

ABOVE THIS LINE FOR DIVISION USE ONLY

**NEW MEXICO OIL CONSERVATION DIVISION**  
 - Engineering Bureau -  
 2040 South Pacheco, Santa Fe, NM 87505



2358

**ADMINISTRATIVE APPLICATION COVERSHEET**

THIS COVERSHEET IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATION FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

**Application Acronyms:**

[NSP-Non-Standard Proration Unit] [NSL-Non-Standard Location]  
 [DD-Directional Drilling] [SD-Simultaneous Dedication]  
 [DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]  
 [PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]  
 [WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]  
 [SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]  
 [EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

[1] **TYPE OF APPLICATION - Check Those Which Apply for [A]**

[A] Location - Spacing Unit - Directional Drilling  
☐ NSL ☐ NSP ☐ DD ☐ SD

MAY 24 1999

Check One Only for [B] or [C]

[B] Commingling - Storage - Measurement  
☒ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

[C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery  
☐ WFX ☐ PMX ☐ SWD ☐ IPI ☐ EOR ☐ PPR

[2] **NOTIFICATION REQUIRED TO: - Check Those Which Apply, or ☐ Does Not Apply**

[A] ☐ Working, Royalty or Overriding Royalty Interest Owners

[B] ☒ Offset Operators, Leaseholders or Surface Owner

[C] ☐ Application is One Which Requires Published Legal Notice

[D] ☒ Notification and/or Concurrent Approval by BLM or SLO  
 U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office

[E] ☐ For all of the above, Proof of Notification or Publication is Attached, and/or,

[F] ☐ Waivers are Attached

[3] **INFORMATION / DATA SUBMITTED IS COMPLETE - Certification**

I hereby certify that I, or personnel under my supervision, have read and complied with all applicable Rules and Regulations of the Oil Conservation Division. Further, I assert that the attached application for administrative approval is accurate and complete to the best of my knowledge and where applicable, verify that all interest (WI, F ORRI) is common. I understand that any omission of data (including API numbers, pool codes, etc.), pertinent information and any required notification is cause to have the application package returned with no action take

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

Print or Type Name

Signature

Title

Date

## DISTRICT I

1625 N. French Dr., Hobbs, NM 88240

## DISTRICT II

811 South First St., Artesia, NM 88210

## DISTRICT III

1000 Rio Brazos Rd, Aztec, NM 87410

## DISTRICT IV

2040 S. Pacheco, Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals and Natural Resources Department

## OIL CONSERVATION DIVISION

2040 S. Pacheco  
Santa Fe, New Mexico 87505-6429

## APPLICATION FOR DOWNHOLE COMMINGLING

Form C-107-A  
Revised March 17, 1999

## APPROVAL PROCESS:

☒ Administrative ☐ Hearing

## EXISTING WELLBORE

☒ YES ☐ NO

BURLINGTON RESOURCES OIL &amp; GAS COMPANY

PO Box 4289, Farmington, NM 87499

Operator

Address

Frontier E

1E

G, Sec 4, T27N, R11W

San Juan

Lease

Well No.

Unit Ltr. - Sec - Twp - Rge

County

Spacing Unit Lease Types: (check 1 or more)

OGRID NO. 14538 Property Code 18527 API NO. 30-045-2410200 Federal ☒ State ☐ (and/or) Fee ☐

The following facts are submitted in support of downhole commingling:	Upper Zone	Intermediate Zone	Lower Zone
1. Pool Name and Pool Code	Kutz Gallup - 36550 OIL		Basin Dakota - 71599 PRO GAS
2. Top and Bottom of Pay Section (Perforations)	5812' - 5994'		6556' - 6644'
3. Type of production (Oil or Gas)	Gas		Gas
4. Method of Production (Flowing or Artificial Lift)	Flowing		Flowing
5. Bottomhole Pressure Oil Zones - Artificial Lift: Gas & Oil - Flowing: All Gas Zones: Estimated Current Measured Current Estimated Or Measured Original	(Current) a. 335 psia @ 5903' (Original) b. 2301 psia @ 5903'	a.  b.	a. 317 psia @ 6600'  b. 1461 psia @ 6600'
6. Oil Gravity (EAPI) or Gas BTU Content	1210 BTU		1210 BTU
7. Producing or Shut-In?	Producing		Producing
Production Marginal? (yes or no)	Yes		Yes
* If Shut-In, give date and oil/gas/water rates of last production Note: For new zones with no production history, applicant shall be required to attach production estimates and supporting data	Date: Rates:	Date: Rates:	Date: Rates:
* If Producing, give date and oil/gas/water rates of recent test (within 60 days)	Date: 03/31/99 Rates: 42 MCFD 3 BOD, 0 BWD 25% 86%	Date: Rates:	Date: 03/31/99 Rates: 129 MCFD, 0.5 BOD, 0.3 BWD 75% 14%
8. Fixed Percentage Allocation Formula - % for each zone (total of %'s to equal 100%)	Oil: Gas: Will supply for commingling	Oil: % Gas: %	Oil: Gas: Will supply for commingling

9. If allocation formula is based upon something other than current or past production, or is based upon some other method, submit attachments with supporting data and/or explaining method and providing rate projections or other required data.

