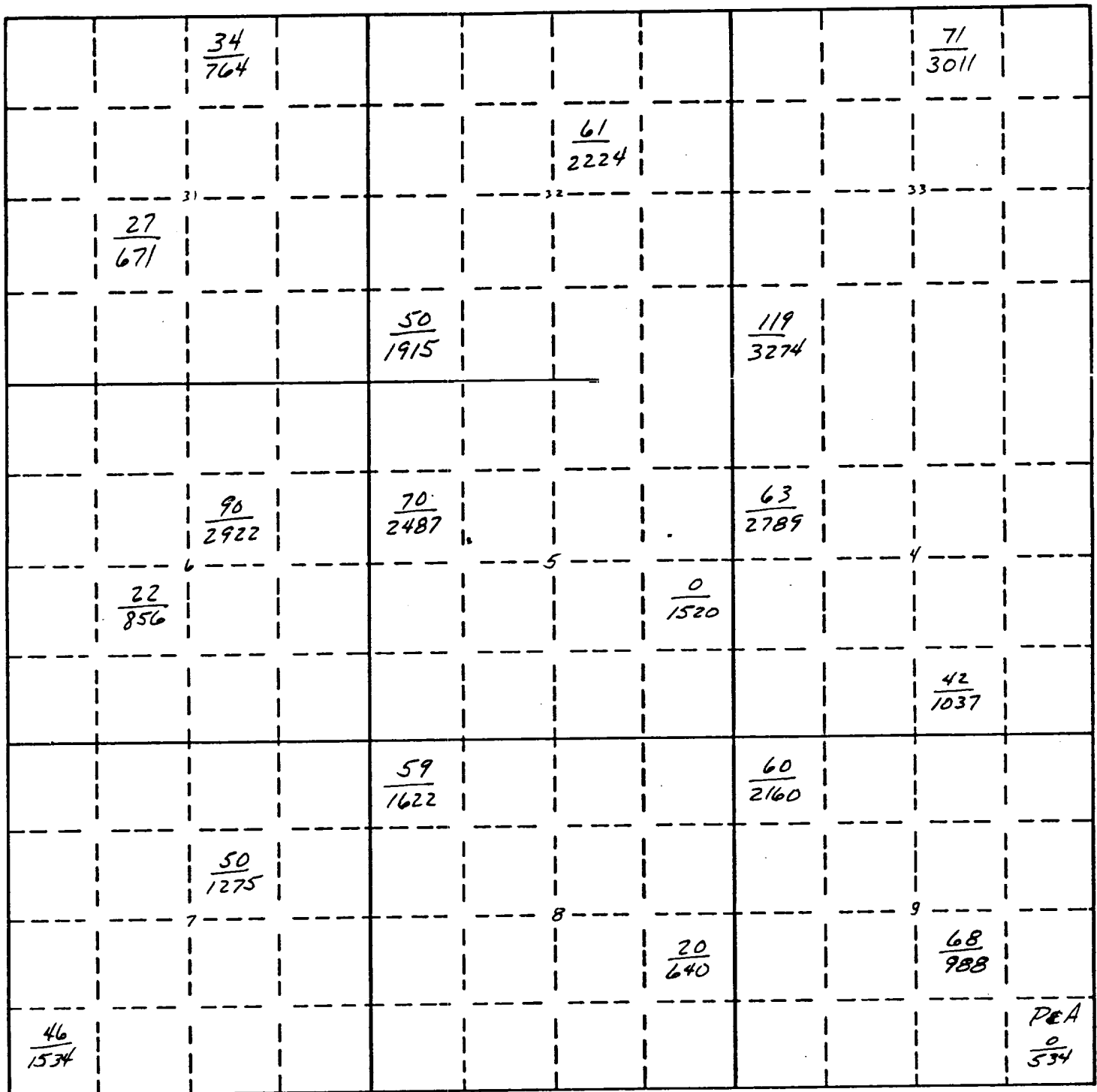
Baker Model 699 Parallel String Anchor set in Dakota Production Tubing at 5932'.

Baker Model "D" Permanent Type Completion Packer Set at 6440'.

Dakota Formation Perforated 6506'-6548' (4 sh./ft.) Sandoil Fractured with 32,970 Gals. Oil & 31,000# Sand.

