

ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION  
- Engineering Bureau -

ADMINISTRATIVE APPLICATION COVERSHEET

THIS COVERSHEET IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS

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

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

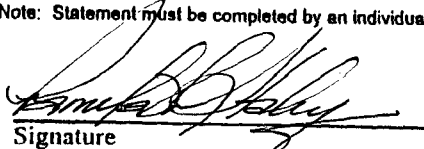
- [A] ☐ Working, Royalty or Overriding Royalty Interest Owners  
[B] ☒ Offset Operators, Leaseholders or Surface Owner  
[C] ☐ Application is One Which Requires Published Legal Notice  
[D] ☒ Notification and/or Concurrent Approval by BLM or SLO  
U.S. Bureau of Land Management - Commissioner of Public 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 - Statement of Understanding

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, RI, ORRI) is common. I further verify that all applicable API Numbers are included. I understand that any omission of data, information or notification is cause to have the application package returned with no action taken.

Note: Statement must be completed by an individual with supervisory capacity.

PAMELA W. STALEY  
Print or Type Name

  
Signature

REGULATORY AFFAIRS ENGR.  
Title

1/2/97  
Date



**Amoco Production Company**

Denver Region  
1670 Broadway  
P.O. Box 800  
Denver, Colorado 80201  
303-830-4040

January 2, 1997

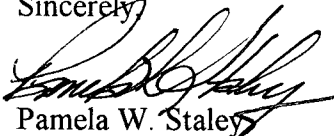
Mr. William J. LeMay, Director  
New Mexico Oil Conservation Division  
2040 S. Pacheco Street  
P. O. Box 6429  
Santa Fe, NM 87505

**Application for Exception to Rule 303-C - Downhole Commingling  
Berger #4 Well  
Unit C Section 22-T26N-R11W  
Gallegos Gallup and Basin Dakota Pools  
San Juan County, New Mexico**

Enclosed please find an administrative application form (C-107-A) and attachments for downhole commingling for the captioned well. By copy of this application by certified mail, return receipt requested, Amoco is notifying all offset operators in the formations captioned above as well as all affected interest owners if the ownership of those formations is not common. The Division Director may approve the proposed downhole commingling in the absence of a valid objection from any offset operator or any interest owner in those instances where ownership is not common in the zones to be commingled within 20 days after the receipt of the application if, in his opinion, waste will not result thereby, and correlative rights will not be violated.

Should there be questions concerning this matter, please contact me at (303) 830-5344.

Sincerely,



Pamela W. Staley

**Enclosures**

cc: Steve Webb  
Pat Archuleta  
Wellfile  
Proration File  
Frank Chavez, Supervisor  
NMOCD District III  
1000 Rio Brazos Road  
Aztec, NM 87410

Duane Spencer  
Bureau of Land Management  
1235 La Plata Hwy.  
Farmington, NM 87401

DISTRICT I  
P.O. Box 1980, Hobbs NM 88241-1980

State of New Mexico  
Energy, Minerals and Natural Resources Department

Form C-107-A  
New 3-12-96

OIL CONSERVATION DIVISION

APPROVAL PROCESS:

DISTRICT II  
811 South First St., Artesia, NM 88210-2835

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

x Administrative \_\_\_ Hearing

DISTRICT III  
1000 Rio Brazos Rd. Aztec, NM 87410-1693

EXISTING WELLBORE  
\_x\_ YES \_\_\_ NO

APPLICATION FOR DOWNHOLE COMMINGLING

Amoco Production Company

PO Box 800 Denver, CO 80201

Operator	4	Address	C22, T26N-R11W	San Juan
Lease	Well No.	Unit Ltr. - Sec Twp - Rge	County	

