Release Sept. 16, 1985

Southland Royalty Company

August 21, 1985

Mr. Richard L. Stamets, Director
New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87501

RE: Downhole Commingling Dakota/Gallup
SRC - Jicarilla 101 #3E
NW/4, Section 1, T26N, R4W
Rio Arriba County, New Mexico

Dear Mr. Stamets: Gave verbal okay 9-17-85. Told them to call to F.C.

Southland Royalty Company hereby requests permission to downhole commingle Basin Dakota and BS Mesa Gallup production from the above captioned dual well. The Gallup formation does not produce sufficient quantities of gas to lift the oil it produces. It is felt that the additional gas from the Dakota will allow Gallup hydrocarbons to be produced more efficiently and effectively.

Southland Royalty is currently planning to complete the Mesaverde in the subject well. As casing size will not permit a triple completion, commingling the Dakota and Gallup will allow the Mesaverde to be produced through tubing which is isolated from other producing zones within the wellbore. Based on decline curve analysis reserves of approximately 19 MMCF remain to be produced from the Gallup.

The gas produced from each zone is similar, and although oil gravities differ slightly, it is not felt that this difference will adversely effect production from either formation. Bottom hole pressures differ by only 300 psi, and therefore crossflow and lost production from the proposed commingle should not occur.

A current deliverability test for the Dakota is attached. A current deliverability test for the Gallup is not available. However, the required Gallup shut in pressure report for 1985 is attached along with the most recent deliverability test. As very little production has occurred since the March, 1983 test, it is felt that the test is still representative of the Gallup formation's ability to produce in the subject well. Production plats, decline curves, and miscellaneous data for both zones are also attached. Working interests and royalty ownership in both formations in the Jicarilla 101 #3E are identical.

The proposed production allocation between the Dakota and Gallup is based on production performance from each well's decline curve. The proposed allocation is as follows:

Oil Production:	Dakota 98% Gallup 2%
Gas Production:	Dakota 95% Gallup 5%

A copy of this application has been submitted to the BLM and all offset operators. Please advise if further information is required.

Sincerely,

SOUTHLAND ROYALTY COMPANY

David M. Blandford
Petroleum Engineer

DMB/eg

Attachments

XC: BLM-Farmington, New Mexico
Consolidated Oil & Gas, Inc.-Farmington, New Mexico
El Paso Natural Gas Company-Farmington, New Mexico

MISCELLANEOUS DATA

Dakota Bottom Hole Pressure	=	1220 psi
Gallup Bottom Hole Pressure	=	920 psi
Dakota Oil Gravity	=	64.7° API
Gallup Oil Gravity	=	53.5° API
BTU/cf at 14.73 psia/60°F/Dry (Dakota)	=	1282
BTU/cf at 14.73 psia/60°F/Dry (Gallup)	=	1277

S.R.C.

★ Subject Well

Wild Horse Gallup
BS Mesa Gallup

SOUTHLAND ROYALTY COMPANY					
AREA: Jicarilla 101 #3-E					
LOCATION: (E) Sec 1, T26N, R4W S.J. Co., N.M.					
TYPE OF MAP: Gallup Prod. & Cums.					
CONTOURED				C.I.	
BY	DATE	REVISED BY	DATE	REFERENCE	DATE
NOTES: MCFD-MMCF BOPD-MBO as of 1-1-85					

S.R.C.

★ Subject Well

SOUTHLAND ROYALTY COMPANY

AREA: Jicarilla 101 #3E

LOCATION: (E) Sec 1, T26N, R4W

TYPE OF MAP: Basin Dakota Production & Cums

CONTOURED | C.I.

