

NSL

9/29/97

**WALSH**

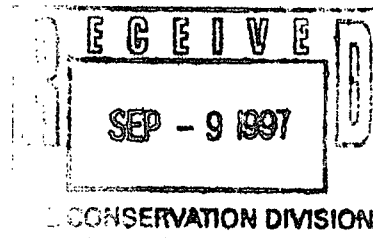
ENGINEERING & PRODUCTION CORP.

Petroleum Engineering Consulting
Lease Management
Contract Pumping7415 East Main
Farmington, New Mexico 87402
(505) 327-4892

September 5, 1997

Mr. William J. LeMay
New Mexico Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

Re: Non-Standard Location
Williams Production Company
Rosa Unit #66M
2565' FNL, 2350' FWL
Section 13, T31N R6W
Rio Arriba County, NM
Mesa Verde - Dakota Dual Well



Dear Mr. LeMay,

30-039-25747

This is a request on behalf of Williams Production Company for administrative approval for a non-standard gas location in the Blanco Mesa Verde and Basin Dakota pool for the referenced well.

The proposed spacing unit is the west half of Section 13, T31N, R6W, which is 320 acres. The east half of the section is smaller than normal due to a variation in the legal subdivision of the U.S. Public Land Surveys.

Williams proposes to drill this well as a directional well in an attempt to intersect naturally occurring fractures in both the Mesa Verde and Dakota formations. The top of the Mesa Verde is proposed to be 1904' FNL and 2074' FWL while the top of the Dakota will be penetrated at 1320' FNL and 1830' FWL. The well will be TD at 1089' FNL and 1734' FWL.

Williams ran 3-D seismic to assist them in determining the location and direction of the fracture systems. The wells drilling path was chosen so that the borehole will penetrate the fractures perpendicular to their direction.

Several surface locations were reviewed that would have resulted in the Mesa Verde and Dakota locations being penetrated inside the legal drilling windows, but in each case archaeological sites were found in the pad area.



As the Unit Operator of the Rosa Unit, Williams Production is the only offset operator. Attached is a plat indicating the well location and proposed spacing unit.

Thank you for your consideration and approval of this application. If you have any questions please do not hesitate to call upon me.

Sincerely,

A handwritten signature in cursive script, reading "Paul C. Thompson", followed by a horizontal line.

Paul C. Thompson, P.E.
President, Walsh Engineering

cc: Lance Hobbs, WPC
NMOCD Aztec NM
BLM Farmington NM

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

1a. TYPE OF WORK

DRILL ☒

DEEPEN ☐

070 FARMINGTON, NM

b. TYPE OF WELL

OIL WELL ☐

GAS WELL ☒

OTHER

SINGLE ZONE ☐

MULTIPLE ZONE ☐

2. NAME OF OPERATOR

WILLIAMS PRODUCTION COMPANY 120789

3. ADDRESS AND TELEPHONE NO.

c/o Walsh Engr. & Prod. Corp.

7415 E. Main Farmington, New Mexico 87402 (505) 327-4892

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

At surface

2565'FNL & 2350'FWL

At proposed prod. zone MV - 1904'FNL & 2074'FWL; DK - 1320'FNL & 1830'FWL

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

25 miles NE of Blanco, New Mexico

10. DISTANCE FROM PROPOSED*

LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drig. unit line, if any)

566'

16. NO. OF ACRES IN LEASE

2518.04

17. NO. OF ACRES ASSIGNED TO THIS WELL

w/ 320 - MV w/ 320 - DK

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

1700'

19. PROPOSED DEPTH

8120' TVD

20. ROTARY OR CABLE TOOLS

Rotary

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

6346' GR

This action is subject to technical and

23. procedural review pursuant to 43 CFR 31.65.3 and appeal pursuant to 43 CFR 31.65.4.

PROPOSED CASING AND CEMENTING PROGRAM

DRILLING OPERATIONS AUTHORIZED ARE SUBJECT TO COMPLIANCE WITH ATTACHED "GENERAL REQUIREMENTS"

SIZE OF HOLE	GRADE SIZE OF CASING	WEIGHT PER FOOT	SITTING DEPTH	QUANTITY OF CEMENT
17 1/2	13 3/8	48.0	300	345sx (415cuft) C1 "B"
12 1/4	9 5/8	36.0	3610	825sx (1760cuft)+330sx (396cuft)
8 3/4	7	26.0	6160	460sx (796cuft) C1 "B" w/4% gel
6 1/4	4 1/2	11.6	6100 - 8650	210sx (315cuft) C1 "H" w/35% silica flour

Williams Production Company proposes to drill a directional well to test the Blanco Mesa Verde and Basin Dakota Pools according to the attached Drilling Program and Surface Use Plan.

This location was archaeologically surveyed by Southwest Archaeological Services. Copies of their report were sent directly to your office.

This APD is also serving as an application to obtain BLM road and pipeline ROW. The well will be accessed by a new road approximately 1900' long that crosses the N2/SW of Section 13 where it connects with an existing road that continues across the S2/SE of Section 14 where it joins the Rosa Road. The Rosa Road continues for 15 miles where it joins the Sims Mesa Highway. The pipeline will follow the access route.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, 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.

SIGNED

Paul C. Thompson

TITLE

Agent

DATE

9/8/97

(This space for Federal or State office use)

PERMIT NO.

APPROVAL DATE

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

CONDITIONS OF APPROVAL, IF ANY

APPROVED BY

IS/Duane W. Spencer

TITLE

DATE

OCT - 9 1997

District I
PO Box 1980, Hobbs, NM 88241-1980

District II
PO Drawer DD, Artesia, NM 88211-0719

District III
1000 Rio Brazos Rd., Aztec, NM 87410

District IV
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

Feb. C-10.
Revised February 11, 1994
Instructions on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 57-634-25740		*Pool Code 72319	*Pool Name Blanco Mesa Verde
*Property Code 17033	*Property Name ROSA UNIT		*Well Number 66M
*OGRID No. 120782	*Operator Name Williams Production Company		*Elevation 6346'

¹⁰ Surface Location

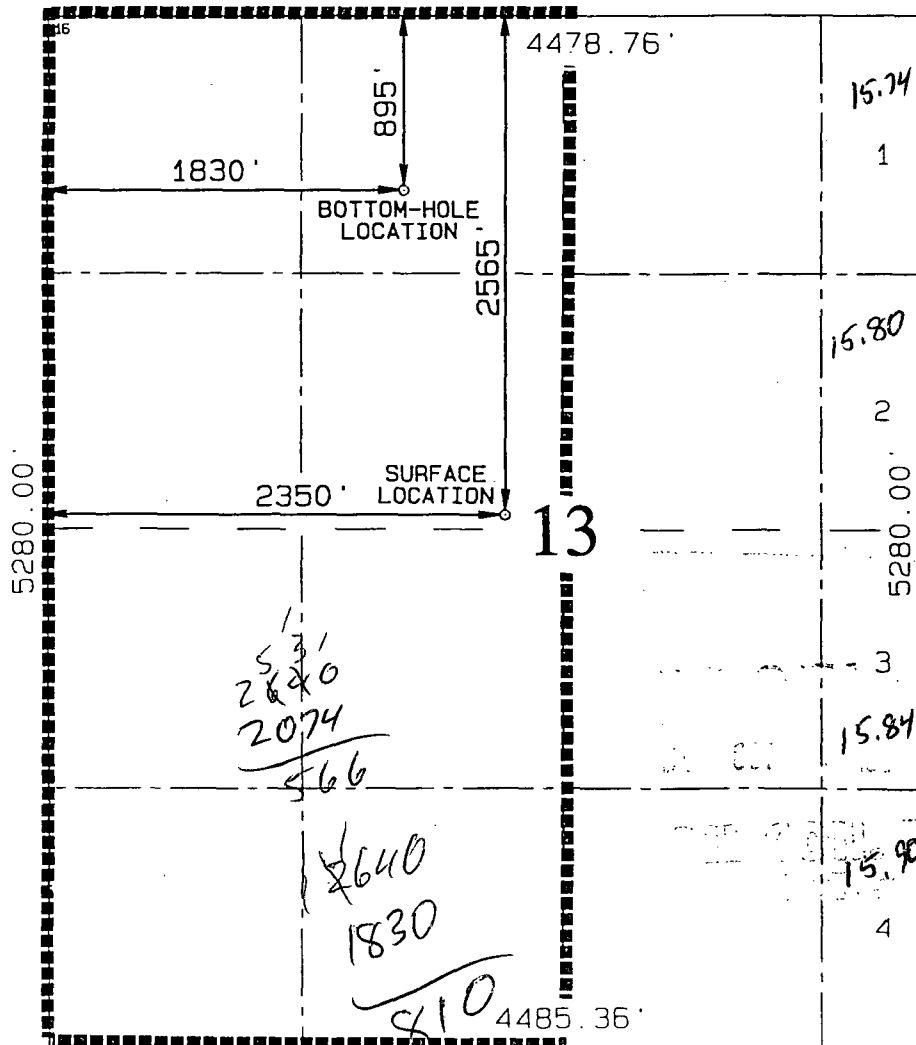
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	13	31N	6W		2565	North	2350	West	Rio Arriba

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	13	31N	6W		895	North	1830	West	Rio Arriba

¹² Dedicated Acres 320	¹³ Joint or Infill I Y	¹⁴ Consolidation Code u	¹⁵ Order No.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



¹⁷ OPERATOR CERTIFICATION
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief

Paul C. Thompson
Signature
Paul C. Thompson
Printed Name
Agent
Title
9/8/97
Date

¹⁸ SURVEYOR CERTIFICATION
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 belief.