10. Are all working, overriding, and royalty interests identical in all commingled zones? ☒ Yes ☐ No  
If not, have all working, overriding, and royalty interests been notified by certified mail? ☐ Yes ☐ No  
Have all offset operators been given written notice of the proposed downhole commingling? ☒ Yes ☐ No11. Will cross-flow occur? ☒ Yes ☐ No If yes, are fluids compatible, will the formations not be damaged, will any cross-flowed production be recovered, and will the allocation formula be reliable. ☒ Yes ☐ No (If No, attach explanation)12. Are all produced fluids from all commingled zones compatible with each other? ☒ Yes ☐ No13. Will the value of production be decreased by commingling? ☐ Yes ☒ No (If Yes, attach explanation)14. If this well is on, or communitized with, state or federal lands, either the Commissioner of Public Lands or the United States Bureau of Land Management has been notified in writing of this application. ☒ Yes ☐ No

15. NMOCD Reference Cases for Rule 303(D) Exceptions: ORDER NO(S) \_\_\_\_\_

## 16. ATTACHMENTS:

- \* C-102 for each zone to be commingled showing its spacing unit and acreage dedication.
- \* Production curve for each zone for at least one year. (If not available, attach explanation.)
- \* For zones with no production history, estimated production rates and supporting data.
- \* Data to support allocation method or formula.
- \* Notification list of all offset operators.
- \* Notification list of working, overriding, and royalty interests for uncommon interest cases.
- \* Any additional statements, data, or documents required to support commingling.

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

SIGNATURE Timothy J. Friesenhahn TITLE Operations Engineer DATE 05-12-99TYPE OR PRINT NAME Timothy J. Friesenhahn TELEPHONE NO. (505) 326-9700

MEXICO OIL CONSERVATION COMMISSION  
WELL LOCATION AND ACREAGE DEDICATION PLAT

RECEIVED FT. WORTH

Form C-102  
Supersedes C-128  
Effective 1-1-65

JAN - 7 1982

All distances must be from the outer boundaries of the Section.

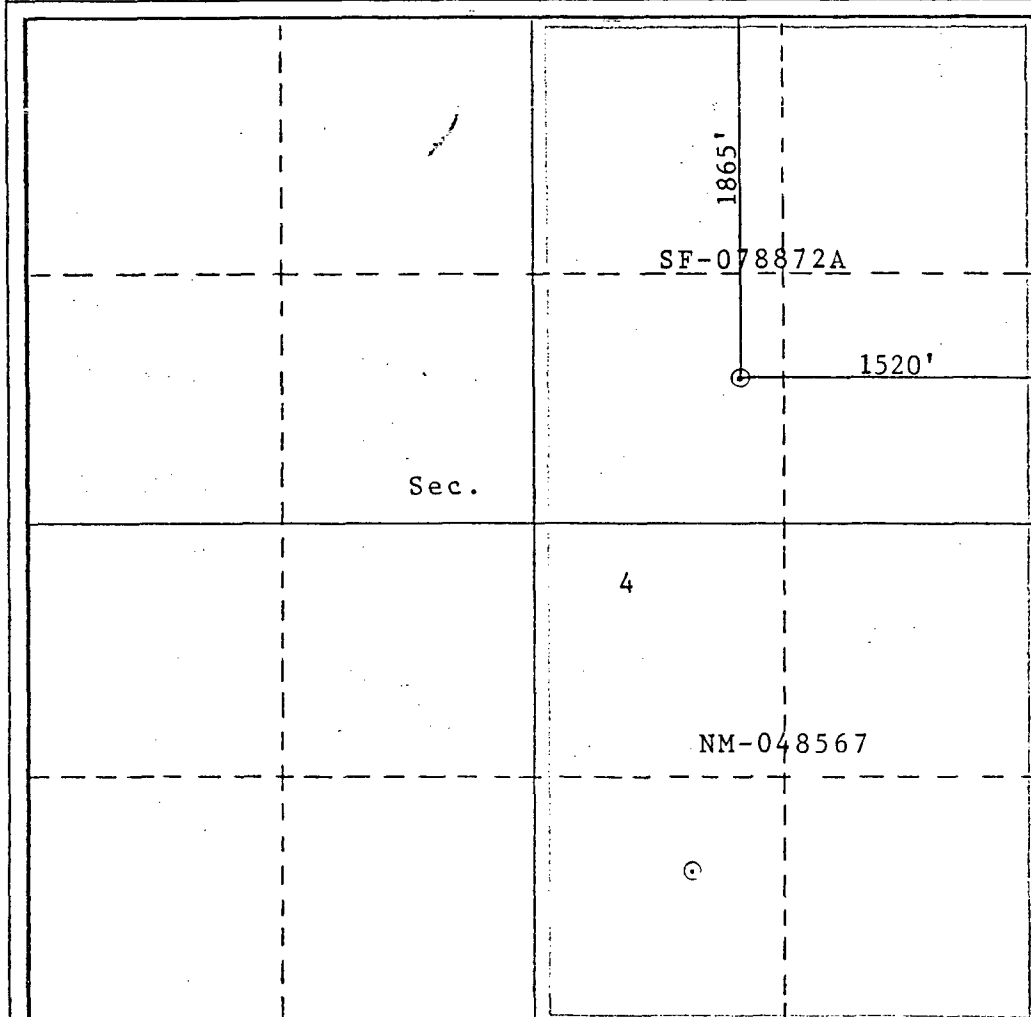
Operator <b>SOUTHLAND ROYALTY COMPANY</b>			Lease <b>FRONTIER "E"</b>		<b>PRODUCTION</b>		Well No. <b>1-E</b>
Unit Letter <b>G</b>	Section <b>4</b>	Township <b>27N</b>	Range <b>11W</b>	County <b>San Juan</b>			
Actual Footage Location of Well: <b>1865</b> feet from the <b>North</b> line and <b>1520</b> feet from the <b>East</b> line							
Ground Level Elev. <b>6155'</b>	Producing Formation <b>Dakota/Gallup</b>		Pool <b>Basin/Kutz</b>		Dedicated Acreage: <b>320</b> Acres		