OGRID NO. 000778 Property Code 000315 API NO. 3004505792 Spacing Unit Lease Types: (check 1 or more)  
Federal x , 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	Gallegos Gallup 26980		Basin Dakota 71599
2. Top and Bottom of Pay Section (Perforations)	5325'-5430'		6143'-6215'
3. Type of production (Oil or Gas)	Oil		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) 740 psi a. (Original) 1513 psi b.	a. b.	939 psi 2361 psi
6. Oil Gravity (° API) or Gas BTU Content	1237 btu		1000 btu
7. Producing or Shut-In?	Shut-in		Producing
Production Marginal? (yes or no)	Yes		Yes
• If Shut-In, give data 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: 1/90 Rates: 6 MCFD 0 BOPD 0 BWPD	Date: Rates:	Date: Rates:
• If Producing, give date and oil/gas/water rates of recent test (within 60 days)	Date: Rates:	Date: Rates:	11/96 60 MCFD 0.5 BOPD
8. Fixed Percentage Allocation Formula -% for each zone	Oil: 22 % Gas 22 %	Oil: % Gas %	Oil: 78 % Gas 78 %

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? \_\_\_x\_\_\_ 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? \_\_\_x\_\_\_ Yes \_\_\_ No

11. Will cross-flow occur? \_\_\_ Yes \_\_\_x\_\_\_ 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. \_\_\_x\_\_\_ Yes \_\_\_ No (If No, attach explanation)

12. Are all produced fluids from all commingled zones compatible with each other? \_\_\_x\_\_\_ Yes \_\_\_ No

13. Will the value of production be decreased by commingling? \_\_\_ Yes \_\_\_x\_\_\_ 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. \_\_\_x\_\_\_ Yes \_\_\_ No SF-078641

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 Pamela W. Staley TITLE Regulatory Affairs Engineer DATE 1/2/97  
TYPE OR PRINT NAME Pamela W. Staley TELEPHONE NO. ( 303 ) 830-5344

Form C-28  
Revised 5/1/57NEW MEXICO OIL CONSERVATION COMMISSION  
Well Location and Acreage Dedication Plat

Section A.

Date July 17, 1959

Operator TENNESSEE GAS TRANSMISSION CO. Lease USA W.O. BERGER  
 Well No. 4 Unit Letter C Section 22 Township 26 N Range 11 W N.M.P.M.  
 Located 790 Feet From north Line, 1800 Feet From west Line  
 County San Juan G. L. Elevation 6319 Dedicated Acreage \_\_\_\_\_ Acres  
 Name of Producing Formation Dakota Pool Undesignated

1. Is the Operator the only owner\* in the dedicated acreage outlined on the plat below?  
Yes ☒ No ☐
2. If the answer to question one is "no," have the interests of all the owners been consolidated by communitization agreement or otherwise? Yes ☐ No ☐. If answer is "yes," Type of Consolidation \_\_\_\_\_
3. If the answer to question two is "no," list all the owners and their respective interests below:

OwnerLand Description

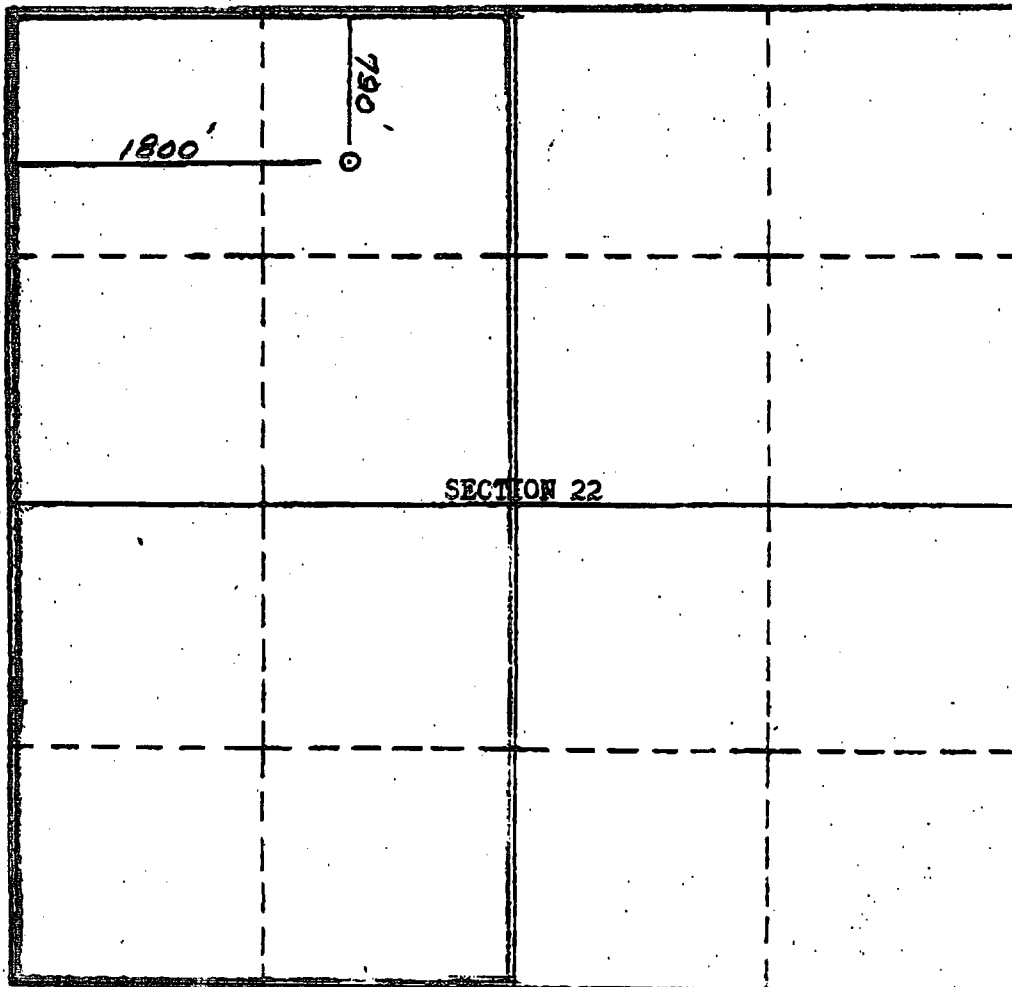
RECEIVED

JUL 21 1959

OIL CON. COM.

DIST. 3

Section B



This is to certify that the information in Section A above is true and complete to the best of my knowledge and belief.

Tennessee Gas Transmission Co.  
(Operator)

Russell R. H. Walther  
(Representative)

P. O. Box 1714  
Durango, Colorado

Address

This is to certify that the well location shown on the plat in Section B 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 July 16, 1959

STEPHEN J. FINE  
Registered Professional Engineer and Land Surveyor.

Certificate No. 803  
(See instructions for completing this form on the reverse side)

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

NEW MEXICO OIL CONSERVATION COMMISSION  
WELL LOCATION AND ACREAGE DEDICATION PLAT

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

Operator Tenneco Oil Company		Lessee <del>W. H. Berger</del> W. H. Berger		Well No. #44
Unit Lessor C	Section 22	Township 26N	Range 11W	County San Juan
Actual Footage Location of Well: 790 feet from the North line and 1800 feet from the West line				
Ground Level Elev:	Producing Formation Gallup	Pool Gallegos Gallup Extension	Dedicated Acreage: 320 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 \_\_\_\_\_

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.