AUG 11 1997
Date of Survey
Signature of Registered Professional Surveyor
NEALE C. EDWARDS
NEW MEXICO
6857
REGISTERED PROFESSIONAL SURVEYOR
6857
Certificate Number

District I
PO Box 1980, Hobbs, NM 88241-1980

State of New Mexico
Energy, Minerals & Natural Resources Department

Form 5-10a
Revised February 23, 1994

District II
PO Drawer DD, Artesia, NM 88211-0719

OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

District III
1000 Rio Brazos Rd., Aztec, NM 87410

District IV
PO Box 2088, Santa Fe, NM 87504-2088

SEP 12 PM 1:02

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number		*Pool Code 71599	*Pool Name Basin Dakota
*Property Code 17033	*Property Name ROSA UNIT		*Well Number 66M
*GRID No. 120782	*Operator Name Williams Production Company		*Elevation 6346'

¹⁰ Surface Location

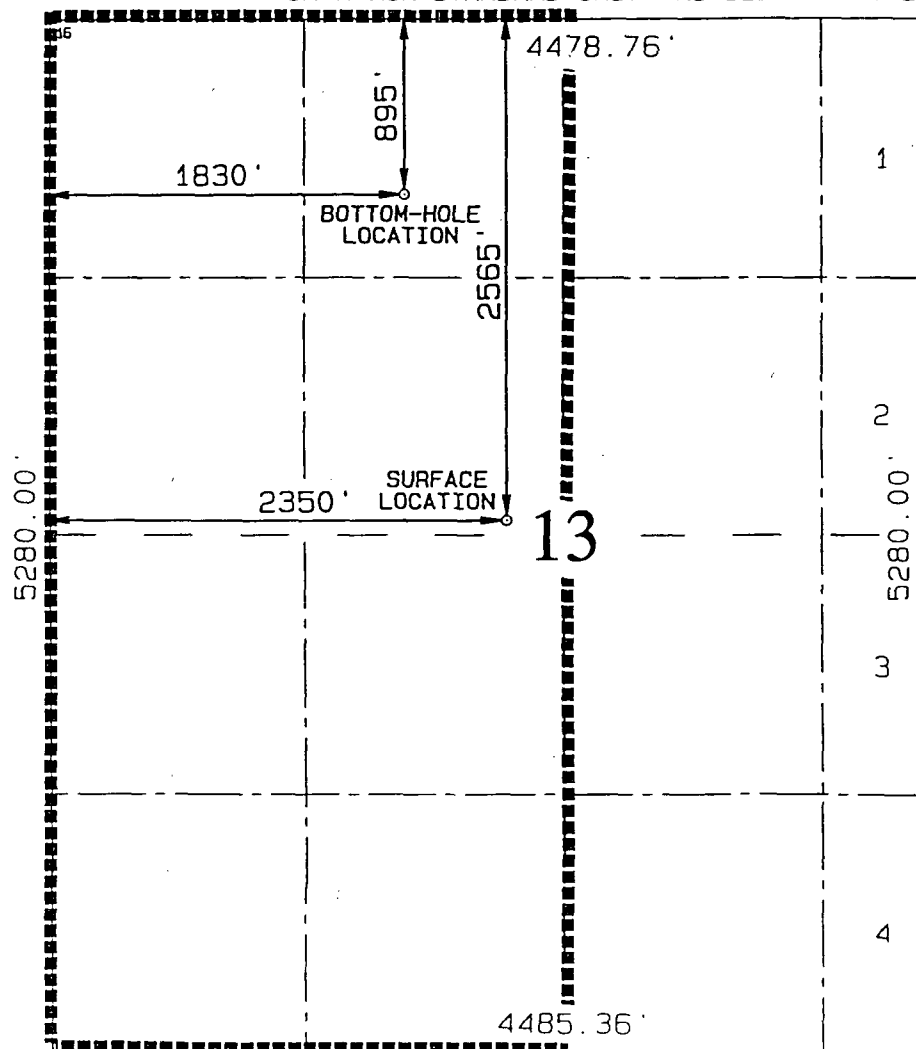
UL or lot no. F	Section 13	Township 31N	Range 6W	Lot Idn	Feet from the 2565	North/South line North	Feet from the 2350	East/West line West	County Rio Arriba
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¹¹ Bottom Hole Location If Different From Surface

UL or lot no. C	Section 13	Township 31N	Range 6W	Lot Idn	Feet from the 895	North/South line North	Feet from the 1830	East/West line West	County Rio Arriba
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¹² Dedicated Acres 320	¹³ Joint or Infill I	¹⁴ Consolidation Code U	¹⁵ Order No.
--------------------------------------	------------------------------------	---------------------------------------	-------------------------

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OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



¹⁷ OPERATOR CERTIFICATION

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

Paul C. Thompson
Signature

Paul C. Thompson
Printed Name
Agent

Title
9/8/97

Date

¹⁸ SURVEYOR CERTIFICATION

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 belief.

AUG 11 1997

Date of Survey

Signature of Registered Professional Surveyor

NEALE C. EDWARDS
NEW MEXICO
6857
REGISTERED PROFESSIONAL SURVEYOR
6857
Certificate Number

WILLIAMS PRODUCTION COMPANY
OPERATIONS PLAN

DATE: 08/29/97

WELLNAME: ROSA #66M
LOCATION: 2350' FWL 2565' FNL
Sec. 13, T31N, R6W
Rio Arriba, NM

FIELD: Blanco MV/Basin DK

SURFACE: BLM

MINERALS: BLM

ELEVATION: 6348' GR

TOTAL DEPTH: 8124' TVD 8650' MD

LEASE # SF-078767

I. GEOLOGY: Surface formation - San Jose

A. FORMATION TOPS: (TVD @ KB)

Ojo Alamo	2420'	Point Lookout	5650'
Kirtland	2525'	Mancos	5785'
Fruitland	2925'	Gallup	6450'
Pictured Cliffs	3180'	Greenhorn	7710'
Lewis	3460'	Graneros	7770'
Cliff House	5385'	Dakota	7870'
Menefee	5430'	Total Depth	8120'

NOTE: ALL DEPTHS ARE TVD; ADJUST DEPTHS IN DIRECTIONAL SECTION OF HOLE FOR LOGS & GAUGES.

B. LOGGING PROGRAM: IND/GR, CDL/SNL;

- 1) Mesa Verde from 3000' to 5800'
- 2) Dakota from TD to 300' above the top of the Greenhorn

C. NATURAL GAUGES: Gauge any noticeable increases in gas flow.

Gauge well @ 5350', 5430', 5640', 5800', 7850' and before TOH for logs @ 8120'.

Record all gauges in Tour book and on morning reports.

II. DRILLING

A. MUD PROGRAM:

- 1) Clear water with benex in the 13 3/8" Surface Hole.
 - 2) Clear water with benex in the 9-5/8" Intermediate Hole.
 - 3) Air mist in the 7" Mesa Verde Production Hole.
 - 4) Air mist in the 4-1/2" Dakota Production Hole. This section of hole may be mudded up if deviations cannot be maintained with air mist. Treat for lost circulation as necessary.
- Expect 100% returns prior to cementing. Notify Engineering before mudding up or of any mud losses.

B. BOP TESTING: While drill pipe is in use, the pipe rams will be tested not less than once each day. The blind rams will be tested once each trip. The drum brakes will be inspected and tested each tour. All tests and inspections will be recorded in the tour book as to time and results.