1. Outline the acreage dedicated to the subject well by colored pencil or hachure 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 Communitized

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.

*R. E. Fielder*

Name  
**R. E. Fielder**  
Position  
**District Engineer**  
Company  
**Southland Royalty Company**  
Date  
**January 4, 1982**

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  
  
Registered Professional Engineer and/or Land Surveyor

Certificate No.

0 330 660 990 1320 1650 1980 2310 2640 2000 1500 1000 500 0

**NEW MEXICO OIL CONSERVATION COMMISSION  
WELL LOCATION AND ACREAGE DEDICATION PLAT**

Form C-102  
Supersedes C-128  
Effective 1-1-55

All distances must be from the outer boundaries of the Section.

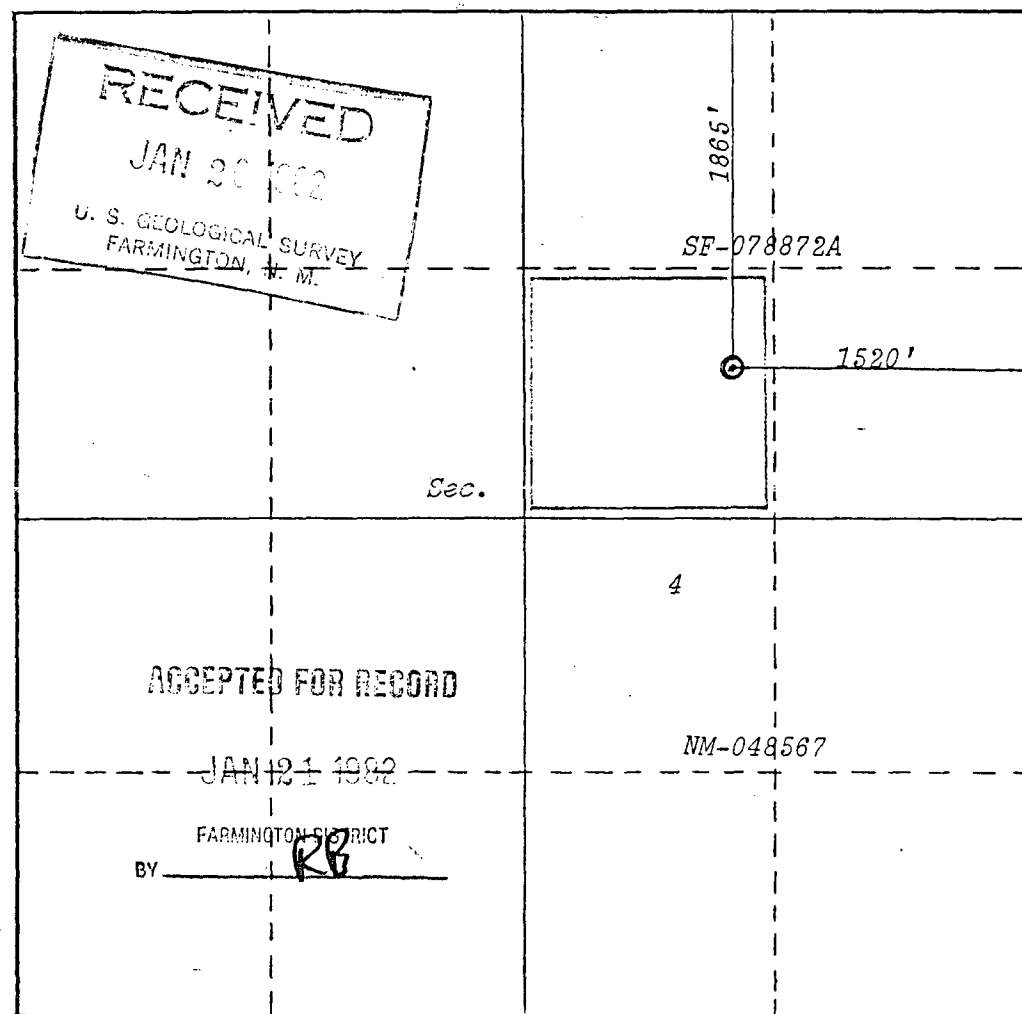
Operator <b>SOUTHLAND ROYALTY COMPANY</b>			Lease <b>Frontier "E"</b>		Well No. <b>1-E</b>
Unit Letter <b>G</b>	Section <b>4</b>	Township <b>27N</b>	Range <b>11W</b>	County <b>San Juan</b>	
Actual Footage Location of Well: <b>1865</b> feet from the <b>North</b> line and <b>1520</b> feet from the <b>East</b> line					
Ground Level Elev. <b>6155'</b>	Producing Formation <b>Gallup</b>		Pool <b>Kutz</b>		Dedicated Acreage: <b>40</b> Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure 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 Communitization

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.