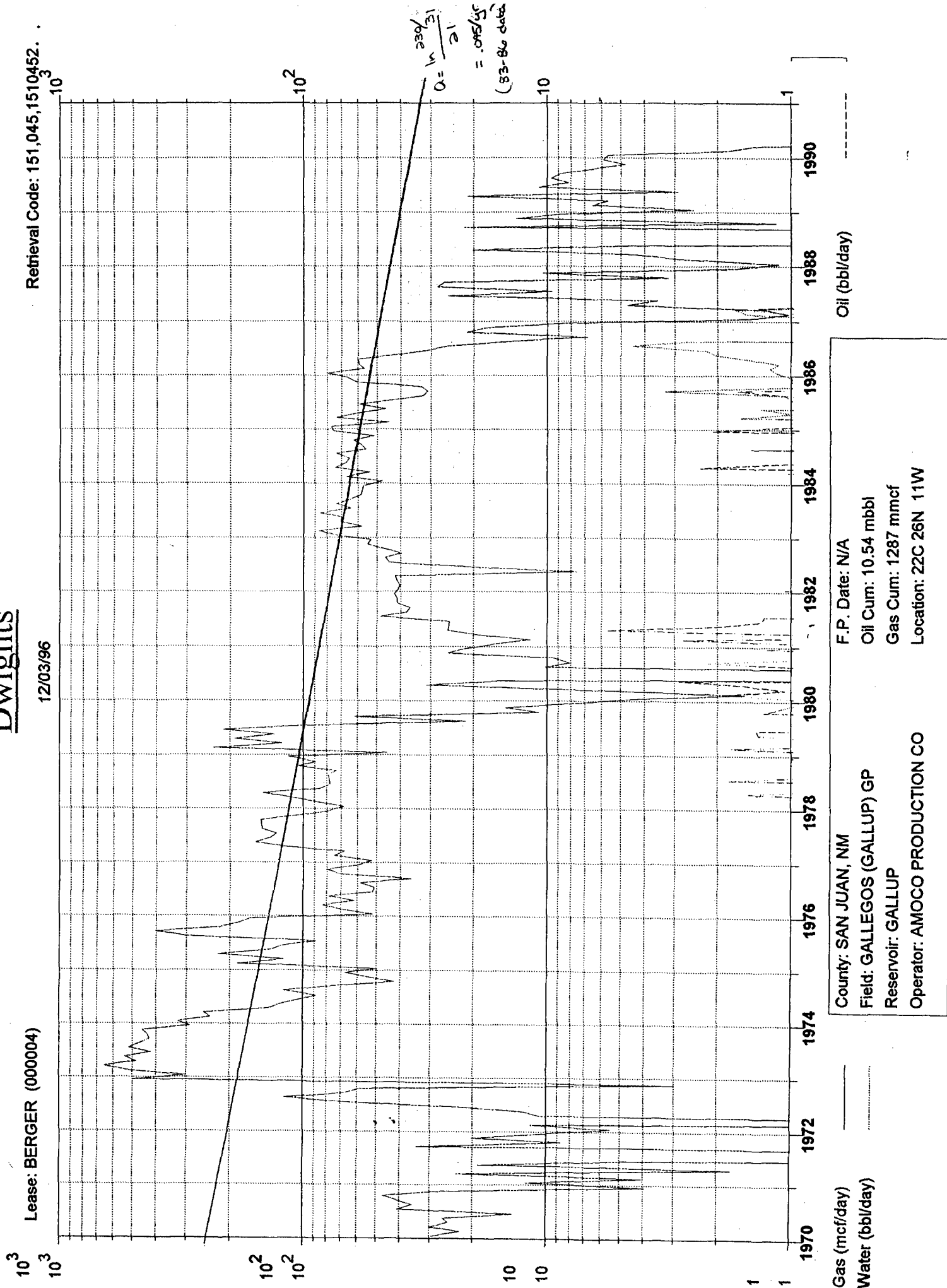
<div><div>1800'</div><div>790'</div><div>0'</div><div>Section 22</div><div><div>RECEIVED</div><div>MAY 1 1969</div><div>OIL CON. COM.</div><div>DIST. 3</div></div><div><div>0</div><div>830</div><div>660</div><div>490</div><div>320</div><div>150</div><div>0</div><div>1650</div><div>1820</div><div>1990</div><div>2160</div><div>2330</div><div>2500</div><div>2670</div><div>2840</div><div>3010</div><div>3180</div><div>3350</div><div>3520</div><div>3690</div><div>3860</div><div>4030</div><div>4200</div><div>4370</div><div>4540</div><div>4710</div><div>4880</div><div>5050</div><div>5220</div><div>5390</div><div>5560</div><div>5730</div><div>5900</div><div>6070</div><div>6240</div><div>6410</div><div>6580</div><div>6750</div><div>6920</div><div>7090</div><div>7260</div><div>7430</div><div>7600</div><div>7770</div><div>7940</div><div>8110</div><div>8280</div><div>8450</div><div>8620</div><div>8790</div><div>8960</div><div>9130</div><div>9300</div><div>9470</div><div>9640</div><div>9810</div><div>9980</div><div>10150</div><div>10320</div><div>10490</div><div>10660</div><div>10830</div><div>11000</div><div>11170</div><div>11340</div><div>11510</div><div>11680</div><div>11850</div><div>12020</div><div>12190</div><div>12360</div><div>12530</div><div>12700</div><div>12870</div><div>13040</div><div>13210</div><div>13380</div><div>13550</div><div>13720</div><div>13890</div><div>14060</div><div>14230</div><div>14400</div><div>14570</div><div>14740</div><div>14910</div><div>15080</div><div>15250</div><div>15420</div><div>15590</div><div>15760</div><div>15930</div><div>16100</div><div>16270</div><div>16440</div><div>16610</div><div>16780</div><div>16950</div><div>17120</div><div>17290</div><div>17460</div><div>17630</div><div>17800</div><div>17970</div><div>18140</div><div>18310</div><div>18480</div><div>18650</div><div>18820</div><div>18990</div><div>19160</div><div>19330</div><div>19500</div><div>19670</div><div>19840</div><div>20010</div><div>20180</div><div>20350</div><div>20520</div><div>20690</div><div>20860</div><div>21030</div><div>21200</div><div>21370</div><div>21540</div><div>21710</div><div>21880</div><div>22050</div><div>22220</div><div>22390</div><div>22560</div><div>22730</div><div>22900</div><div>23070</div><div>23240</div><div>23410</div><div>23580</div><div>23750</div><div>23920</div><div>24090</div><div>24260</div><div>24430</div><div>24600</div><div>24770</div><div>24940</div><div>25110</div><div>25280</div><div>25450</div><div>25620</div><div>25790</div><div>25960</div><div>26130</div><div>26300</div><div>26470</div><div>26640</div><div>26