III. MATERIALS

A. CASING PROGRAM:(DEPTHS ARE MEASURED DEPTHS)

<u>CASING TYPE</u>	<u>HOLE SIZE</u>	<u>DEPTH(MD)</u>	<u>CASING SIZE</u>	<u>WT. & GRADE</u>
Surface	17-1/2"	300'	13-3/8"	48.00# H-40
Intermediate	12-1/4"	3610'	9-5/8"	36.0# K-55
MV Production	8-3/4"	6160'	7"	26.0# K-55
DK Production	6-1/4"	6100'-8650'	4-1/2"	11.6# N-80

B. FLOAT EQUIPMENT:

- 1) SURFACE CASING: 13-3/8" notched regular pattern guide shoe.
- 2) INTERMEDIATE CASING: 9-5/8" cement nose guide shoe with a self- fill insert float. Place float one (1) joint above the shoe and five (5) centralizers, spaced every other joint, starting with the float collar. Place turbulent centralizers, every third (3), starting at 2525' to the surface. Total centralizers = 5 regular and 21 turbulent.
- 3) MV PRODUCTION CASING: 7" cement nose guide shoe with a self - fill insert float. Place float one (1) joint above the shoe. Place one (1) centralizer every joint 6820' to 4500' and then every third (3) joint from 4500' to 3510'. Total centralizers = 61. Place a 20' marker joint on top of the 20th joint.
- 4) DK PRODUCTION LINER: 4-1/2" whirler type cement nose guide shoe with a float collar and an insert float on top of a 20' bottom joint. Place one (1) centralizer from TD to 7500' and then every third (3) joint from 7500' to top of Production Liner. Total centralizers = 29. Place a 20" marker joint on top of the 10th joint.

C. CEMENTING:

- 1) SURFACE: Use 345 sx (415 cu.ft.) of class "B" with 3% CaCl₂ and 1/4# of cello-flake/sk (Yield = 1.19 cu.ft./sk, Weight = 15.6 #/gal.). Use 100% excess to circulate the surface. WOC 12 hours. Test to 1500#.
- 2) INTERMEDIATE (9-5/8"): Lead - 825 sx (1760 cu.ft.) of class "B" 65/35 poz with 10% gel, 2% CaCl₂, and 1/4# cello-flake/sk (Yield = 2.13 cu.ft./sk, Weight = 12.1 #/gal.). Tail - 330 sx (396 cu.ft.) of class "B" with 2% CaCl₂ and 1/4# celloflake/sk (Yield = 1.20 cu.ft./sk, Weight = 15.6#/gal.). Use 100% excess in lead and 75% excess in tail to circulate to surface. Total volume = 2156 cu.ft. WOC 12 hours.
Run a temperature survey after 8 hours if cement is not circulated.
Test to 1500#.
- 3) MV PRODUCTION CASING (7"): Use- 460 sx (796 cu.ft.) of class "B" with 4% gel, 2% CaCl₂, 0.5% FL-25, and 0.02 gal/sk FP-6L (Yield = 1.75 cu.ft./sk, Weight = 15.6 lb/gal). Use 60% excess to circulate into 9-5/8". WOC 12 hrs.
Run a temperature survey after 8 hrs if cement is not circulated.
Test to 1500#.
- 4) DK PRODUCTION LINER(4 1/2"): Use- 210 sx (315 cu.ft.) of class "H" with 35% silica flour, 1.8% FL-62 , 0.2% A-2, 0.02 gal/sk FP-6L (Yield = 1.50 cu.ft./sk, Weight = 15.9 #/gal.) Use 60% excess to cover liner top.
WOC 12 hours. Test to 1500#.

IV COMPLETION

A. PRESSURE TEST

1. Pressure test 7" casing to 3300# for 15 minutes. 4-1/2" casing to 6000# for 15 minutes using 3-1/2" frac string.

B. STIMULATION

1. Stimulate Dakota with approximately 70,000# of 20/40 sand.
2. Isolate Dakota with a DBP.
3. Stimulate the Point Lookout with approximately 80,000# of 20/40 sand.
4. Isolate Point Lookout with a RBP.
5. Stimulate the Menefee and Cliffhouse with approximately 80,000# of 20/40 sand.
6. Test each zone before removing bridge plugs.

C. RUNNING TUBING

1. Dakota: Run 2-1/16", 3.25#, IJ tubing with 1/2 mule shoe on bottom, SN with pump-out plug on top of bottom joint and five(5) Seal Units. Land tubing approximately 100' above bottom Dakota perf.
2. Mesa Verde: Run 2-1/16", 3.25#, IJ tubing with a bull plugged perforated nipple on bottom and a SN with pump-out plug on top of bottom joint. Land tubing approximately 100' above the bottom Point Lookout perforations.

Mike Turnbaugh 3/29/97

Mike Turnbaugh
Manager Operations & Engineering
Rocky Mountain Division

WILLIAMS PRODUCTION COMPANY

Structure : SEC.13-T31N-R6W

Well : ROSA UNIT #66M

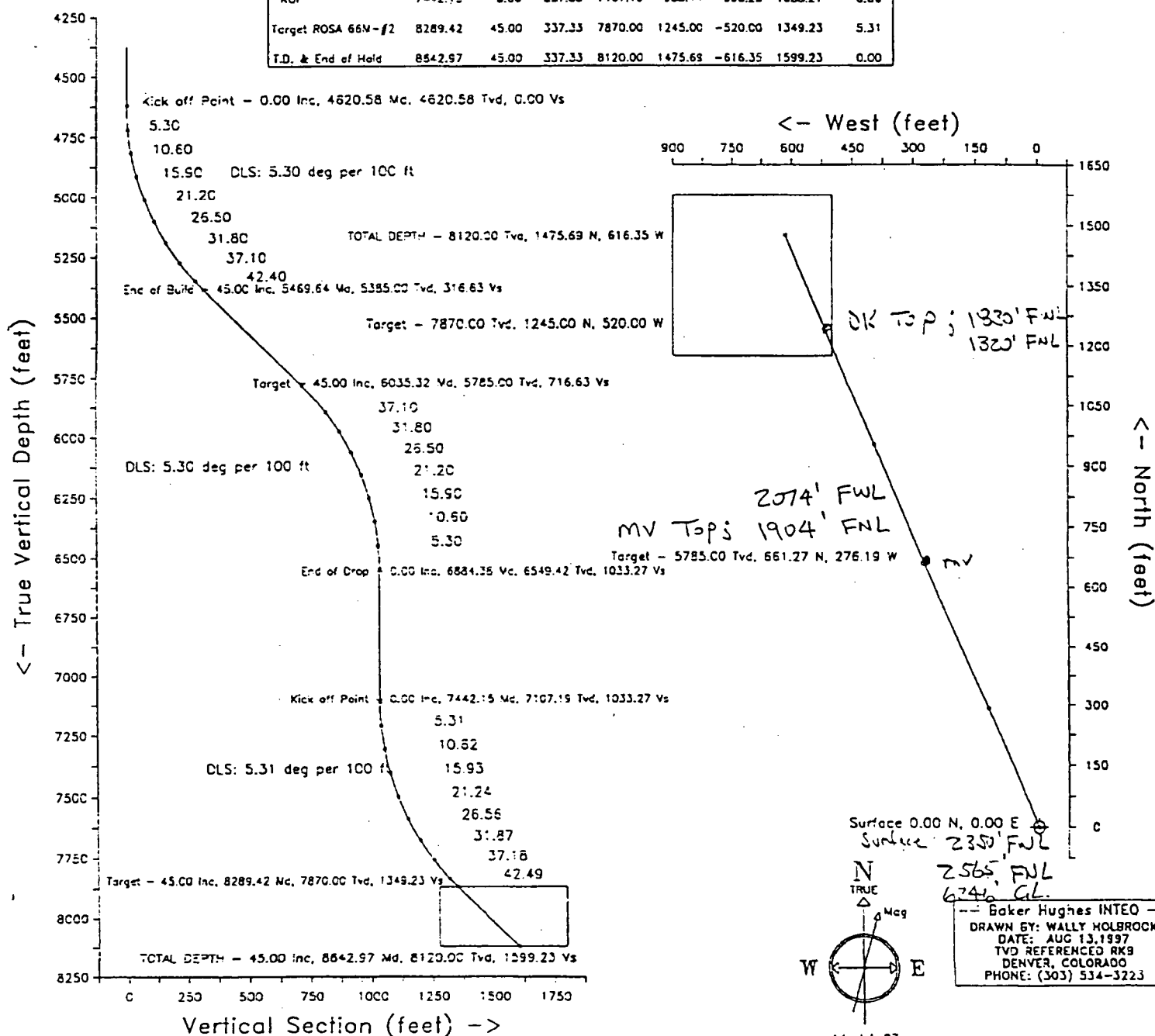
Field : SAN JUAN COUNTY

Location : NEW MEXICO.

