DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use Form 9-331-C for such proposals.)

1. oil well ☐ gas well ☒ other

2. NAME OF OPERATOR
Amoco Production Company

3. ADDRESS OF OPERATOR
501 Airport Drive, Farmington, NM 87401

4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)
AT SURFACE: 1100' FNL x 790' FWL
AT TOP PROD. INTERVAL: Same
AT TOTAL DEPTH: Same

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME
Rosa Unit

8. FARM OR LEASE NAME

9. WELL NO.
27

10. FIELD OR WILDCAT NAME
Basin Dakota/Unces. Gallup

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
NW/4, NW/4, Section 12, T31N, R4W

12. COUNTY OR PARISH
Rio Arriba

13. STATE
NM

14. API NO.
30-039-22766

15. ELEVATIONS (SHOW DF, KDB, AND WD)
7004' GL

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

REQUEST FOR APPROVAL TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF	☐		☐
FRACTURE TREAT	☐		☐
SHOOT OR ACIDIZE	☐		☐
REPAIR WELL	☐		☐
PULL OR ALTER CASING	☐		☐
MULTIPLE COMPLETE	☒		☐
CHANGE ZONES	☐		☐
ABANDON*	☐		☐
(other)			

RECEIVED
AUG 31 1982
BUREAU OF LAND MANAGEMENT

(NOTE: Report results of multiple completion or zone change on Form 9-330.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Amoco Production Company requests approval to recomplete this well in the Undesignated Gallup formation per the attached procedure. A revised C-102 survey plat showing the Gallup dedication is also attached.

During steps 1, 13 & 24 dump 2 sacks sand or 2 sacks cement on top of BP before continuing with the program. Test periods in steps 8, 12, 19, 23, 30 and 34 not to exceed one week each if gas is vented. Total vented gas for all tests not to exceed 50 MMCD total for all tests.

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

18. I hereby certify that the foregoing is true and correct

SIGNED _____ TITLE Dist. Engineer DATE 8-31-82

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

RECEIVED
SEP 2 1982
OIL CON. COM.
DIST. 3

*See Instructions on Reverse Side

NMOCC

APPROVED AS AMENDED
SEP 01 1982
For JAMES F. SIMS
DISTRICT ENGINEER

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

CONSERVATION DIVISION

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

Form C-107
Revised 10-1-78

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

Operator	Lease	Well No.
AMOCO PRODUCTION COMPANY	ROSA UNIT	87

Unit Letter	Section	Township	Range	County
D	12	31N	4W	Rio Arriba

Actual Footage Location of Well:
1100 feet from the North line and 790 feet from the West line

Ground Level Elev:	Producing Formation	Pool	Dedicated Acreage:
7004	Dakota/Gallup	Basin Dakota/Undes Gallup	320/160 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