TD
COTD

6616'
6570'



T
28
N

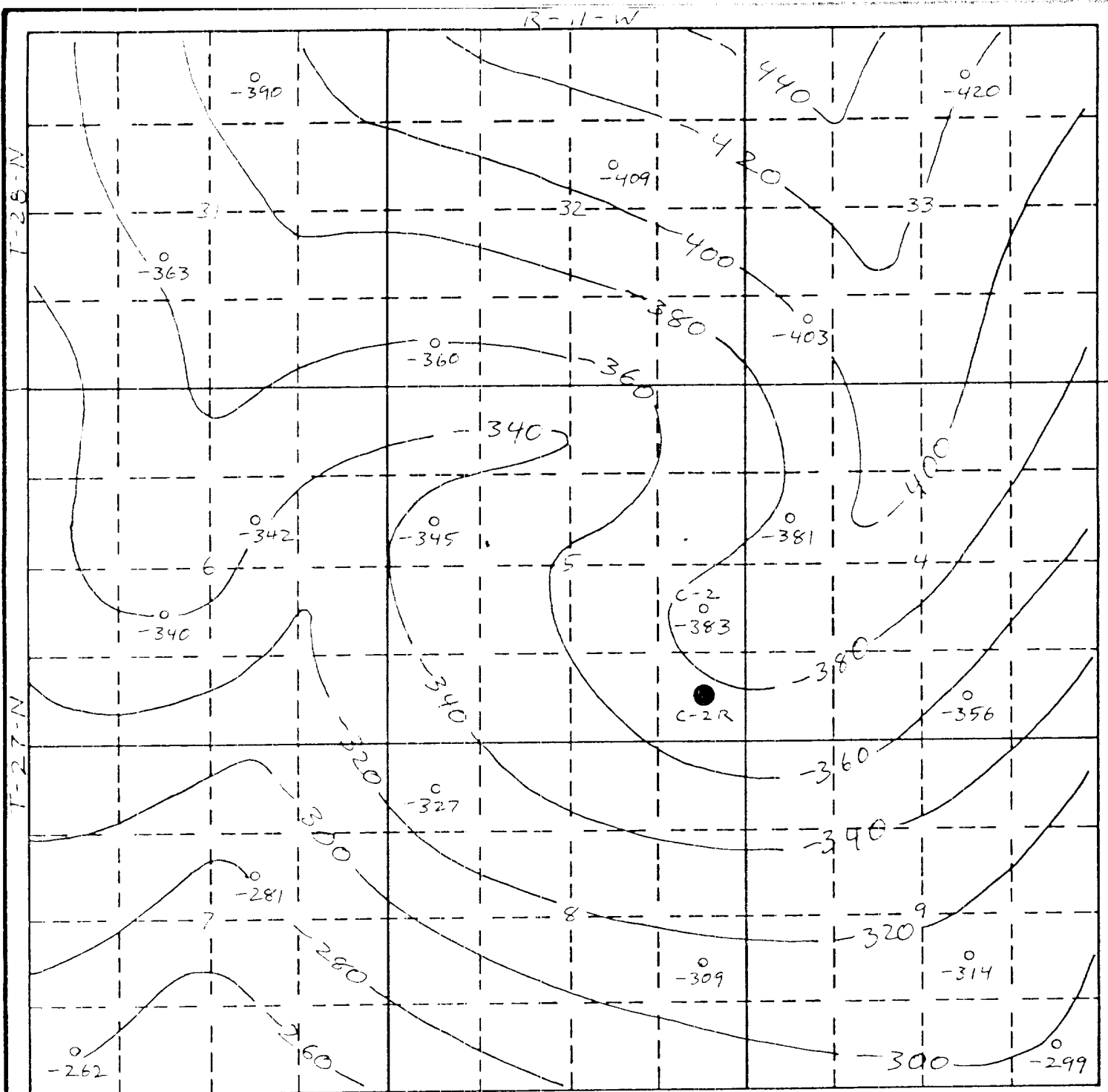
T
27
N

R-11-W

S.R.C.

XXX MMCF - 1978
XXXX MMCF Cum. - 12/78

SOUTHLAND ROYALTY COMPANY					
AREA Basin Dakota - Frontier C2R					
LOCATION 600' FSL 900' FEL Sec 5, T27N, R5W					
TYPE OF MAP Gas Production					
CONTOURED				C.I.	
BY CCP	DATE	REVISED BY	DATE	REFERENCE	DATE 6-25-79
NOTES					



S.R.C.