810</div><div>26980</div><div>27150</div><div>27320</div><div>27490</div><div>27660</div><div>27830</div><div>28000</div><div>28170</div><div>28340</div><div>28510</div><div>28680</div><div>28850</div><div>29020</div><div>29190</div><div>29360</div><div>29530</div><div>29700</div><div>29870</div><div>30040</div><div>30210</div><div>30380</div><div>30550</div><div>30720</div><div>30890</div><div>31060</div><div>31230</div><div>31400</div><div>31570</div><div>31740</div><div>31910</div><div>32080</div><div>32250</div><div>32420</div><div>32590</div><div>32760</div><div>32930</div><div>33100</div><div>33270</div><div>33440</div><div>33610</div><div>33780</div><div>33950</div><div>34120</div><div>34290</div><div>34460</div><div>34630</div><div>34800</div><div>34970</div><div>35140</div><div>35310</div><div>35480</div><div>35650</div><div>35820</div><div>35990</div><div>36160</div><div>36330</div><div>36500</div><div>36670</div><div>36840</div><div>37010</div><div>37180</div><div>37350</div><div>37520</div><div>37690</div><div>37860</div><div>38030</div><div>38200</div><div>38370</div><div>38540</div><div>38710</div><div>38880</div><div>39050</div><div>39220</div><div>39390</div><div>39560</div><div>39730</div><div>39900</div><div>40070</div><div>40240</div><div>40410</div><div>40580</div><div>40750</div><div>40920</div><div>41090</div><div>41260</div><div>41430</div><div>41600</div><div>41770</div><div>41940</div><div>42110</div><div>42280</div><div>42450</div><div>42620</div><div>42790</div><div>42960</div><div>43130</div><div>43300</div><div>43470</div><div>43640</div><div>43810</div><div>43980</div><div>44150</div><div>44320</div><div>44490</div><div>44660</div><div>44830</div><div>45000</div><div>45170</div><div>45340</div><div>45510</div><div>45680</div><div>45850</div><div>46020</div><div>46190</div><div>46360</div><div>46530</div><div>46700</div><div>46870</div><div>47040</div><div>47210</div><div>47380</div><div>47550</div><div>47720</div><div>47890</div><div>48060</div><div>48230</div><div>48400</div><div>48570</div><div>48740</div><div>48910</div><div>49080</div><div>49250</div><div>49420</div><div>49590</div><div>49760</div><div>49930</div><div>50100</div><div>50270</div><div>50440</div><div>50610</div><div>50780</div><div>50950</div><div>51120</div><div>51290</div><div>51460</div><div>51630</div><div>51800</div><div>51970</div><div>52140</div><div>52310</div><div>52480</div><div>52650</div><div>52820</div><div>52990</div><div>53160</div><div>53330</div><div>53500</div><div>53670</div><div>53840</div><div>54010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# Dwights