*R. E. Fielder*

Name

**R. E. Fielder**

Position

**District Engineer**

Company

**Southland Royalty Company**

Date

**January 18, 1982**

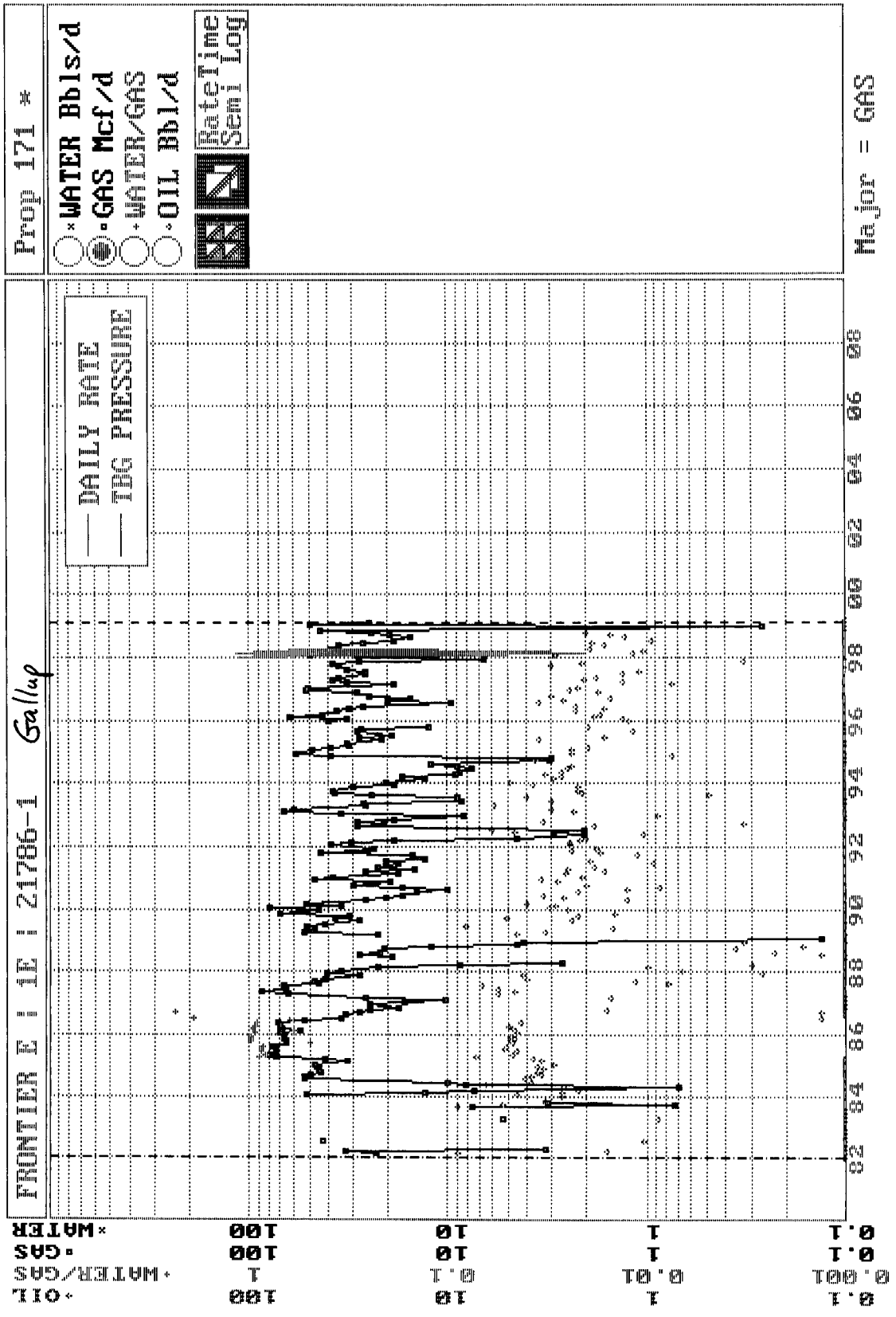
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