SOUTHLAND ROYALTY COMPANY

AREA

LOCATION
T-27, 28-N, R-11-W

TYPE OF MAP

DAKOTA STRUCTURE

CONTOURED

CL 20'

BY

R.U.P.

DATE

REVISED BY

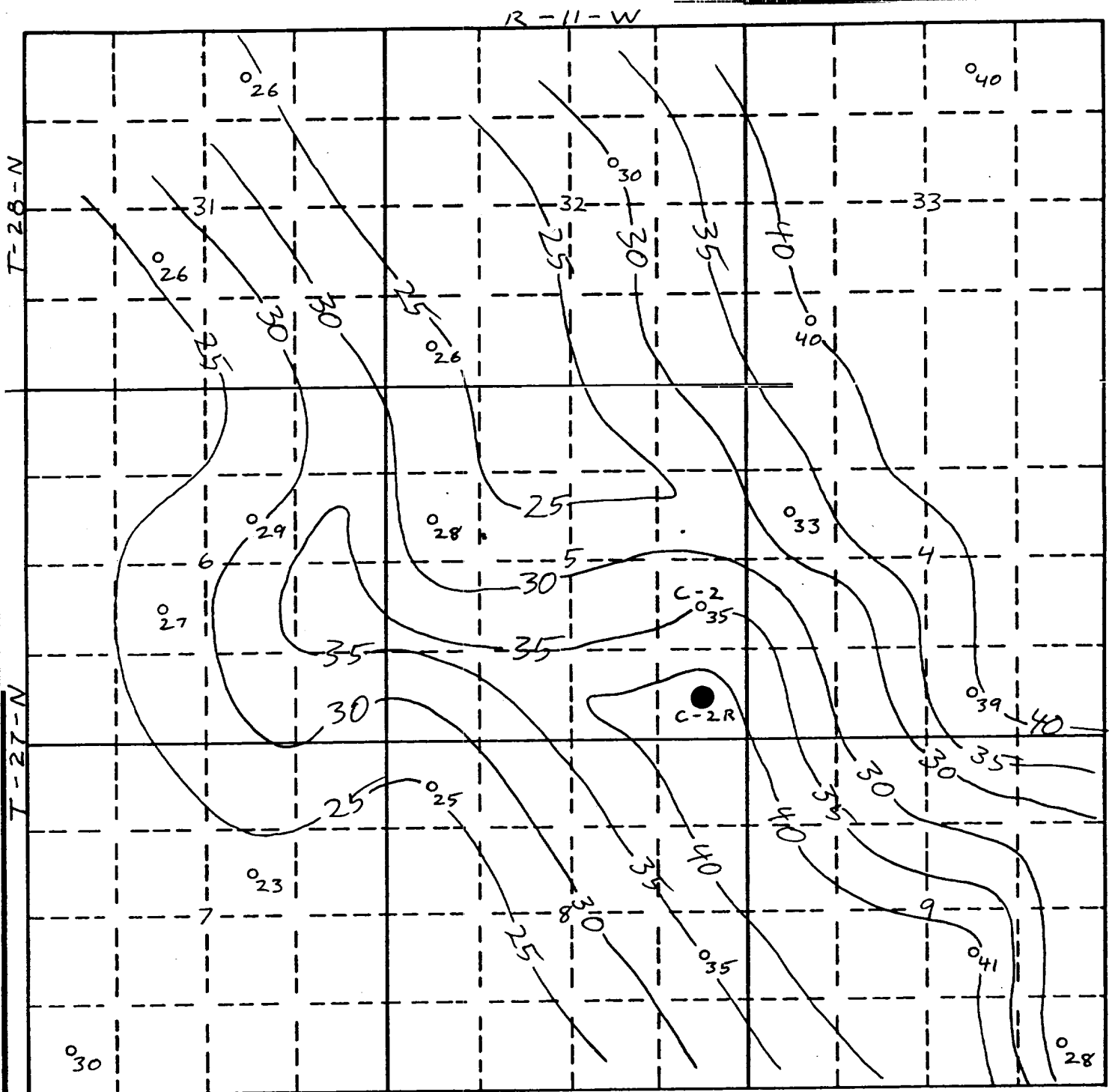
DATE

REFERENCE

DATE

6-28-79

NOTES



S.R.C.