BY	DATE	REVISED BY	DATE	REFERENCE	DATE

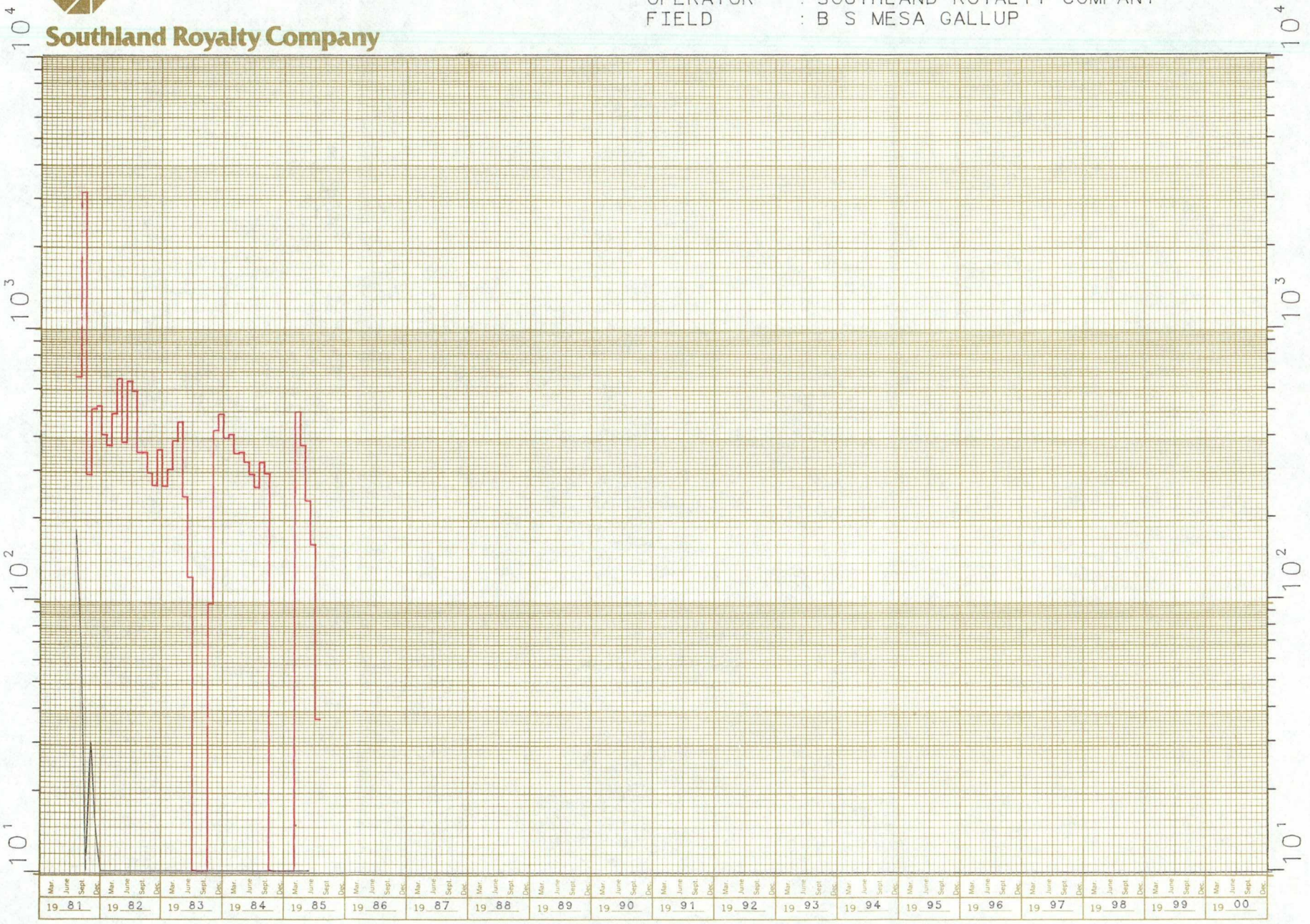
NOTES

MCFD-MMCF
BOPD-MBO, as of 1-1-85

Cums: 16,529 MCF
438 BO

PROPERTY NO: 0020343A
PROPERTY : JICARILLA 101 3E
COUNTY : RIO ARRIBA
STATE : NEW MEXICO
OPERATOR : SOUTHLAND ROYALTY COMPANY
FIELD : B S MESA GALLUP