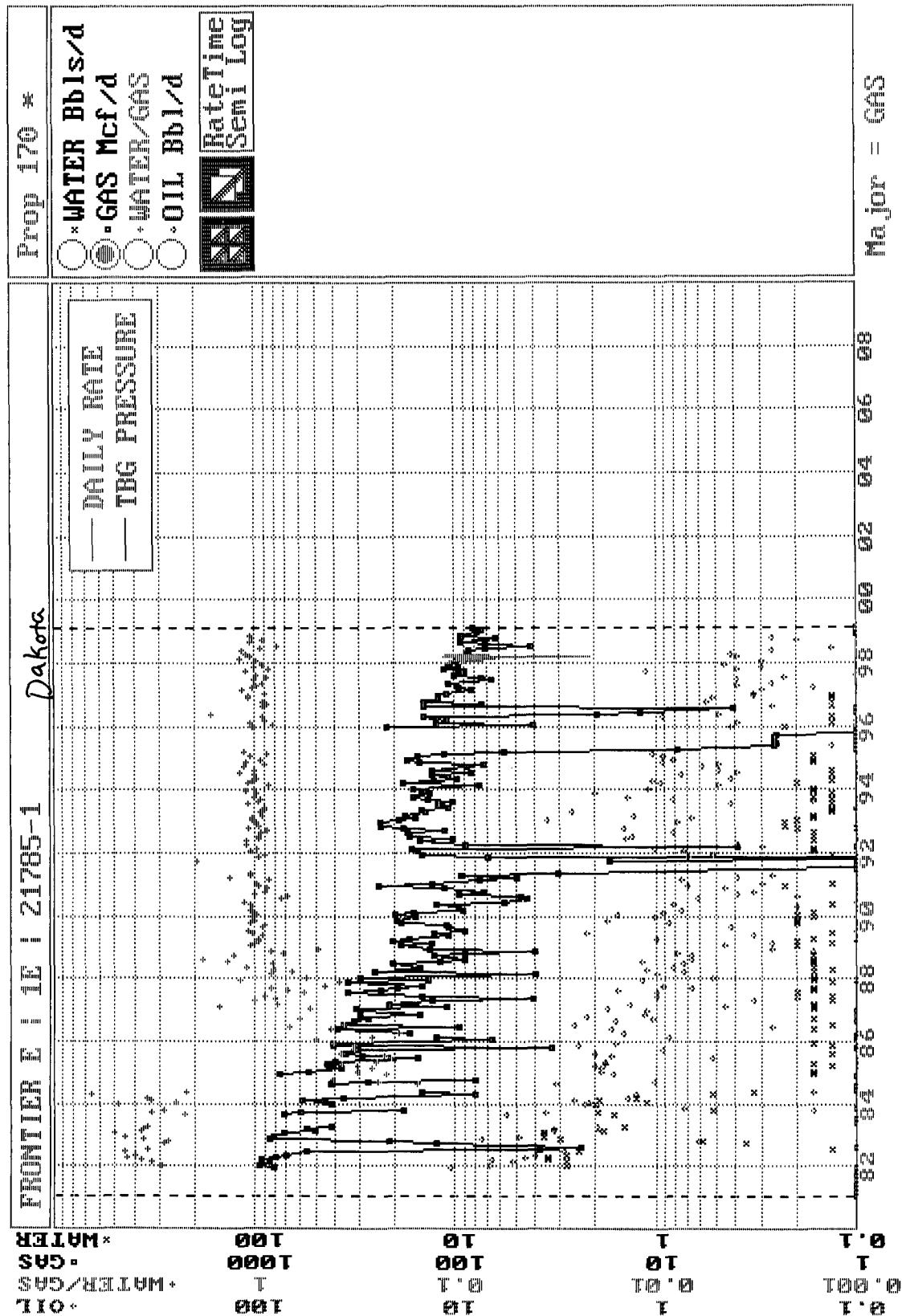
Date Surveyed

Registered Professional Engineer and/or Land Surveyor

Certificate No.

**OPERATOR**





Page No.: 3  
Print Time: Mon May 03 13:07:27 1999  
Property ID: 7802  
Property Name: NAGEEZI | 5 | 45685A-1  
Table Name: K:\ARIES\RR99PDP\TEST.DBF

GL-DK  
Offset well for  
Frontier E#1E-GL

<u>--DATE--</u>	<u>---CUM GAS--</u>	<u>M SIWHP</u>
	<u>Mcf</u>	<u>Psi</u>

02/12/80	0	1848.0
01/20/81	17127	1280.0
07/20/81	76575	1084.0
06/04/82	180024	1031.0
10/12/83	282328	1259.0
05/06/93	1588956	668.0
3/31/99	2130473	285.

Original

CURRENT BASED ON Cum GAS VS PRESSURE CURVE

Page No.: 1

Print Time: Thu Apr 29 10:43:16 1999

Property ID: 170

Property Name: FRONTIER E | 1E | 21785-1 *Dakota*

Table Name: S:\JSMITH\ARIES\99WORK\TEST.DBF

<u>--DATE--</u>	<u>---CUM GAS--</u>	<u>M SIWHP</u>
	<u>Mcf</u>	<u>Psi</u>

12/19/80	0	1211.0
05/04/82	153865	708.0
10/12/83	345551	573.0
06/12/85	525274	479.0
05/31/88	757461	686.0
05/08/90	856763	457.0
07/01/92	921690	468.0

3/31/99	1171227	270
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*Original*