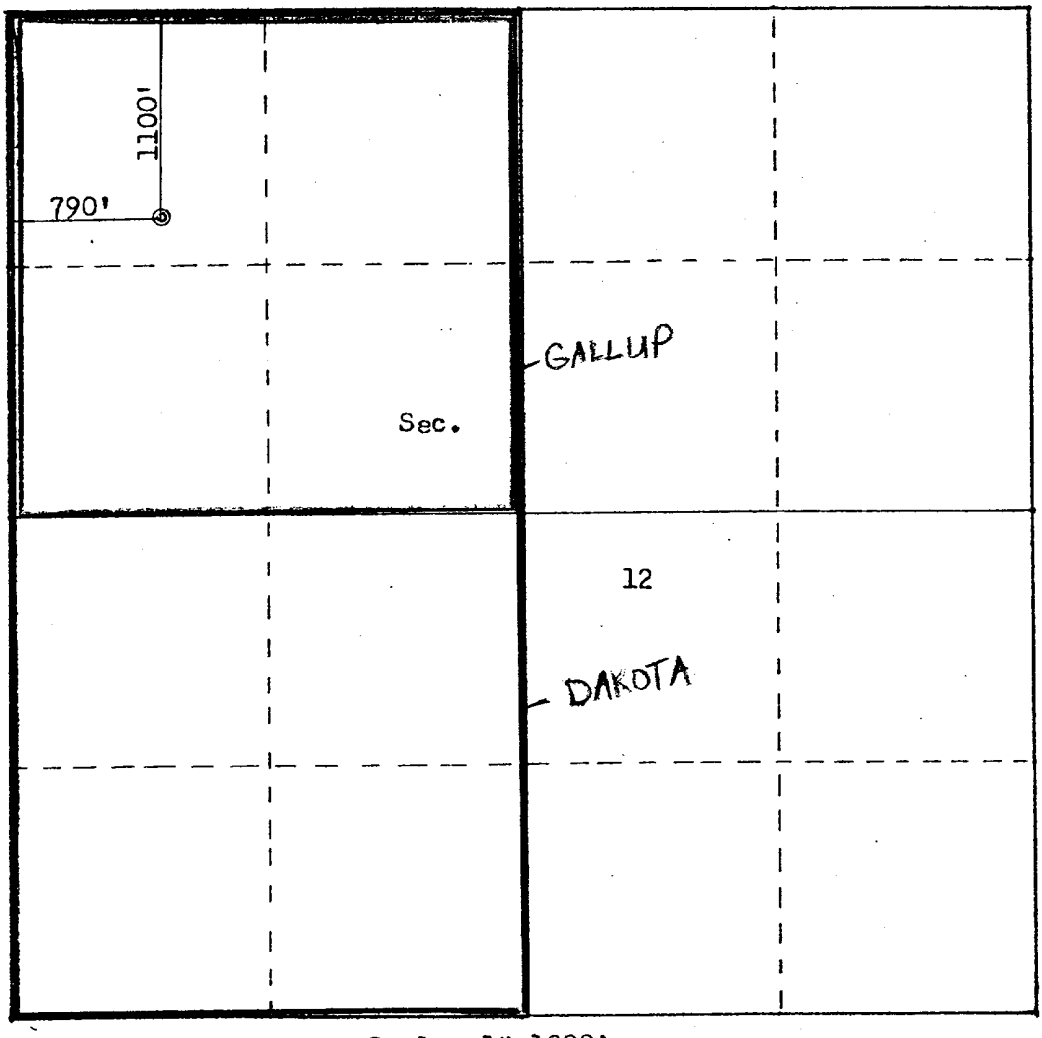
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

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?

[X] Yes [ ] No If answer is "yes," type of consolidation Unitization

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.



Scale: 1"=1000'

CERTIFICATION

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

W. L. Peterson

Name: W. L. PETERSON

Position: DISTRICT ENGINEER

Company: AMOCO PRODUCTION COMPANY

Date: 3/12/81

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: March 2, 1981

Registered Professional Engineer and Land Surveyor

Fred B. Kerr Jr.