(2) 13197

WELL PROFILE DATA

Point	MD	Inc	Dir	TVD	North	East	V. Sect	Deg/100
Tie on	0.00	0.00	337.33	0.00	0.00	0.00	0.00	0.00
KOP	4620.58	0.00	337.33	4620.58	0.00	0.00	0.00	0.00
End of Build	5465.64	45.00	337.33	5385.00	292.17	-122.03	316.63	5.30
Target	6035.32	45.00	337.33	5785.00	661.27	-276.19	716.63	0.00
End of Drop	6864.38	0.00	337.33	6549.42	953.44	-398.23	1033.27	5.30
KOP	7442.15	0.00	337.33	7107.19	953.44	-398.23	1033.27	0.00
Target ROSA 66M-#2	8289.42	45.00	337.33	7870.00	1245.00	-520.00	1349.23	5.31
T.D. & End of Hole	8642.97	45.00	337.33	8120.00	1475.69	-616.35	1599.23	0.00

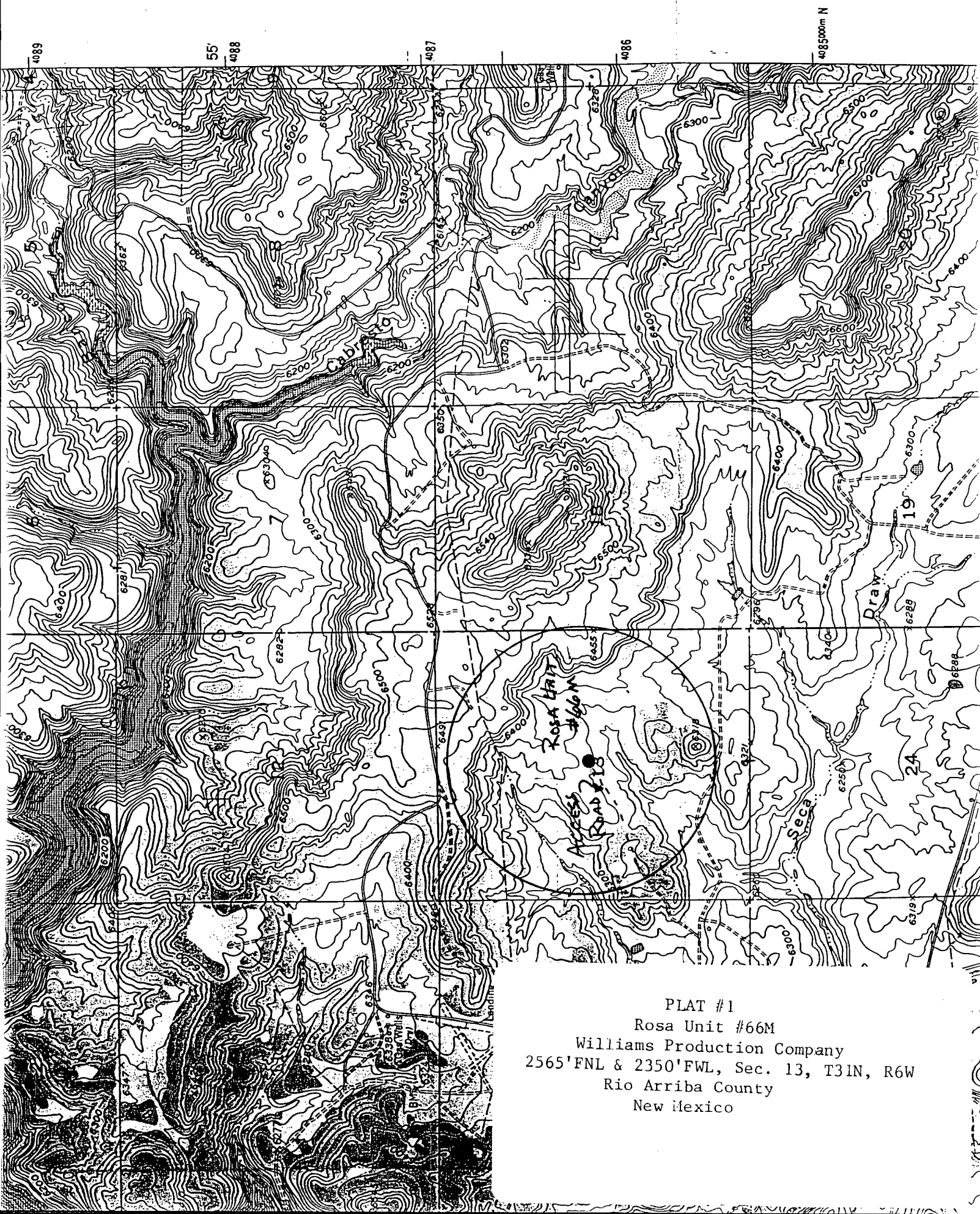


Azimuth 337.33 with reference 0.00 N, 0.00 E from SLOT #1

Baker Hughes INTEQ
 DRAWN BY: WALLY HOLBROCK
 DATE: AUG 13, 1997
 TVD REFERENCED RKB
 DENVER, COLORADO
 PHONE: (303) 534-3223

ROSA UNIT PORE PRESSURES

FORMATION	DEPTH	FRAC GRADIENT	PORE PRESSURE	RESERVOIR PRESS
FRUITLAND	2950	0.69	1578	1400
PICTURED CLIFFS	3200	0.65	1520	1400
CLIFF HOUSE	5200	0.50	1300	1200
MENEFEE	5350	0.50	1338	1200
POINT LOOKOUT	5650	0.48	1201	1200
GALLUP	6800	0.55	2210	2000
DAKOTA	7850	0.65	3729	2600
<p>Based on : $F = 1/3(1+2P/D)$ $P_f = (3F-1)D/2$</p> <p>Where: F = Frac Gradient P_f = Pore Pressure D = Depth</p>				



PLAT #1
Rosa Unit #66M
Williams Production Company
2565'FNL & 2350'FWL, Sec. 13, T31N, R6W
Rio Arriba County
New Mexico

CMD :
OG5SECT

ONGARD
INQUIRE LAND BY SECTION

10/21/97 17:23:16
OGOMES -EMD7
PAGE NO: 2

Sec : 13 Twp : 31N Rng : 06W Section Type : NORMAL

L 40.00 Federal owned U A	K 40.00 Federal owned U	J 40.00 Federal owned U A	3 15.84 Federal owned U
M 40.00 Federal owned U A A	N 40.00 Federal owned U	O 40.00 Federal owned U	4 15.90 Federal owned U

PF01 **HELP**
PF07 **BKWD**

PF02
PF08 **FWD**

PF03 **EXIT**
PF09 **PRINT**

PF04 **GoTo**
PF10 **SDIV**

PF05
PF11

PF06
PF12

CMD :
OG5SECT

ONGARD
INQUIRE LAND BY SECTION

10/21/97 17:23:10
OGOMES -EMD7
PAGE NO: 1

Sec : 13 Twp : 31N Rng : 06W Section Type : NORMAL

D 40.00 Federal owned U	C 40.00 Federal owned U	B 40.00 Federal owned U A A	1 15.74 Federal owned U
E 40.00 Federal owned U	F 40.00 Federal owned U A	G 40.00 Federal owned U	2 15.80 Federal owned U

PF01 HELP
PF07 BKWD

PF02
PF08 FWD

PF03 EXIT
PF09 PRINT

PF04 GoTo
PF10 SDIV

PF05
PF11

PF06
PF12

ROSA UNIT

San Juan and Rio Arriba Counties, New Mexico

Order No. 759, Approving Rosa Unit, San Juan and Rio Arriba Counties, New Mexico, Dated April 22, 1948.

Note: Present Operator of Unit: Pacific Northwest Pipeline (August, 1959.)

The Application of Stanolind Oil and Gas Company, Petitioner, for an Order of Approval of proposed Rosa Area Unit Agreement, the Unit Area of which embraces 54,209.49 acres, more or less, in Township 31 North, Ranges 4, 5, and 6 West and Township 32 North, Range 6 West, in the Counties of San Juan and Rio Arriba, New Mexico.

CASE NO. 133

Order No. 759

ORDER OF THE COMMISSION

BY THE COMMISSION: This cause came on for hearing at 10:00 o'clock a.m. April 22, 1948, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission".

NOW, on this the 22nd day of April, 1948, the Commission having before it for consideration the testimony and other evidence adduced at the hearing of said case and the application of petitioner and being fully advised in the premises:

FINDS that the proposed unit plan will in principle tend to promote the conservation of oil and gas and the prevention of waste, and that such plan is fair to the royalty owners and other interest owners;

IT IS THEREFORE ORDERED:

That the order herein shall be known as the:

"ROSA UNIT AGREEMENT ORDER"

SECTION 1. (a) That the project herein shall be known as the Rosa Unit Agreement and shall hereinafter be referred to as the Project.

(b) That the plan by which the Project shall be operated shall be embraced in the form of unit agreement for the development and operation of the Rosa Unit Area referred to in the petitioner's application and as finally submitted to the Commission in definitive revised form as a part of the testimony adduced at said hearing of April 22, 1948; and such plan shall be known as the Rosa Unit Agreement Plan.

SECTION 2. That the Rosa Agreement Plan shall be and is hereby approved in principle as a proper conservation measure; provided, however, that notwithstanding any of the provisions contained in said Unit Agreement, this approval of said agreement shall not be considered as waiving or relinquishing in any manner any rights, duties or obligations which are now

or may hereafter be vested in the New Mexico Oil Conservation Commission by law relative to the supervision and control of operations for exploration and development of any lands committed to said Rosa Unit Agreement or relative to the production of oil and gas therefrom.