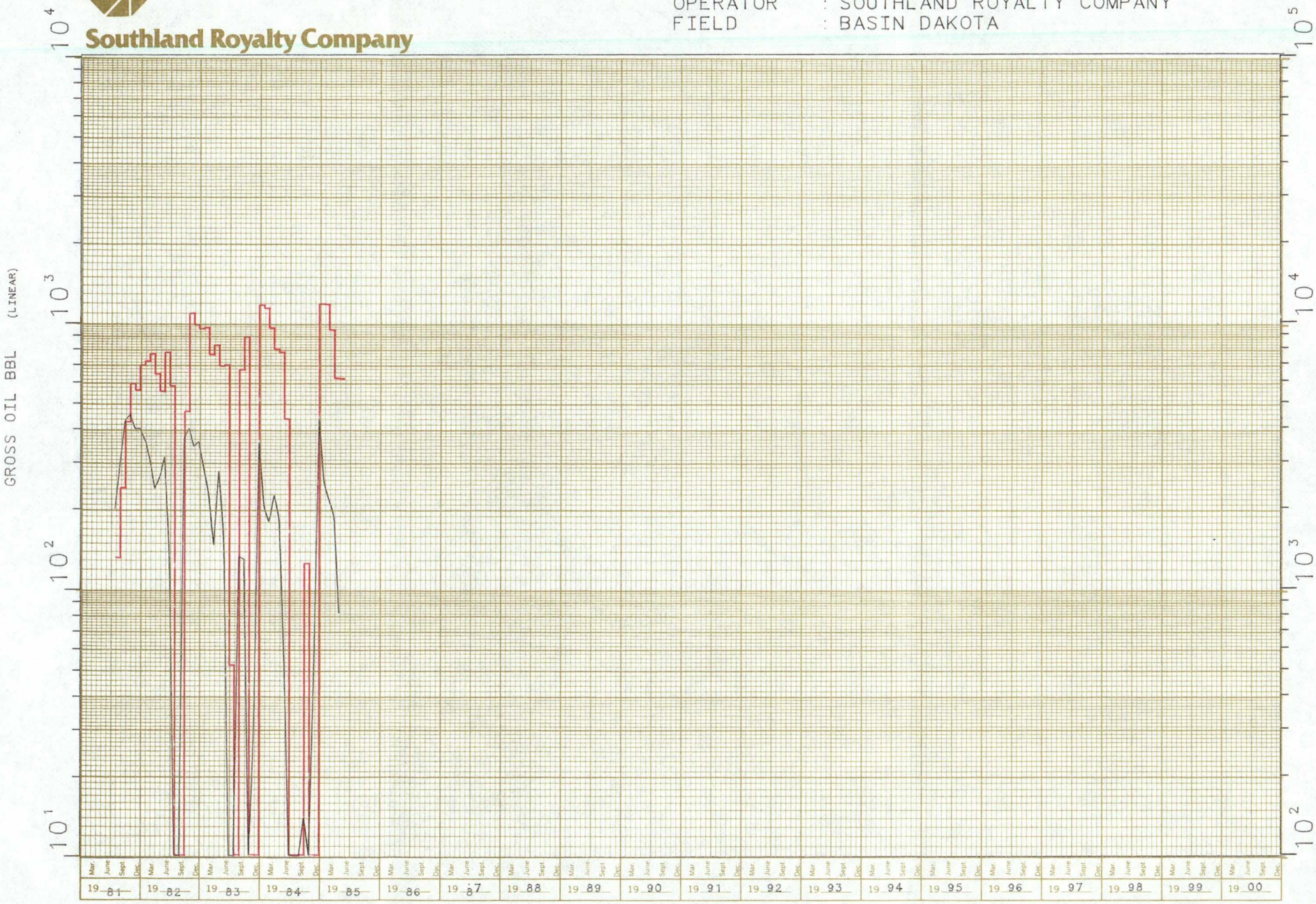
Southland Royalty Company



Cums: 219,660 MCF
8,349 BO

PROPERTY NO: 0020343A
PROPERTY : JICARILLA 101 3E
COUNTY : RIO ARRIBA
STATE : NEW MEXICO
OPERATOR : SOUTHLAND ROYALTY COMPANY
FIELD : BASIN DAKOTA

Southland Royalty Company



OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

Form C-122-A
Revised 10-1-78

WELL DELIVERABILITY TEST REPORT FOR 19 85

POOL NAME	POOL SLOPE	FORMATION	COUNTY
Basin	n=.75	Dakota	Rio Arriba

COMPANY			WELL NAME AND NUMBER		
Southland Royalty Company			Jicarilla 101 #3E		
UNIT LETTER	SECTION	TOWNSHIP	RANGE	PURCHASING PIPELINE	
E	01	26	04	Gas Company of New Mexico	
CASING O.D. - INCHES	CASING I.D. - INCHES	SET AT DEPTH - FEET	TUBING O.D - INCHES	TUBING I.D - INCHES	TOP - TUBING PERF. - FEET
7.6250 5.5000	6.9690 4.9500	4086 8242	2.0625	1.7500	8196
GAS PAY ZONE		WELL PRODUCING THRU		GAS GRAVITY	GRAVITY X LENGTH
FROM 8029 TO 8202		CASING	TUBING X	.746	6114
DATE OF FLOW TEST			DATE SHUT-IN PRESSURE MEASURED		
FROM 04-09-85 TO 04-16-85			04-24-85		