SOUTHLAND ROYALTY COMPANY

AREA

LOCATION
T-27, 28-N, R-11-W

TYPE OF MAP
DAKOTA ISOPACH

CONTOURED CL 5'

BY R.U.P.	DATE	REVISED BY	DATE	REFERENCE	DATE 6-28-79
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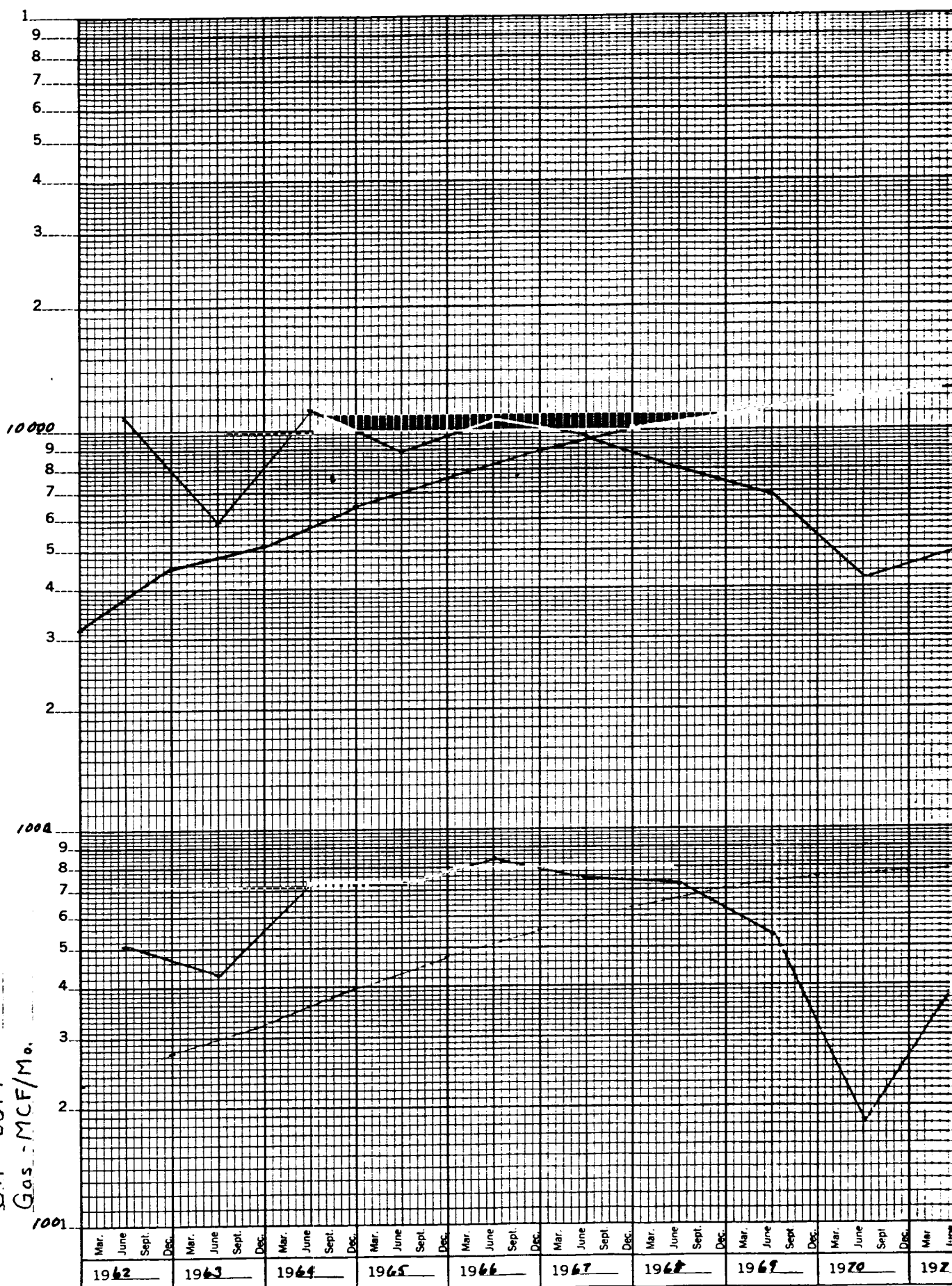
NOTES