SECTION 3. (a) That the Unit area shall consist of: NEW MEXICO PRINCIPAL MERIDIAN, NEW MEXICO, (San Juan and Rio Arriba Counties)

TOWNSHIP 31 NORTH, RANGE 4 WEST

Sections 1, 2, 3, 4, 5, 6, 7, 8,
9, 10, 11, 12, 13, 14,
15, 16, 17, 18, 19, 20,
21, 22, 23, 24, 25, 26,
27, 28, 29, 30, 31: All

TOWNSHIP 31 NORTH, RANGE 5 WEST

Sections 3, 4, 5, 6, 7, 8, 9, 10,
11, 12, 13, 14, 15, 16,
17, 18, 19, 20, 21, 22,
23, 24, 25, 26, 27, 28,
29, 30, 31, 32, 33, 34,
35, 36: All

TOWNSHIP 31 NORTH, RANGE 6 WEST

Sections 1, 2, 3, 4, 5, 8, 9, 10,
11, 12, 13, 14, 15, 16,
17, 21, 22, 23, 24, 25,
26: All

TOWNSHIP 32 NORTH, RANGE 6 WEST

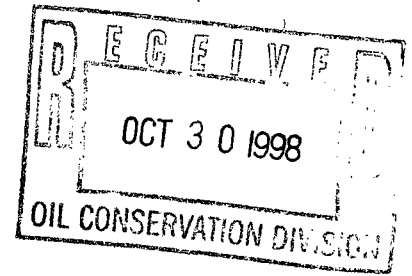
Sections 32, 33, 34, 35, 36: All
total unit area 54,209.49 acres more or less.

(b) That the Unit area may be enlarged or diminished as provided in said plan.

SECTION 4. That the unit operator shall file with the Commission an executed original, or executed counterparts thereof, of the Rosa Unit Agreement not later than 30 days after the effective date thereof.

SECTION 5. That any party owning rights in the unitized substances who does not commit such rights to said Unit Agreement before the effective date thereof may thereafter become a party thereto by subscribing to such Agreement or a counterpart thereof in the manner and with the effect therein expressly provided. The unit operator shall file with the Commission within 30 days thereafter an original of any such counterpart.

SECTION 6. That the order herein shall become effective as of the first day of the calendar month next following the approval of said Unit Agreement by the Commissioner of Public Lands and the Secretary of the Interior of the United States, and it shall terminate ipso facto upon the termination of said Unit Agreement. The last unit operator shall immediately notify the Commission in writing of any such termination.



Exploration and Production
One Williams Center, P. O. Box 3102, MS 37-3, Tulsa OK, 74101

October 23, 1998

New Mexico Oil and Gas Commission
P.O. Box 2088
State Land Office Building
Santa Fe, NM 87504

Attention: Michael Stogner
Chief Hearing Examiner/Engineer

Re: Application for Non Standard Blanco-Mesaverde infil gas well location for the Rosa Unit #66M
(API No. 30-039-25747), located 2350' FWL 2565' FNL, of section 13, 31N, 6W, NMPM,
Blanco-Mesaverde Pool, Rio Arriba County, NM.

Dear Mr. Stogner,

WPX is requesting a non-standard bottom hole location and a directional drill number for the MesaVerde interval of the subject well.

A geologic interpretation of 3-D seismic data indicated the possibility of extensive fracturing at the targeted bottom hole locations. It is believed that the naturally occurring fractures will result in significantly better recoveries.

The subject well was directionally drilled to penetrate the primary target, the Dakota Sandstone, within the boundaries of the standard drilling window. This was successfully done.

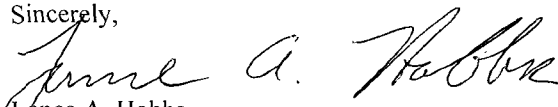
The secondary target, the MesaVerde interval, was penetrated approximately 45 feet east of the standard MesaVerde window.

The offset acreage lies within the boundaries of the Rosa Unit. As Unit operator Williams does not oppose the non-standard location.

If you have any questions concerning this request or any of the included information, please call me. My number is (918-573-3913).

Thank you again for your help

Sincerely,


Lance A. Hobbs
Production Engineer

*This address
to have sent the
required set forth
in the*
USC-3897
order.
No Action
Necessary
m s

DATE IN	SUSPENSE	ENGINEER	LOGGED BY	TYPE
---------	----------	----------	-----------	------

ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau -

2040 South Pacheco, Santa Fe, NM 87505



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

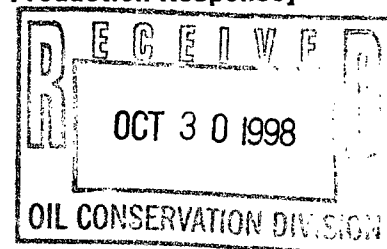
Check One Only for [B] or [C]

[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, RI, 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 taken.

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

Lance A. Hobbs
Print or Type Name

[Signature]
Signature

Production Engineer
Title

10/23/98
Date

District I
PO Box 1980, Hobbs, NM 88241-1980

District II
PO Drawer 00, Artesia, NM 88211-0719

District III
1000 Rio Brazos Rd., Aztec, NM 87410

District IV
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

Form C-102
Revised February 21, 1994
Instructions on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

97 SEP 12 PM 1:01

☐ AMENDED REPORT

070 FARMINGTON, NM

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number		Pool Code 72319	Pool Name Blanco Mesa Verde	
Property Code 17033	Property Name ROSA UNIT			Well Number 66M
GRID No. 120782	Operator Name Williams Production Company			Elevation 6346'

10 Surface Location

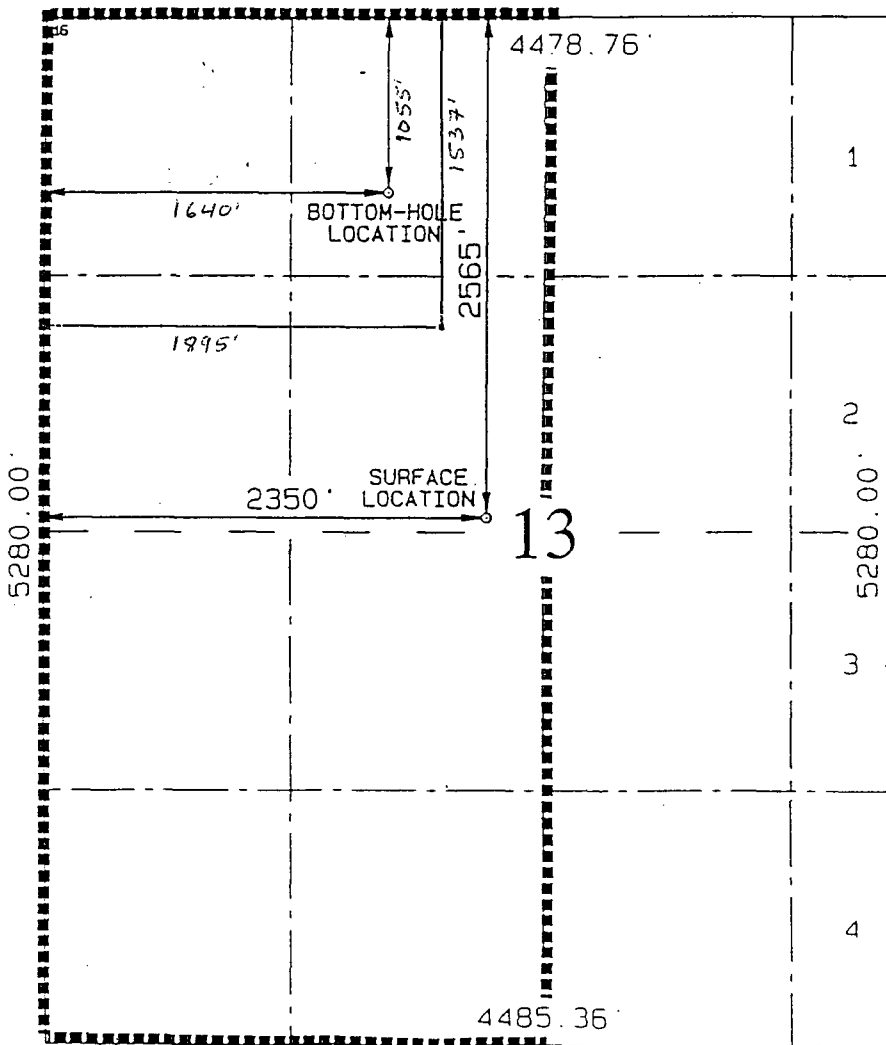
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	13	31N	6W		2565	North	2350	West	Rio Arriba

11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	13	31N	6W		895	North	1830	West	Rio Arriba

Dedicated Acres 320	Joint or Infill I	Consolidation Code U	Order No.
------------------------	----------------------	-------------------------	-----------

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



17 OPERATOR CERTIFICATION

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

Paul C. Thompson
Signature

Paul C. Thompson
Printed Name
Agent

Title
9/8/97
Date

18 SURVEYOR CERTIFICATION

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 belief.