Certificate No. 3950

WELL NAME: Rosa Unit No. 87 FIELD: Wildcat Gallup

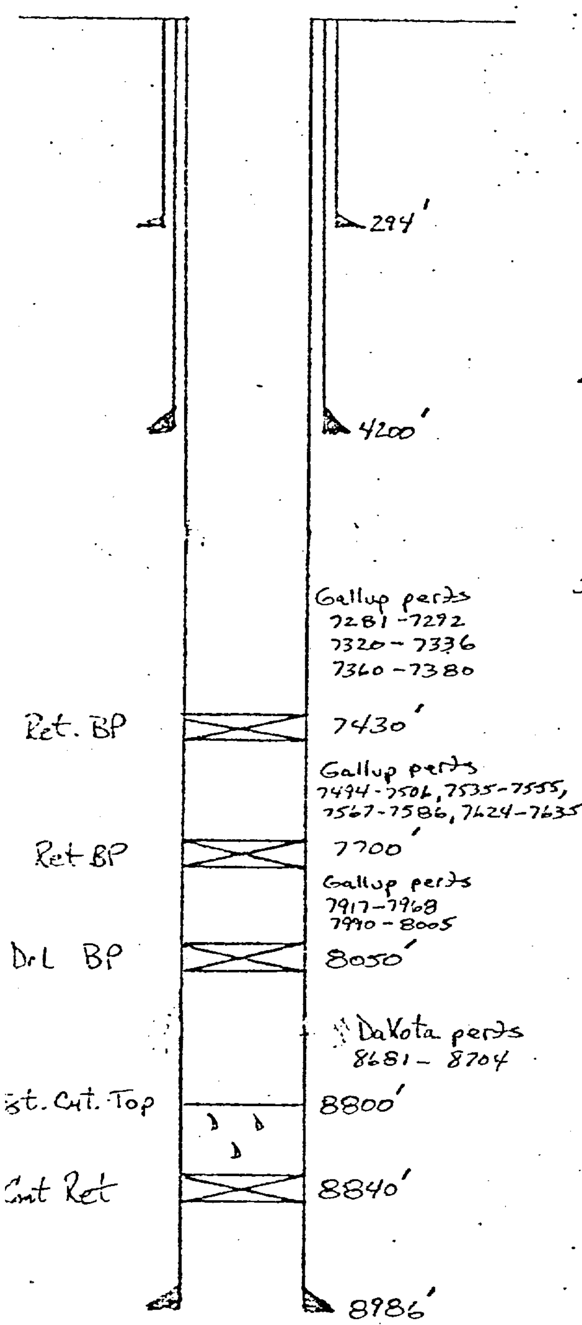
LOCATION: NW/4, Section 12, T31N, R4W FORMATION(S): Gallup - 3 Stages
Rio Arriba County, NM

ELEVATIONS: KB: 7017 TD: 8986 PBD: 8800

CASING: 13 3/8", H-40, 40 #/ft CSA 294'
9 5/8", K-55, 32.3 #/ft CSA 4200'
5 1/2", K-55, 15.5 #/ft Liner from surface to 4071'
5 1/2", N-80, 17 #/ft Liner from 4071' to 8986'

DV TOOL SET AT: 3697'

WELLBORE SKETCH



PROCEDURE

1. Wireline set a drillable BP at 8050'.
2. TIH with tubing and packer. Displace hole with 2% KCl water.
3. Set packer inside N-80 Liner (4071') and pressure test BP and Liner to 6190 psi. Release packer and TOH with tubing.
4. Perforate density log interval 7917' to 7968' and 7990' to 8005' with 2 JSPF using casing gun.
5. TIH with 3 1/2 inch tubing and packer. Set packer inside N-80 Liner and breakdown perfs as follows:
   a. Establish Rate with 2% KCl (20-25 bpm).
   b. Shut down and obtain ISIP.
   c. Re-establish Rate and drop 210 ballsealers in 75 barrels of 2% KCl water. Do not exceed 5500 psi on ball off.
   D. Flow well back to flow balls off perfs. Release packer and trip tubing to bottom to knock balls off perfs. Circulate out ballsealers.
6. Pick up tubing and set packer at 7900'. Swab to recover load.
7. Flow well through production unit and record productivity.
8. Test well until District office notifies to proceed with frac.
9. Frac Gallup down 3 1/2 inch tubing (set at 4071' - 4200') and liner with 83,000 gallons of 40 # crosslinked gelled water containing 2% KCl water, 1 gal surfactant per 1000 gals frac fluid, 12 hour breaker at 210°F, and 142,000 # of 20-40 mesh sand at 20-25 bpm as follows:

WCP, GCM, JS, RWD 2/FF TDC → File

Fluid Volume (gals)	Slurry Volume (gals)	Sand Concentration (ppg)	Rate (bpm)
38,000	38,000	Pad	25
7,000	7,319	1	25
9,000	9,819	2	25
9,000	10,229	3	25
10,000	11,820	4	25
10,000	12,275	5	25
7,820	7,820	Flush	