*Current Based on CumGas vs Pressure Curve*



**Frontier E #1E**  
**Bottom Hole Pressures**  
**Flowing and Static BHP**  
**Cullender and Smith Method**

Version 1.0 3/13/94

<b>Gallup</b>		<b>Dakota</b>	
<u><b>GL-Current</b></u>		<u><b>DK-Current</b></u>	
GAS GRAVITY	0.76	GAS GRAVITY	0.686
COND. OR MISC. (C/M)	M	COND. OR MISC. (C/M)	M
%N2	1.12	%N2	0.48
%CO2	0.65	%CO2	1.11
%H2S	0	%H2S	0
DIAMETER (IN)	6.366	DIAMETER (IN)	6.366
DEPTH (FT)	5903	DEPTH (FT)	6600
SURFACE TEMPERATURE (DEG F)	60	SURFACE TEMPERATURE (DEG F)	60
BOTTOMHOLE TEMPERATURE (DEG F)	133	BOTTOMHOLE TEMPERATURE (DEG F)	142
FLOWRATE (MCFPD)	0	FLOWRATE (MCFPD)	0
SURFACE PRESSURE (PSIA)	285	SURFACE PRESSURE (PSIA)	270
BOTTOMHOLE PRESSURE (PSIA)	334.9	BOTTOMHOLE PRESSURE (PSIA)	316.5
<u><b>GL-Original</b></u>		<u><b>DK-Original</b></u>	
GAS GRAVITY	0.76	GAS GRAVITY	0.686
COND. OR MISC. (C/M)	M	COND. OR MISC. (C/M)	M
%N2	1.12	%N2	0.48
%CO2	0.65	%CO2	1.11
%H2S	0	%H2S	0
DIAMETER (IN)	6.366	DIAMETER (IN)	6.366
DEPTH (FT)	5903	DEPTH (FT)	6600
SURFACE TEMPERATURE (DEG F)	60	SURFACE TEMPERATURE (DEG F)	60
BOTTOMHOLE TEMPERATURE (DEG F)	133	BOTTOMHOLE TEMPERATURE (DEG F)	142
FLOWRATE (MCFPD)	0	FLOWRATE (MCFPD)	0
SURFACE PRESSURE (PSIA)	1848	SURFACE PRESSURE (PSIA)	1211
BOTTOMHOLE PRESSURE (PSIA)	2300.8	BOTTOMHOLE PRESSURE (PSIA)	1460.9

# Cumulative Monthly Well Report

November 1998 -- April 1999

Select By : Completions  
Sort By :

Page No : 1  
Report Number : R\_290  
Last Update :  
Print Date : 04/29/1999, 10:04:06

Completion		Date	Cur Oil	Cum Oil	Cur Gas	Cum Gas	Cur Wat	Cum Wat
FRONTIER E 1E	DK	11/30/1998	11.87	27.28	2,848.13	2,848.13	2.79	2.79
		12/31/1998	4.05	31.33	2,412.52	5,260.65	2.36	5.15
		01/31/1999	19.11	50.44	2,344.87	7,605.52	2.30	7.45
		02/28/1999	18.98	69.42	2,537.01	10,142.53	2.49	9.94
		03/31/1999	14.74	84.16	4,002.67	14,145.20	8.58	18.52
	GL	04/30/1999	0.00	84.16	0.00	14,145.20	0.00	18.52
		11/30/1998	16.58	71.49	1,350.63	1,350.63	0.00	0.00
		12/31/1998	0.00	71.49	166.56	1,517.19	0.00	0.00
		01/31/1999	81.09	152.58	1,618.49	3,135.68	0.00	0.00
		02/28/1999	64.28	216.86	881.58	4,017.26	0.00	0.00
		03/31/1999	91.24	308.10	1,293.98	5,311.24	3.49	3.49
		04/30/1999	0.00	308.10	0.00	5,311.24	0.00	3.49

FARMINGTON  
FRONTIER E 1E  
KUTZ (GALLUP) FIELD

1998 MONTHLY PRODUCTION FOR 21786

PHS030M1

GALLUP ZONE

DAYS =====				OIL =====			===== GAS =====							
MO	T	S	ON	PC	PROD	GRV	PC	PROD	ON	BTU	PRESS	WATER	PROD	C
1	1	F	31	00	88	53.0	03	1516	31	1188	15.025			
2	1	F	28	00	36		03	1360	28	1188	15.025			
3	1	F	31	00	32	47.6	03	1192	31	1188	15.025			
4	1	F	30	00	59		03	1186	30	1188	15.025			
5	1	F	31	00	50		03	1087	31	1188	15.025			
6	1	F	30	00	57	40.7	03	805	30	1188	15.025			
7	1	F	17	00	29		03	574	17	1188	15.025			
8	1	F	21	00	39		03	474	21	1188	15.025			
9	1	F	30	00	46		03	596	30	1188	15.025			
10	1	F	31	00	62	42.0	03	734	31	1188	15.025			
11	1	F					03	1327		1188	15.025			
12														