47 6843

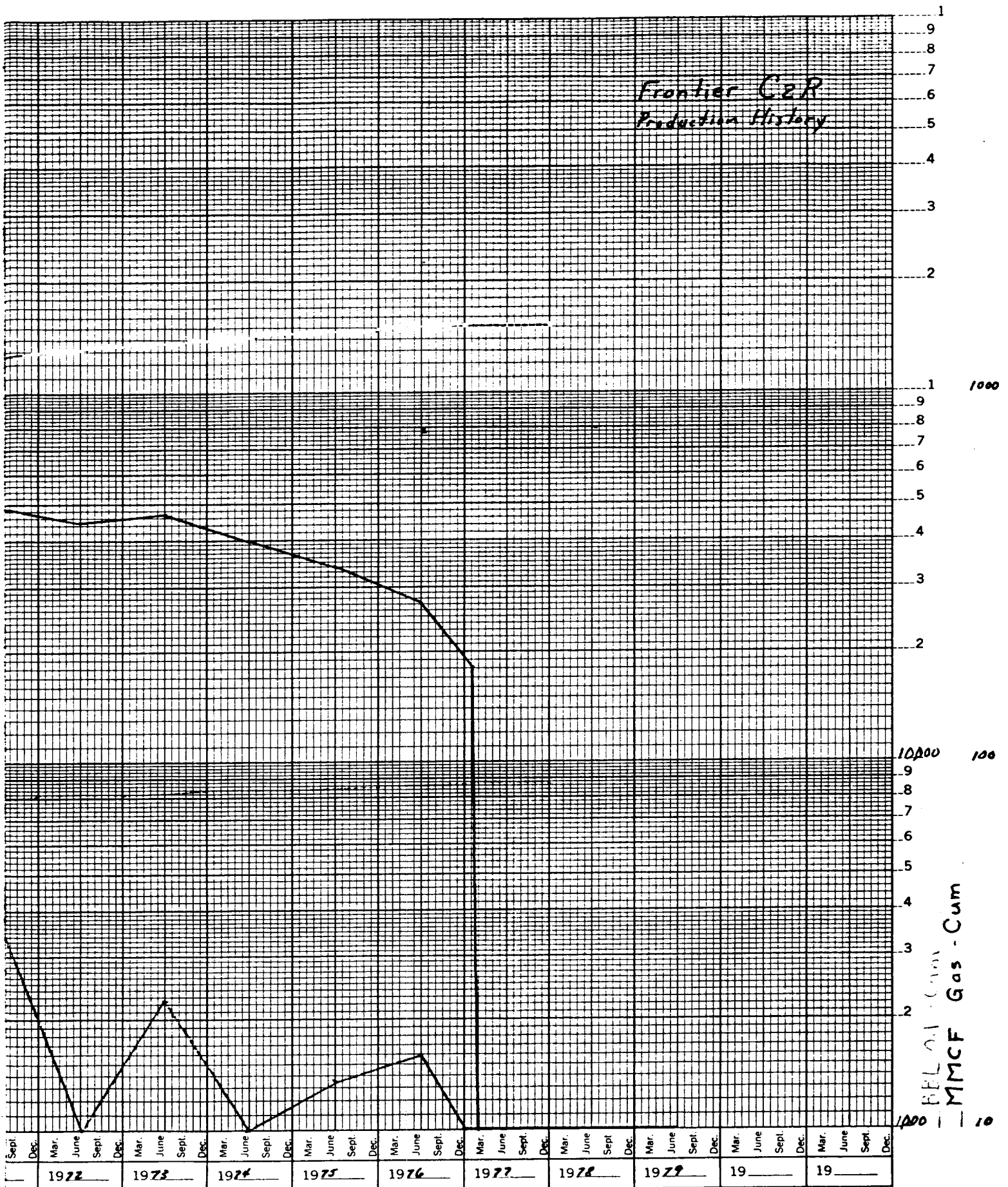
K-E 20 YEARS BY MONTHS X 3 LOG CYCLES
KEUFFEL & ESSER CO. MADE IN U.S.A.

2 1/2 -

Oil - BOPY
Gas - MCF/Mo.