PRESSURE DATA - ALL PRESSURES IN PSIA

(a) Flowing Casing Pressure (DWt)	(b) Flowing Tubing Pressure (DWt)	(c) Flowing Meter Pressure (DWt)	(d) Flow Chart Static Reading	(e) Meter Error (Item c - Item d)	(f) Friction Loss (a - c) or (b - c)	(g) Average Meter Pressure (integr.)
	404	387	387	+0	+17	387
(h) Corrected Meter Pressure (g + e)	**(i) Avg. Wellhead Press. P_t = (h + f)**	**(j) Shut-in Casing Pressure (DWt)**	**(k) Shut-in Tubing Pressure (DWt)**	**(l) P_c = higher value of (j) or (k)**	**(m) Del. Pressure P_d = 40% P_c**	**(n) Separator or Dehydrator Pr. (DWt) for critical flow only**
387	404		1027	1027	411	

FLOW RATE CORRECTION (METER ERROR)

Integrated Volume - MCF/D	Quotient of $\frac{\text{Item c}}{\text{Item d}}$	$\sqrt{\frac{\text{Item c}}{\text{Item d}}}$	Corrected Volume
221	1.0000	1.0000	Q = 221 MCF/D

WORKING PRESSURE CALCULATION

$(1-e^{-s})$	$(F_c Q_m)^2 (1000)$	$R^2 = (1-e^{-s})(F_c Q_m)^2(1000)$	P_t^2	$P_w^2 = P_t^2 + R^2$	$P_w = \sqrt{P_w^2}$
.359	8560	3073	163216	166289	408

DELIVERABILITY CALCULATION

$$D = Q\left[\frac{P_c^2 - P_d^2}{P_c^2 - P_w^2}\right]^n = 221\left[\left(\frac{885808}{888440}\right)^n = (.9970)^n = .9978\right] = 221 \text{ MCF/D}$$

REMARKS:

SUMMARY

Item b	387	Psia
P_c	1027	Psia
Q	221	MCF/D
P_w	408	Psia
P_d	411	Psia
D	221	MCF/D

Company: Southland Royalty Company
By: R. E. Falda
Title: District Manager
Witnessed By:
Company:

MAY 30 1985

GAS COMPANY OF NEW MEXICO
REPORT OF BTU TEST RESULTS

TO: SOUTHLAND ROYALTY CO (4826)

REF: JICARILLA 101 3E (DK)
4826
NORTHWEST NEW MEXICO (70)
DP 36037
DATE OF THIS TEST: 1/29/85 EFFECTIVE DATE 2-25-85
DATE OF LAST TEST: 3/22/84
TEST FREQUENCY: NOT SPECIFIED

RESULTS: SPECIFIC GRAVITY: 0.7456
BTU/CF @ 14.73/60F/DRY: 1282.4

	MOL %	G.P.M.
CARBON DIOXIDE	0.933	0.0000
NITROGEN	0.560	0.0000
METHANE	75.610	0.0000
ETHANE	13.970	3.7410
PROPANE	5.708	1.5750
ISOBUTANE	0.835	0.2730
N-BUTANE	1.525	0.4810
ISOPENTANE	0.432	0.1580
N-PENTANE	0.315	0.1140
HEXANE +	0.250	0.1180
TOTAL	100.018	6.4600

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-125
Revised 3-2-84

GAS WELL SHUT-IN PRESSURE REPORT

Operator	Address	Pool	County
Southland Royalty Company	Farmington, NM 87499 - 570	B S Mesa Gallup	Rio Arriba

LEASE	WELL NO.	LOCATION				DATE PRESS. RUN	TIME S.I. HRS./MIN.	S.I. PRESSURE PSIG (DWT)		
		UNIT	SEC.	TWP.	RGE.					
Jicarilla 101	3E	E	01	26	04	6-04-85	192	SICP - 785 SITP - 785		

I hereby certify that the above information is true and complete to the best of my knowledge and belief. SEE RULE 402

Signature _____ Title District Production Superintendent Date June 6, 1985

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

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

Form C-122-A
Revised 10-1-78

WELL DELIVERABILITY TEST REPORT FOR 19 83

POOL NAME	POOL SLOPE	FORMATION	COUNTY
BS Mesa	n= .75	Gallup	Rio Arriba

COMPANY			WELL NAME AND NUMBER		
Southland Royalty Company			Jicarilla 101 #3E		
UNIT LETTER	SECTION	TOWNSHIP	RANGE	PURCHASING PIPELINE	
E	01	26	04	Gas Company of New Mexico	
CASING O.D. - INCHES	CASING I.D. - INCHES	SET AT DEPTH - FEET	TUBING O.D. - INCHES	TUBING I.D. - INCHES	TOP - TUBING PERF. - FEET
5.5000 7.6250	4.9500 6.9690	8242 4086	1.9000	1.6100	7540
GAS PAY ZONE		WELL PRODUCING THRU		GAS GRAVITY	GRAVITY X LENGTH
FROM 7004 TO 7551		CASING	TUBING X	.709	5346
DATE OF FLOW TEST			DATE SHUT-IN PRESSURE MEASURED		
FROM 3-16-83	TO 3-24-83		3-31-83		