AUG 11 1997
Date of Survey
Signature
NEALE C. EDWARDS
REGISTERED PROFESSIONAL SURVEYOR
6857
Certificate Number

2565'FWL - 2350'FWL

WILLIAMS PRODUCTION COMPANY
SEC.13-T31N-R6W, ROSA UNIT #66M
SAN JUAN COUNTY, NEW MEXICO.

PROPOSAL LISTING Page 2
Your ref : NEW PLAN, REV.#8
Last revised : 1-Apr-98

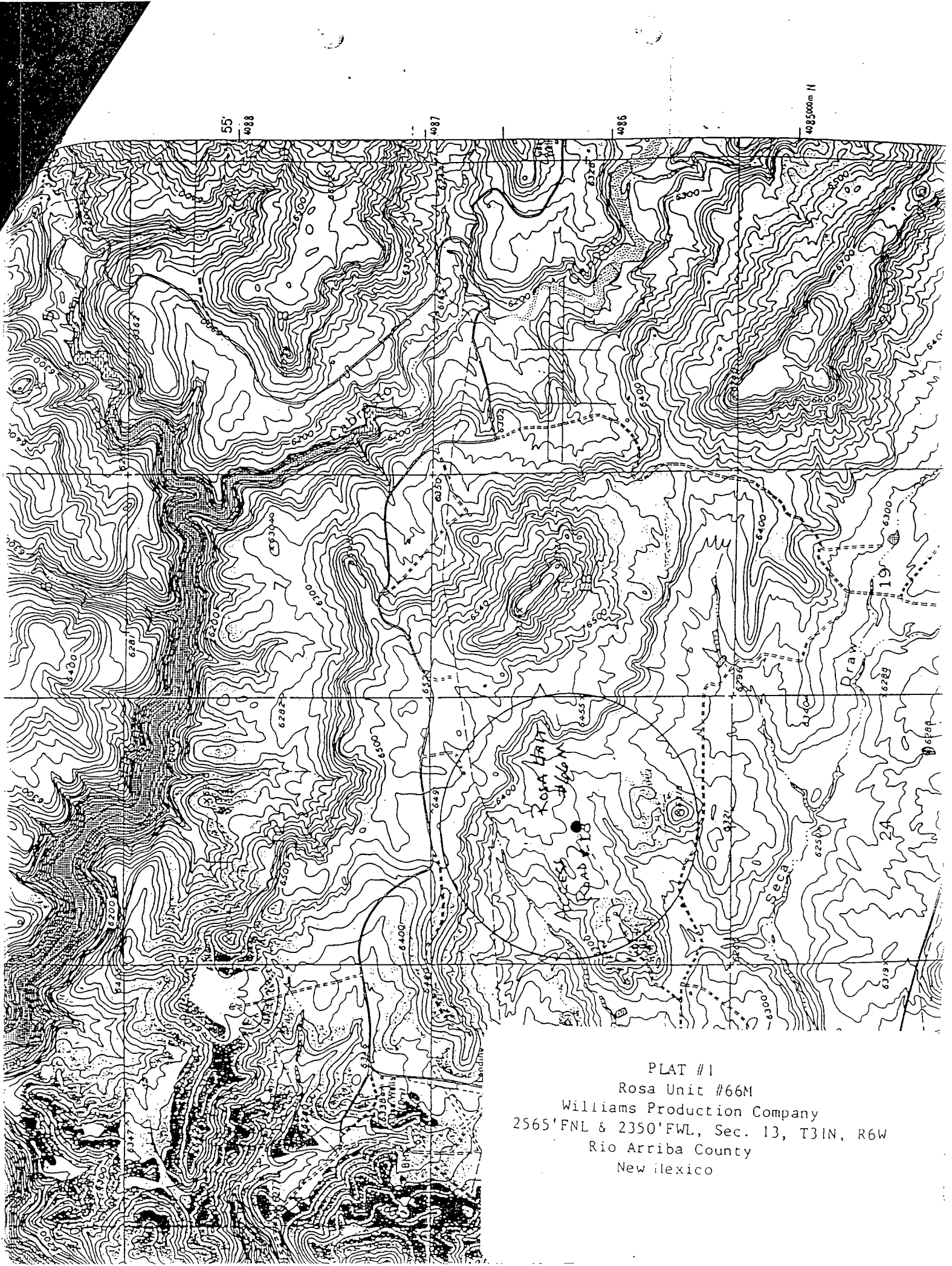
Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert Depth	R E C T A N G U L A R C O O R D I N A T E S	Dogleg Deg/100ft	Vert Sect
5700.00	44.96	334.86	5524.07	557.61 N 277.92 W	1.11	617.71
5800.00	44.94	336.43	5594.84	621.97 N 307.05 W	1.11	688.05
5900.00	44.94	338.01	5665.63	687.10 N 334.39 W	1.11	758.53
6000.00	44.96	339.59	5736.40	752.96 N 359.94 W	1.11	829.12
6089.91	45.00	341.00	5800.00	812.79 N 381.37 W	1.11	892.67
6189.59	40.01	341.00	5873.46	876.46 N 403.29 W	5.00	960.00
6289.59	35.01	341.00	5952.76	934.01 N 423.11 W	5.00	1020.88
6389.59	30.01	341.00	6037.06	984.82 N 440.61 W	5.00	1074.61
6489.59	25.01	341.00	6125.73	1028.48 N 455.64 W	5.00	1120.78
6589.59	20.01	341.00	6218.08	1064.66 N 468.10 W	5.00	1159.05
6689.59	15.01	341.00	6313.42	1093.09 N 477.89 W	5.00	1189.12
6789.59	10.00	341.00	6411.01	1113.56 N 484.94 W	5.00	1210.77
6889.59	5.00	341.00	6510.13	1125.90 N 489.19 W	5.00	1223.82
6989.59	0.00	341.00	6610.00	1130.02 N 490.61 W	5.00	1228.18
7000.00	0.00	341.00	6620.41	1130.02 N 490.61 W	0.00	1228.18
7500.00	0.00	341.00	7120.41	1130.02 N 490.61 W	0.00	1228.18
7629.59	0.00	341.00	7250.00	1130.02 N 490.61 W	0.00	1228.18
7729.59	6.53	341.00	7349.78	1135.41 N 492.46 W	6.53	1233.88
7829.59	13.07	341.00	7448.27	1151.50 N 498.00 W	6.53	1250.90
7929.59	19.60	341.00	7544.18	1178.08 N 507.15 W	6.53	1279.01
8029.59	26.14	341.00	7636.27	1214.81 N 519.80 W	6.53	1317.85
8129.59	32.67	341.00	7723.34	1261.21 N 535.77 W	6.53	1366.92
8229.59	39.21	341.00	7804.26	1316.67 N 554.87 W	6.53	1425.59
8318.24	45.00	341.00	7870.00	1372.85 N 574.22 W	6.53	1485.00
8500.00	45.00	341.00	7998.52	1494.37 N 616.06 W	0.00	1613.52