Frontier C&R Production History





Southland Royalty Company

INTER OFFICE CORRESPONDENCE

FROM: J. F. Berry

DATE: July 2, 1979

TO: Curt Parsons

SUBJECT: Frontier "C" No. 2 Reserves
Section 5-27N-11W

1-1-77: Listed below are the reserves for the subject well effective

	<u>Barrels</u>	<u>MCF</u>
Gross	3,365	1,115,049
Net	2,082	689,937

These came from a 1-1-77 Gruy report which gave Aztec a working interest of .75000 and a net interest of .61875. They were calculated by a pressure depletion method.


J. F. Berry

JFB/nm

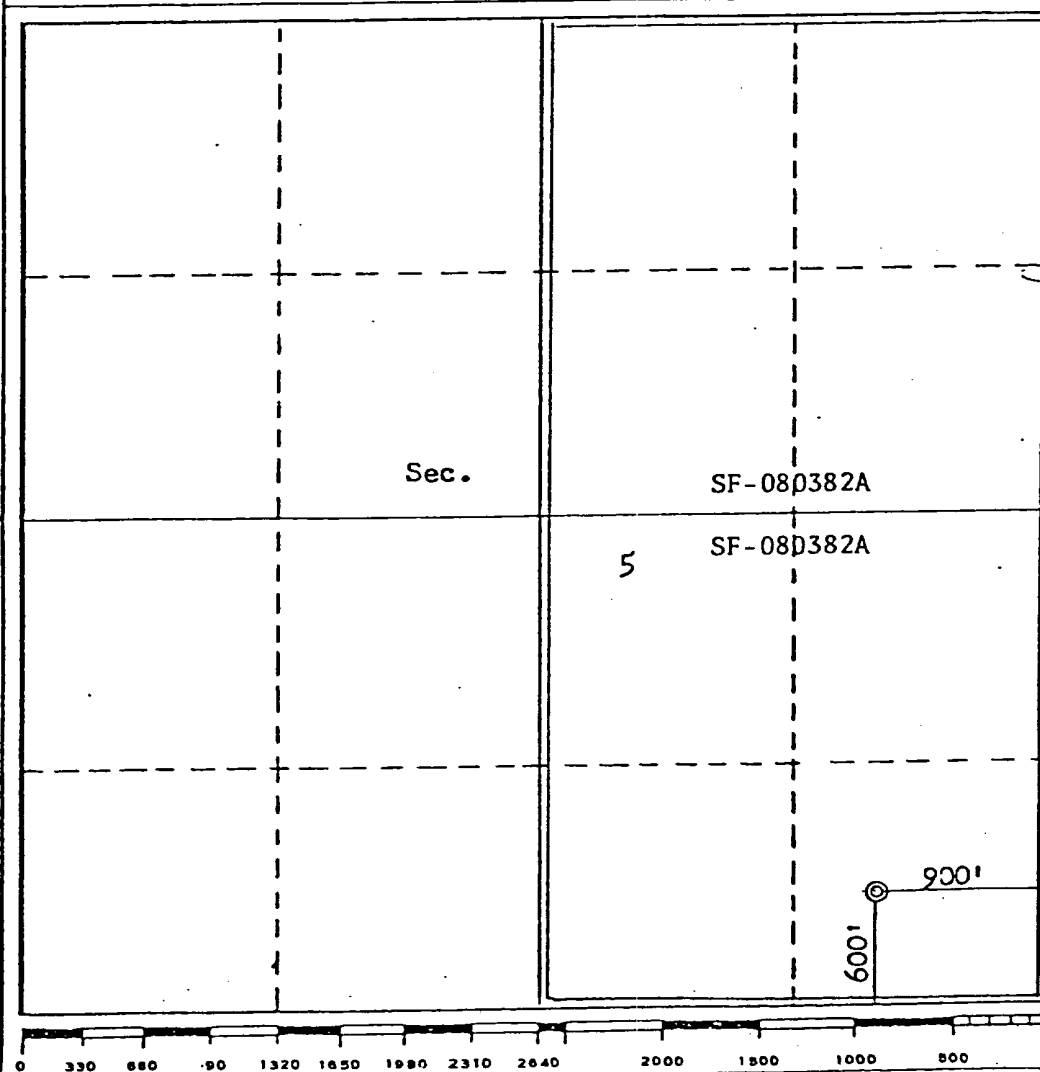
Operator SOUTHLAND ROYALTY COMPANY			Lease FRONTIER "C"		Well No. 2R
Unit Letter P	Section 5	Township 27N	Range 11W	County San Juan	
Actual Footage Location of Well: 600 feet from the South line and 900 feet from the East line					
Ground Level Elev. 6127	Producing Formation Dakota		Pool Basin		Dedicated Acreage: 320 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes ☐ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.