Lease: BERGER (0000004)

12/03/96

Retrieval Code: 151,045,1510452.

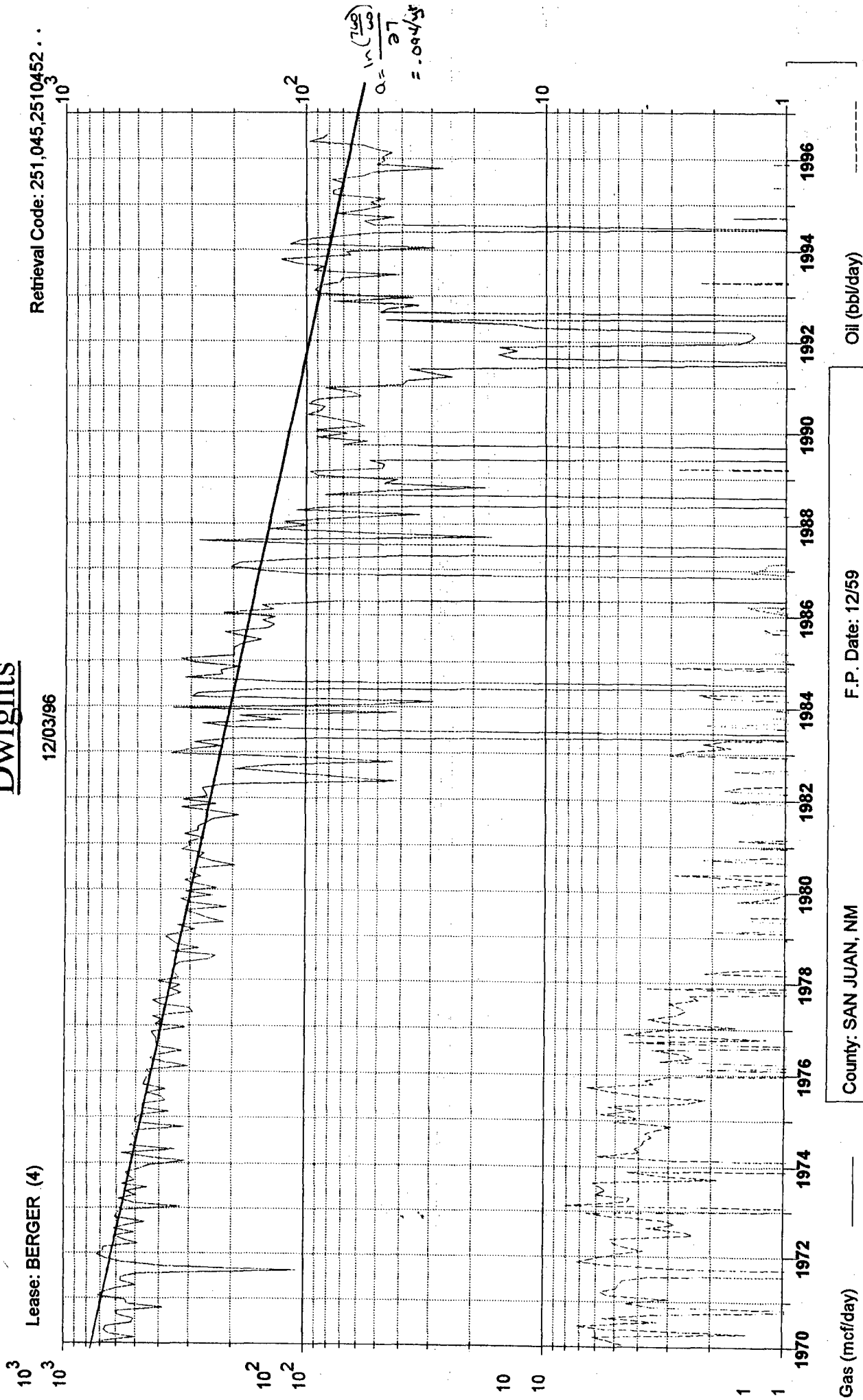


# Dwights

Lease: BERGER (4)

12/03/96

Retrieval Code: 251,045,2510452...



Gas (mcf/day)

Water (bbl/day)

Oil (bbl/day)