2007.39'FWL - 2072.08'FWL
1945.03'FWL - 2042.95'FWL
1879.9'FWL - 2015.61'FWL
1990.06'FWL
1968.63'FWL

Mesa Verde Base

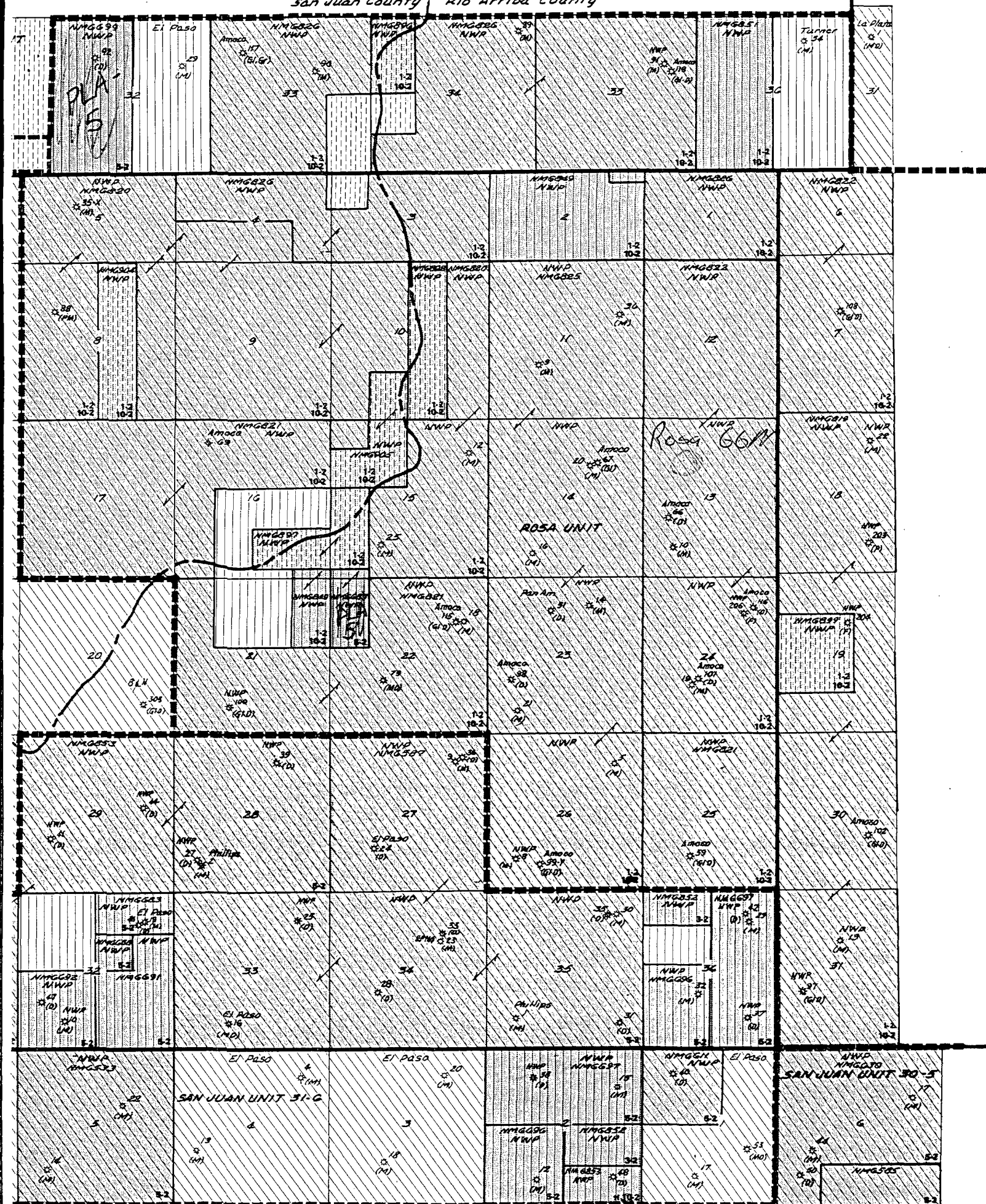
DAKOTA TOP






All data is in feet unless otherwise stated.
Coordinates from SLOT #1 and TVD from rotary table.
Bottom hole distance is 1737.65 on azimuth 337.83 degrees from wellhead.
Vertical section is from wellhead on azimuth 341.00 degrees.
Calculation uses the minimum curvature method.
Presented by Baker Hughes INTEQ



PLAT #1
Rosa Unit #66M
Williams Production Company
2565' FNL & 2350' FWL, Sec. 13, T31N, R6W
Rio Arriba County
New Mexico

San Juan County | Rio Arriba County



 *Federal Lands*
 *Indian Lands*
 *State Lands*
 *Fee Lands*
 *Northwest Pipeline Acreage*

31N-GW, NEW MEXICO

ROSA UNIT #66M MESAVERDE/DAKOTA

Location:

SE/4 NW/4 Sec 13, T31N R6W

2565' FNL and 2350' FWL

MV Bottom Hole: 1537' FNL and 1895' FWL

DK Bottom Hole: 1055' FNL and 1640' FWL

Rio Arriba, New Mexico

Elevation: 6346' GR

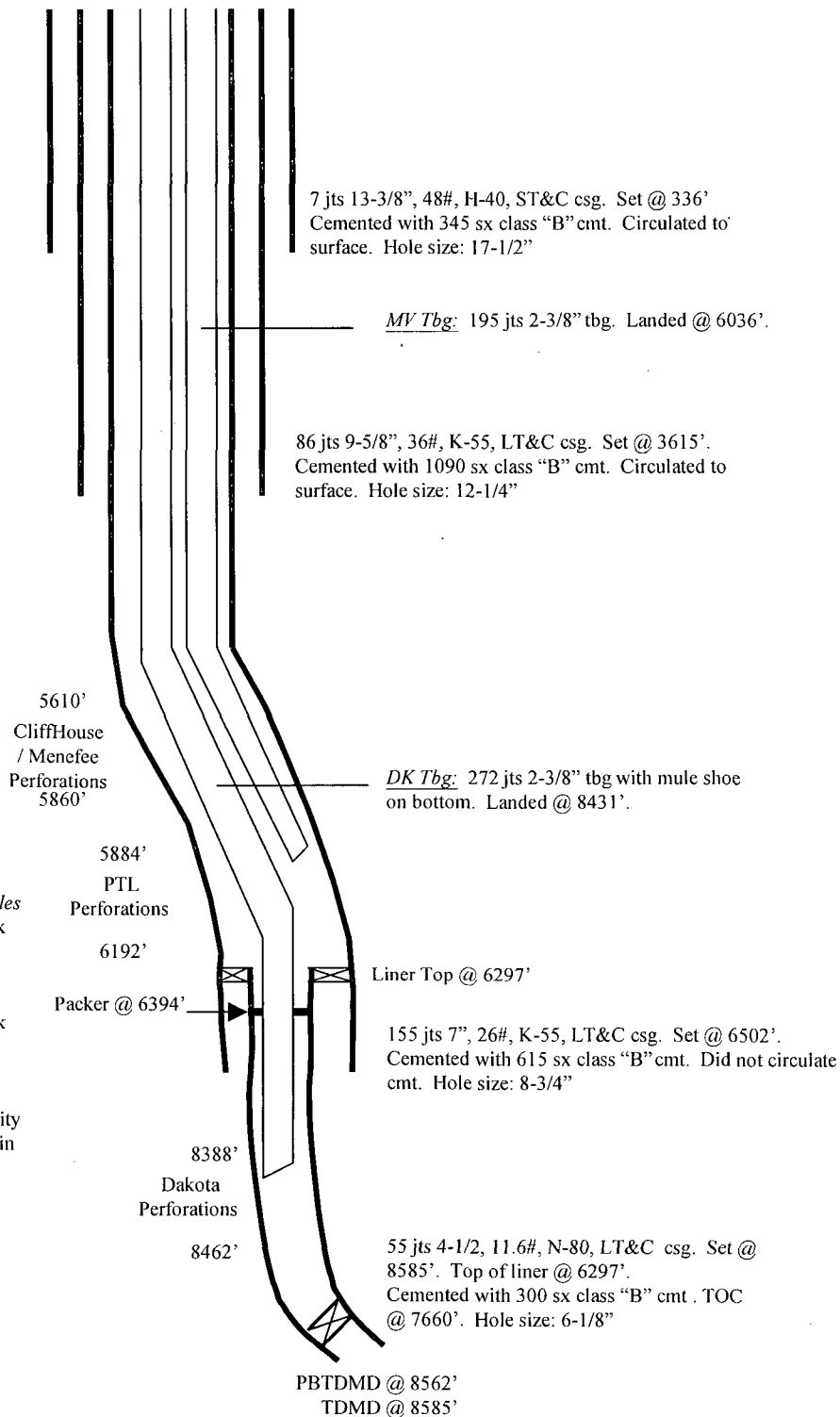
Top	Measured Depth	TVD
Ojo Alamo	2439'	2439'
Fruitland	2981'	2981'
Pictured Cliffs	3201'	3201'
Lewis	3488'	3488'
Cliff House	5290'	5160'
Menefee	5703'	5540'
Point Lookout	5967'	5660'
Mancos	6424'	6100'
Greenhorn	8163'	7740'
Dakota	8360'	7900'