PRESSURE DATA - ALL PRESSURES IN PSIA

(a) Flowing Casing Pressure (DWt)	(b) Flowing Tubing Pressure (DWt)	(c) Flowing Meter Pressure (DWt)	(d) Flow Chart Static Reading	(e) Meter Error (Item c - Item d)	(f) Friction Loss (a - c) or (b - c)	(g) Average Meter Pressure (Integr.)
385	275	272	274	-2	+3	293
(h) Corrected Meter Pressure (g + e)	**(i) Avg. Wellhead Press. P_t = (h+f)**	**(j) Shut-in Casing Pressure (DWt)**	**(k) Shut-in Tubing Pressure (DWt)**	**(l) P_c = higher value of (j) or (k)**	**(m) Del. Pressure P_d = 80 %P_c**	**(n) Separator or Dehydrator Pr. (DWt) for critical flow only**
291	294	677	677	677	542	

FLOW RATE CORRECTION (METER ERROR)

Integrated Volume - MCF/D	Quotient of $\frac{\text{Item c}}{\text{Item d}}$	$\sqrt{\frac{\text{Item c}}{\text{Item d}}}$	Corrected Volume
21	.9927	.9963	Q = 21 MCF/D

WORKING PRESSURE CALCULATION

$(1-e^{-s})$	$(F_c Q_m)^2 (1000)$	$R^2 = (1-e^{-s})(F_c Q_m)^2(1000)$	P_t^2	$P_w^2 = P_t^2 + R^2$	$P_w = \sqrt{P_w^2}$
.322	119	38	86436	86474	294

DELIVERABILITY CALCULATION

$$D = Q\left[\frac{P_c^2 - P_d^2}{P_c^2 - P_w^2}\right]^n = 21\left[\left(\frac{164565}{371855}\right)^n = (.4426)^n = .5426\right] = 11 \text{ MCF/D}$$

REMARKS:

SUMMARY

Item b	291	Psia
P_c	677	Psia
Q	21	MCF/D
P_w	294	Psia
P_d	542	Psia
D	11	MCF/D

Company Southland Royalty Company
By [signature]
Title District Manager
Witnessed By
Company

April 19, 1983

GAS ANALYSIS: TRANSCRIPTION OF TAPE FROM AUTOMATIC CHROMATOGRAPH 1

NAME/LOCATION:
STREAM NO. 3
STATION NO. 4972-G6

SAMPLE DATE: 4/01/85

SPECIFIC GRAVITY 0.7411 ✓ BTU/CF 14.73/60F/DRY: 1277.1 ✓

COMPONENT	MOLE%	G.P.M.
CARBON DIOXIDE	0.824 ✓✓	0.000
NITROGEN	0.421 ✓✓	0.000
METHANE	76.030	0.000
ETHANE	13.930	3.730
PROPANE	5.560	1.534
ISOBUTANE	0.804	0.263
N-BUTANE	1.450	0.457
ISOPENTHANE	0.421	0.154
N-PENTHANE	0.335	0.121
HEXANE	0.248	0.101
TOTAL	100.023	6.360

STATION NAME: JICARILLA 101 3E

LAST BTU TEST DATE 84/03/22
LAST BTU TEST RESULT: 1267

TEST RUN: 09:24 02/04/85 1

TEST TRANSCRIBED ON: 85/04/08

RECEIVED
AUG 15 1985
FARMINGTON DISTRICT

WELL # 4972-G6/762 DUE: 3/22/85
NAME: JICARILLA 101 3E
RUN# 109 FREQ: /12 LAST BTU: 1267
DATE PULLED: 4/1/__ STREAM: 3
DATE TESTED: 4/2/__ TIME: ___

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

DHC-569

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178

OIL CONSERVATION DIVISION
BOX 2088
SANTA FE, NEW MEXICO 87501

DATE 9-24-85

RE: Proposed MC _____
Proposed DHC ✓
Proposed NSL _____
Proposed SWD _____
Proposed WFX _____
Proposed PMX _____

Gentlemen:

I have examined the application dated Sept. 11, 1985

for the Southland Royalty Co. Jicarilla 101 #3E E 1-26N-4W
Operator Lease and Well No. Unit, S-T-R

and my recommendations are as follows:

Approve

Yours truly,

Brent H. Ellis