F.P. Date: 12/59

County: SAN JUAN, NM

Field: BASIN (DAKOTA) DK

Oil Cum: 34.82 mbbl

Reservoir: DAKOTA

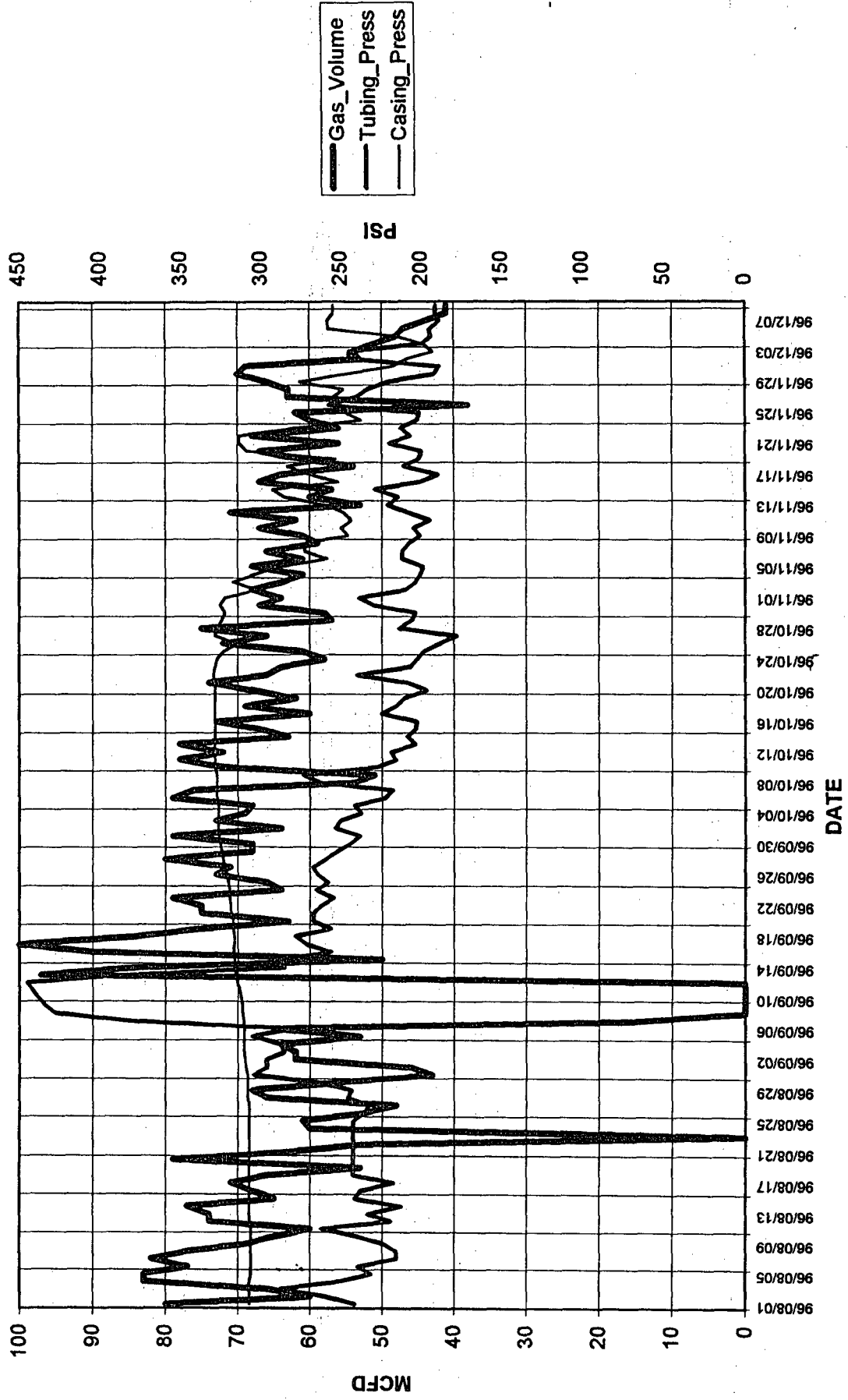
Gas Cum: 4220 mmcf

Operator: AMOCO PRODUCTION CO

Location: 22C 26N 11W

Chart1

Well: BERGER 004-DK (97840701)





## **BOTTOMHOLE PRESSURE CALCULATIONS**

### **Gallup**

$$\text{SICP} = 310 \text{ PSIG } 9/96$$

$$\text{Mid-Perforation depth} = 5378'$$

$$\text{Fluid Gradient} = 0.08 \text{ PSI/FT}$$

$$\text{BHP} = 310 + (0.08) (5378)$$

$$\text{BHP} = 740 \text{ PSI}$$

### **Dakota**

$$\text{SICP} = 445 \text{ PSIG } 9/96$$

$$\text{Mid-Perforation depth} = 6179'$$

$$\text{Fluid Gradient} = 0.08 \text{ PSI/FT}$$

$$\text{BHP} = 445 + (0.08) (6179)$$

$$\text{BHP} = 939 \text{ PSI}$$

**PROPOSED PRODUCTION ALLOCATION METHOD**  
**BERGER #4**

The subject well has been producing from the Gallup formation since 1969 and the Dakota formation since 1959. This well has been configured as a dual completion for some time. The Gallup formation was temporarily abandoned in 1990 due to liquid loading and the resulting poor performance. Downhole commingling will assist in stabilizing the lift of these fluids and hopefully return the Gallup to it's former production rates. Current production rates for each formation is as follows:

	MCFD	BOPD
Gallup	0	0
Dakota	60	0.5

The recommended allocation method for gas production is by percentage allocation for these two formations as their gas decline rates are virtually identical. (Gallup = 0.095/yr and Dakota = 0.094/yr) This percentage allocation would be based on anticipated production rates from each formation which are shown below and incorporate the capacity of the Gallup to produce before the formation was shut-in in 1990 as well as the former producing capacity of the Dakota.

	MCFD	% GAS	BOPD	%OIL
Gallup	60	22	0.5	22%
Dakota	<u>210</u>	<u>78</u>	<u>1.7</u>	<u>78%</u>
	270	100	2.2	100

**OFFSET OPERATORS**

**Berger #4**

Burlington Resources Oil and Gas Co.  
P.O. Box 4289  
Farmington, NM 87499