PF6 - RETURNS TO ANNUAL DISPLAY

PF10 - HELP INFORMATION

PF3 - TRANSFER TO UPDATE

PF9 - DISPLAY MONTHLY INJECTION

00/00/00 00:00:00:0

PRS 01/06/99

FARMINGTON

ANNUAL PRODUCTION FOR 21786

PHS020M1

FRONTIER E 1E

KUTZ (GALLUP) FIELD

GALLUP ZONE

===== OIL CUM =====

===== GAS CUM =====

===== WATER CUM =====

PC DATE BBLs

PC DATE MCF

DATE BBLs

```

=====
YEAR      OIL      OIL CUM      GAS      GAS CUM      WATER      WATER CUM
1991      628      8536      8456      110162      31
1992      825      9361      6253      116415      31
1993      884      10245     11582     127997      31
1994      856      11101     6108      134105      31
1995      420      11521     9959      144064      31
1996      787      12308     11631     155695      31
1997      489      12797     11234     166929      31
1998      498      13295     10851     177780      31
=====

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*3/31/99**190,598 190*

POSITION CURSOR BY YEAR AND PRESS ENTER TO DISPLAY MONTHLY PRODUCTION

ENTER - CONTINUES ANNUAL DISPLAY

PF3 - TRANSFER TO UPDATE

PF6 - RETURN TO WELL-INFO DISPLAY

PF9 - ANNUAL INJECTION DISPLAY

PF10 - HELP INFORMATION

FARMINGTON

ANNUAL PRODUCTION FOR 21785

PHS020M1

FRONTIER E 1E

BASIN DAKOTA (PRORATED GAS) FIELD

DAKOTA ZONE

===== OIL CUM =====

===== GAS CUM =====

===== WATER CUM =====

PC DATE

BBLs

PC DATE

MCF

DATE

BBLs

YEAR	OIL	OIL CUM	GAS	GAS CUM	WATER	WATER CUM
1991	97	4908	18805	896084	19	1667
1992	253	5161	54352	950436	54	1721
1993	392	5553	52875	1003311	52	1773
1994	258	5811	45008	1048319	46	1819
1995	77	5888	17414	1065733	17	1836
1996	111	5999	32363	1098096	31	1867