10. Shut well in for gel to break. Run 3 temperature surveys at 45 m intervals from TD to 7400'.
11. Reset packer at 7900'. Swab to recover load.
12. Flow well and test productivity until District Office notifies t continue to second stage (see note 3).
13. Tubing set a retrievable BP at 7700'.
14. Pick up tubing and Displace hole with 2% KCl water. Set packer and pressure test BP and Liner (N-80) to 6190 psi.
15. Perforate density log intervals 7494' to 7506', 7535' to 7555', 7567' t 7584', and 7624' to 7635' with 2 JSPF with tubing gun.
16. Breakdown perfs down tubing and Liner as follows:
    a. Establish rate of 20 to 25 bpm with 2% KCl water.
    b. Shut down and obtain ISIP.
    c. Re-establish rate and drop 170 ballsealers in 65 barrels of 2% KCl water. Do not exceed 5500 psi on ball off.
    D. Flow well back to flow ballsealers off perfs. Release packer and trip to bottom to knock ballsealers off perfs. Circulate o ballsealers.
17. Pick up tubing and set packer at 7480'. Swab to recover load
18. Flow well through production unit and record productivity. Obta earliest possible gas sample and return to District Office as soon as possible.
19. Test zone until District office notifies to continue with fra

20. Reset packer at 4071' to 4200' and frac Gallup down 3½ inch tubing and N-80 liner with 88,000 gallons of 40# crosslinked gelled water containing 2% KCl water, 1 gal surfactant per 1000 gals frac fluid, 12 hour breaker at 210°F and 195,000 # of 20-40 mesh sand as follows:

Fluid Volume (gals)	Slurry Volume (gals)	Sand Conc (ppg)	Rate (bpm)
34,000	34,000	Pad	25
4,000	4,182	1	25
9,000	9,819	2	25
9,000	10,229	3	25
14,000	16,549	4	25
18,000	22,096	5	25
7,400	7,400	Flush	

21. Shut well in for gel to break. Run 3 temperature surveys at 45 min intervals from TD to 7000'.
22. Reset packer at 7480'. Swab to recover load.
23. Flow well and test productivity until District Office notifies to procede to Bird stage (see note 3).
24. Wireline set a retrievable BP at 7430'.
25. Displace hole with 2% KCl water and pressure test BP and liner (N-80) to 6190 psi.
26. Perforate density log intervals 7281' to 7292', 7320' to 7336', and 7360' to 7380' with 2 JSPF with casing gun.
27. TIH with 3½ inch tubing and packer. Set packer inside N-80 liner and breakdown perfs as follows:
    a. Establish rate of 20 to 25 bpm with 2% KCl water.
    b. Shut down and obtain ISIP.
    c. Re-establish rate and drop 130 ballsealers in 50 barrels of 2% KCl water.
    d. Flow well back to flow ballsealers off perfs. Trip to bottom with bag to knock ballsealers off perfs. Circulate out ballsealers.

28. Pick up tubing and set packer at 7260'. Swab to recover load.
29. Flow well to production unit and test productivity.
30. Test zone until District Office notifies to continue with frac.
31. Reset packer inside N-80 Liner and frac Gallup down 3½ inch tubing and liner with 56,000 gallons of 40# crosslinked gelled water containing 2% KCl water, 1 gal surfactant per 1000 gals frac fluid, 12 hour breaker at 210°F, and 123,000 # of 20-40 mesh sand as follows:

Fluid Volume (gals)	Slurry Volume (gals)	Sand Conc (ppg)	Rate (bpm)
20,000	20,000	Pad	25
4,000	4,182	1	25
6,000	6,546	2	25
7,000	7,956	3	25
9,000	10,638	4	25
10,000	12,275	5	25
7,200	7,200	Flush	

32. Shut in well for gel to break. Run 3 temperature surveys at 45 min intervals from TD to 6700'.
33. Reset packer at 7260'. Swab to recover load.
34. Flow well through production unit and Record productivity.
35. Test zone until District Office notifies to proceed (see note 3)

Notes

1. Temperature surveys are very important in the development of the Gallup in this area. Make every possible effort to obtain them even if frac sands off.
2. Production tubing strings will be determined after testing the Gallup and Dakota production as outlined above.
3. Our operation technicians will obtain BHP before setting BP's and moving up to next zone. Do not move up hole until these are obtained