**CERTIFICATION**

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name _____

Position _____

District Production Manager

Company _____

Southland Royalty Company

Date _____

March 5, 1979

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed _____

February 12, 1979

Registered Professional Engineer and/or Land Surveyor

Fred B. Kerr

Certificate No. _____

3950**FRED B. KERR, JR.**

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

5. LEASE DESIGNATION AND SERIAL NO.
SF-080382A

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK
DRILL ☒ DEEPEN ☐ PLUG BACK ☐

b. TYPE OF WELL
OIL WELL ☐ GAS WELL ☒ OTHER ☐ SINGLE ZONE ☒ MULTIPLE ZONE ☐

2. NAME OF OPERATOR

Southland Royalty Company

3. ADDRESS OF OPERATOR

P. O. Drawer 570, Farmington, New Mexico

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)
At surface

600' FSL & 900' FEL

At proposed prod. zone

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*

7 miles south/southwest of Bloomfield, New Mexico

15. DISTANCE FROM PROPOSED*
LOCATION TO NEAREST
PROPERTY OR LEASE LINE, FT.
(Also to nearest drilg. unit line, if any)

18. DISTANCE FROM PROPOSED LOCATION*
TO NEAREST WELL, DRILLING, COMPLETED,
OR APPLIED FOR, ON THIS LEASE, FT.

16. NO. OF ACRES IN LEASE

19. PROPOSED DEPTH

6650'

17. NO. OF ACRES ASSIGNED
TO THIS WELL

320

20. ROTARY OR CABLE TOOLS

Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.)

6127'

22. APPROX. DATE WORK WILL START*

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
12-1/4"	8-5/8"	24#	200'	140 SXS
7-7/8"	4-1/2"	10.5#	6650'	220 sxs (1st Stage)
				275 sxs (2nd Stage)
				240 sxs (3rd Stage)

Top of Ojo Alamo sand is at 1130',

Top of Pictured Cliffs sand is at 1888',

Top of Mesa Verde sand is at 3492',

Fresh water mud will be used to drill from surface to total depth.

It is anticipated that an IES and a GR-Density log will be run at total depth.

No abnormal pressures or poisonous gases are anticipated in this well.

It is expected that this well will be drilled before June 15, 1979. This depends

on time required for approvals, rig availability and the weather,

Gas is dedicated.

This is an unorthodox location. Application is being made to N.M.O.C.C. for approval.

RECEIVED
MAR 7 1979

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED

TITLE

District Production Manager DATE March 5, 1979

(This space for use of State agency, if any)

APPROVED

PERMIT NO.

MAR 27 1979

APPROVAL DATE

APPROVED BY

CONDITIONS OF APPROVAL

DISTRICT ENGINEER

"APPROVAL TO FLARE GRANTED
WHILE DRILLING AND TESTING."

*See Instructions On Reverse Side

OPERATOR



OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR
LARRY KEHOE
SECRETARY

April 3, 1979

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-2434

Southland Royalty Company
P. O. Drawer 570
Farmington, New Mexico 87401

Attention: Curtis C. Parsons

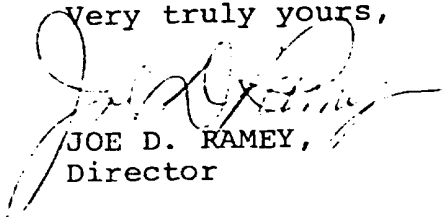
Administrative Order NSL-1018

Gentlemen:

Reference is made to your application for a non-standard location for your Frontier "C" Well No. 2-R to be located 600 feet from the South line and 900 feet from the East line of Section 5, Township 27 North, Range 11 West, NMPM, San Juan County, New Mexico.

By authority granted me under the provisions of Rule 3 of Order No. R-1670-C, the above-described unorthodox location is hereby approved.

Very truly yours,


JOE D. RAMEY,
Director

JDR/RLS/dr

cc: Oil Conservation Division - Aztec
Oil & Gas Engineering Committee - Hobbs
U. S. Geological Survey - Farmington

RECEIVED
APR 06 1979
FARMINGTON DISTRICT