1997	132	6131	34946	1133042	34	1901
1998	68	6199	26888	1159930	28	1929

3/31/99

1171227 46%

POSITION CURSOR BY YEAR AND PRESS ENTER TO DISPLAY MONTHLY PRODUCTION

ENTER - CONTINUES ANNUAL DISPLAY

PF3 - TRANSFER TO UPDATE

PF6 - RETURN TO WELL-INFO DISPLAY

PF9 - ANNUAL INJECTION DISPLAY

PF10 - HELP INFORMATION

Allocation

DK 1,167,040

87%

CL 180,030

13%

1,347,070

FARMINGTON

1998 MONTHLY PRODUCTION FOR 21785

PHS030M1

FRONTIER E 1E

BASIN DAKOTA (PRORATED GAS) FIELD

DAKOTA ZONE

DAYS =====					OIL =====			===== GAS =====						
MO	T	S	ON	PC	PROD	GRV	PC	PROD	ON	BTU	PRESS	WATER	PROD	C
1	2	F	31	02	9		01	3030	31	1146	15.025		3	
2	2	F	28	02	3		01	2535	28	1146	15.025		3	
3	2	F	31	02	12	54.3	01	2840	31	1146	15.025		3	
4	2	F	30	02	13		01	2682	30	1146	15.025		3	
5	2	F	31	02	8		01	2593	31	1146	15.025		3	
6	2	F	30	02	4	53.5	01	2151	30	1146	15.025		2	
7	2	F	15	02	3		01	1276	15	1146	15.025		1	
8	2	F	21	02	2		01	2838	21	1146	15.025		3	
9	2	F	30	02	6		01	2174	30	1146	15.025		2	
10	2	F	31	02	8		01	1923	31	1146	15.025		2	
11	2	F					01	2846		1146	15.025		3	
12														

PF6 - RETURNS TO ANNUAL DISPLAY

PF3 - TRANSFER TO UPDATE

PF10 - HELP INFORMATION

PF9 - DISPLAY MONTHLY INJECTION

00/00/00 00:00:00:0

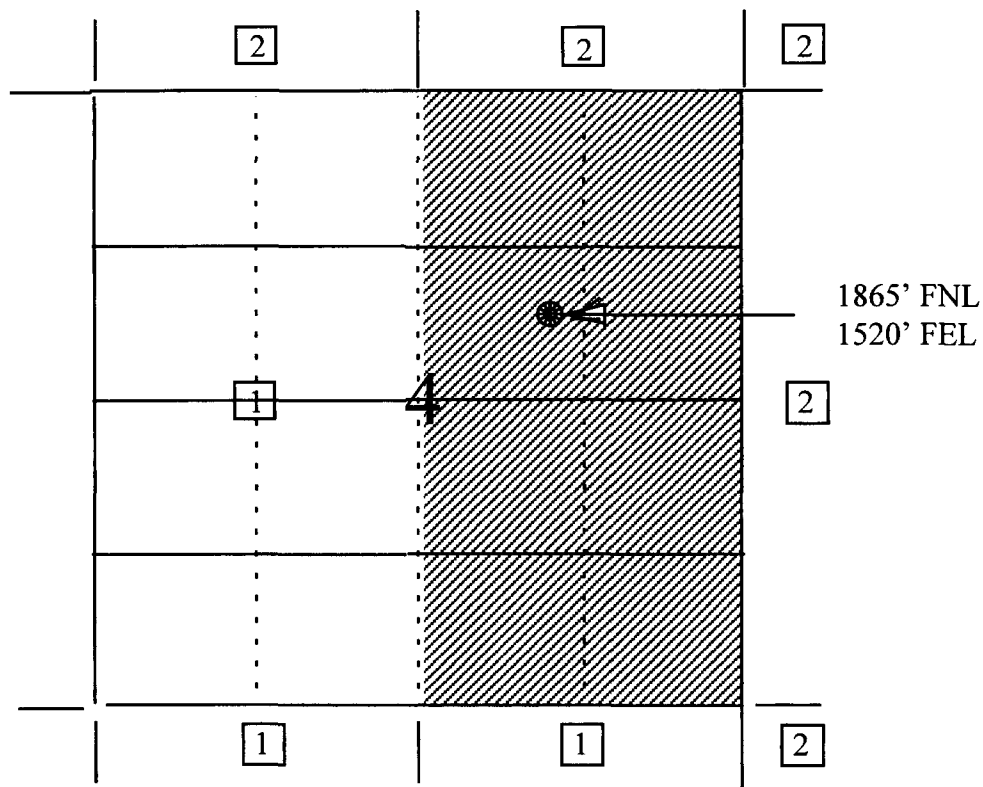
PRS 01/06/99

# ***BURLINGTON RESOURCES OIL AND GAS COMPANY***

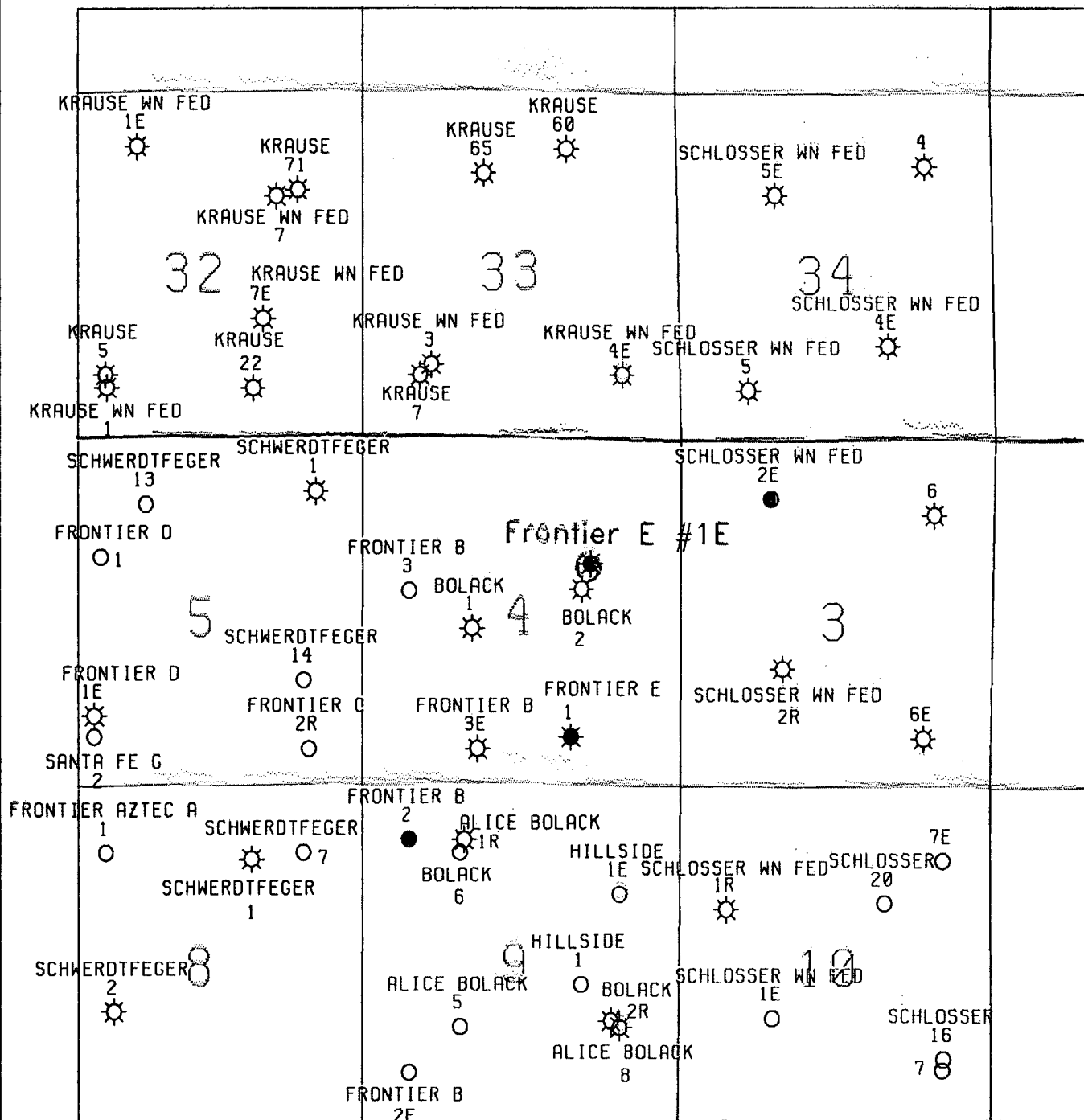
## **Frontier E #1E OFFSET OPERATOR \ OWNER PLAT Downhole Commingle**

### **Gallup / Dakota Formations Well**

**Township 27 North, Range 11 West**



- 1) Burlington Resources
- 2) ARCO Oil & Gas Company  
P.O. Box 1610  
Midland, TX 79702



*Frontier E #1E*  
*Sec 4 T27N R11W*  
*Gallup/Dakota*