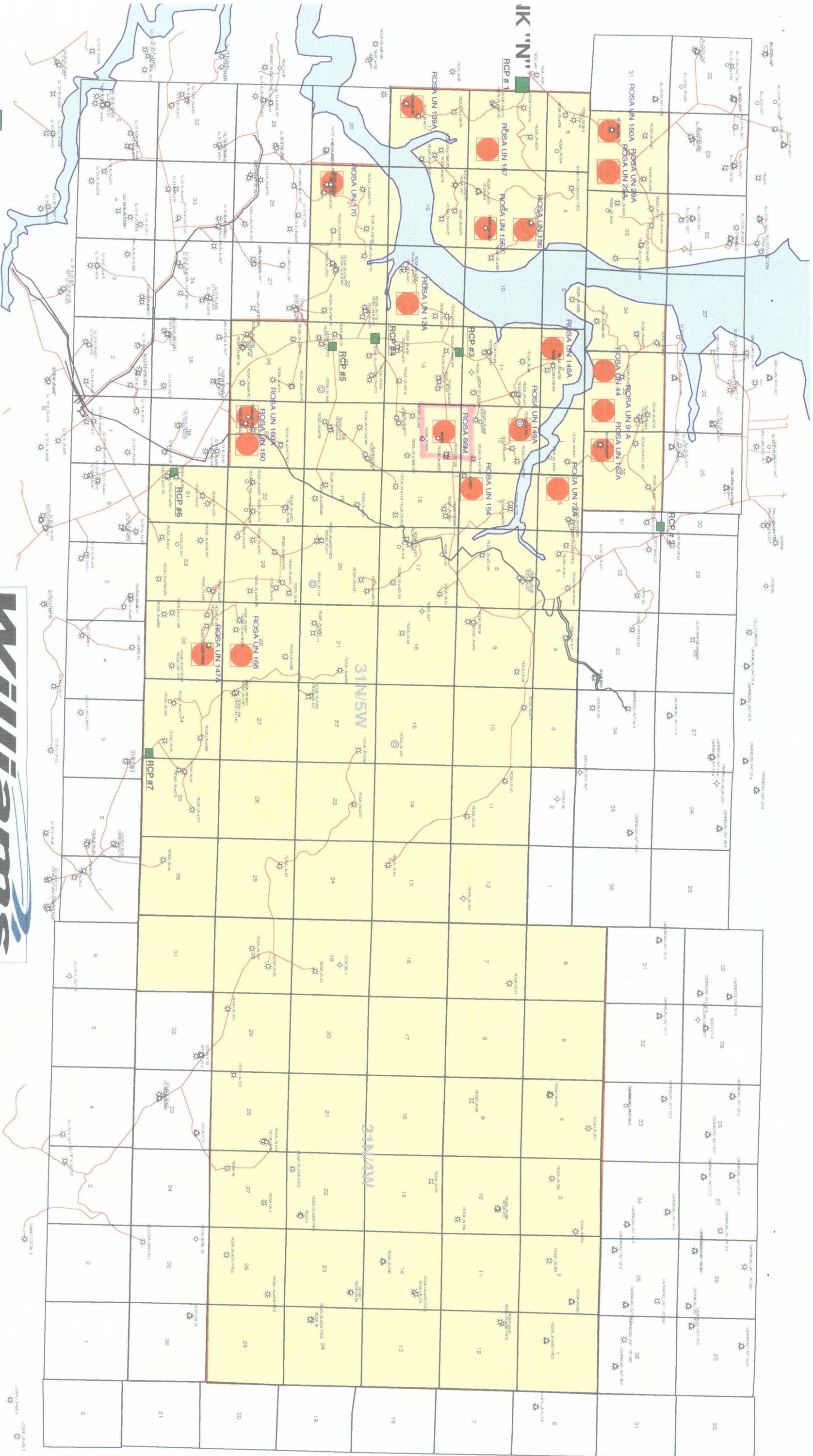
Stimulation

Cliff House/Menefee: 5610' - 5860'. 32 (0.37") holes
Fraced with 80,000# 20/40 sand in 2149 BBIs slick water.

Point Lookout: 5884' - 6192'. 37 holes
Fraced with 80,000# 20/40 sand in 2028 BBIs slick water.

Dakota: 8388' - 8462'. 19 (0.36") holes
Fraced with 37,000# 20/40 Ottawa sand in 50 quality foam. Re-fraced with 90,000# 20/40 Ottawa sand in 30# Borate cross-linked gel.





SAN JAN BASIN 1/98
GLOBAL

L.HOBBS	8/5/98
Scale 1:75666.12	lhmsoa.gpf

November 3, 1998

Williams Production Company
P. O. Box 3102
Tulsa, Oklahoma 74101

Attention: Lance A. Hobbs

*Administrative Order NSL-*****
(Non-Standard Subsurface Location/Producing Area)

Dear Mr. Hobbs:

Reference is made to your application dated October 23, 1998 for a non-standard infill Blanco-Mesaverde subsurface gas producing area/bottomhole infill gas well location, pursuant to Division General Rules 104.F, 111.C(2), and 111.A(7), within an existing standard _____-acre gas spacing and proration unit ("GPU") comprising the W/2 of Section 13, Township 31 North, Range 6 West, NMPM, Rio Arriba Juan County, New Mexico.

It is our understanding that Williams Production Company proposes to recomplete the existing Rosa Unit Well No. 66-M (**API No. 30-039-**_____) by side tracking off of the vertical portion of the wellbore and drilling a high angle slant hole to a predetermined bottom-hole location in order to further develop the Blanco-Mesaverde Pool underlying said GPU by attempting to intersect naturally occurring fractures.

The _____ is located at a standard surface gas well location 1650 feet from the South and East lines (Lot 14/Unit J) of said Section 30, was originally drilled and completed in 1975 as an infill Blanco-Mesaverde gas well within the above-described 323.89-acre GPU.

Within this GPU Williams Producing Company is also producing Blanco-Mesaverde gas from its _____ Well No. _____ (**API No. 30-039-**_____), located at a standard gas well location _____ feet from the _____ South and West lines (Lot 17/Unit M) of Section 13.

The applicable drilling window or "producing area" within the Blanco-Mesaverde Pool for said wellbore shall include that area within the subject 320-acre GPU that is:

Exhibit "A"
Case No. 11924
Order No. R-11058-A

Shahara Oil, L.L.C.
Proposed Injection Wells
Shahara State Unit Waterflood/Tertiary Recovery Project Area
Section 16, Township 17 South, Range 33 East, NMPM, Majamar-Grayburg San Andres Pool, Lea County, New Mexico.

Well Name and Number (Former Well Name and No.)	API Number	Footage Location	Unit	Injection Interval	Type of Well
Shahara State Unit Well No. 1 Phillips State Well No. 1	30-025-01428	1980' FNL & 660' FWL	E	74240' - 4396'	Conversion
Shahara State Unit Well No. 2 Phillips State Well No. 2	30-025-01429	660' FN & WL	D	4271' - 4412'	Active Injector
Shahara State Unit Well No. 3 Phillips State Well No. 3	30-025-01430	1980' FN & WL	F	4250' - 4411'	Conversion
Shahara State Unit Well No. 4 Phillips State Well No. 4	30-025-01431	660' FNL & 1980' FWL	C	4270' - 4428'	Conversion
Shahara State Unit Well No. 5 Phillips State Well No. 5	30-025-01432	1980' FSL & 660' FWL	L	4178' - 4380'	Conversion
Shahara State Unit Well No. 6 Phillips State Well No. 6	30-025-01433	1960' FSL & 1650' FWL	K	4278' - 4430'	Conversion
Shahara State Unit Well No. 7 Phillips State Well No. 7	30-025-01434	660' FSL - 1980' FWL	N	4304' - 4457'	Conversion
Shahara State Unit Well No. 8 Phillips State Well No. 8	30-025-01438	660' FS & WL	M	4120' - 4430'	Conversion

Map data copyright Etak, Inc, 1984-1998; use subject to license agreement.

(a) no closer than 790 feet to the South, West, and North lines of the NW/4 of Section 13; and,

(b) no closer than _____ feet to the East line of the subject unit boundary.

By the authority granted me under the provisions of Rule **2(d)** of the *"General Rules for The Prorated Gas Pools of New Mexico/Special Rules and Regulations for The Blanco-Mesaverde Pool,"* as promulgated by Division Order No. R-8170, as amended, the above-described non-standard subsurface infill gas producing area/bottomhole infill gas well location for the Hamilton Well No. 1-A is hereby approved.

Both the Rosa Unit Well Nos. _____ and 66-M are to be dedicated to the subject 320-acre GPU. Further both wells and GPU will be subject to all existing rules, regulations, policies, and procedures applicable to prorated gas pools in Northwest New Mexico.

The operator shall comply with all provisions of Division General Rule 111 applicable in this matter.

Sincerely,

Lori Wrotenbery
Director

LW/MES/kv

cc: New Mexico Oil Conservation Division - Aztec
U. S. Bureau of Land Management - Farmington

(19) Jurisdiction of this case is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

LORI WROTENBERY
Director

S E A L

S E A L

LORI WROTENBERY
Director

OIL CONSERVATION DIVISION

CMD :
OG5SECT

ONGARD
INQUIRE LAND BY SECTION

11/03/98 10:01:43
OGOIV -EMFA
PAGE NO: 1

Sec : 13 Twp : 31N Rng : 06W Section Type : NORMAL

D 40.00 Federal owned U	C 40.00 Federal owned U	B 40.00 Federal owned U A A	1 15.74 Federal owned U
E 40.00 Federal owned U	F 40.00 Federal owned U A	G 40.00 Federal owned U	2 15.80 Federal owned U

PF01 HELP
PF07 BKWD

PF02
PF08 FWD

PF03 EXIT
PF09 PRINT

PF04 GoTo
PF10 SDIV

PF05
PF11

PF06
PF12

CMD :
OG5SECT

ONGARD
INQUIRE LAND BY SECTION

11/03/98 10:01:54
OGOIV -EMFA
PAGE NO: 2

Sec : 13 Twp : 31N Rng : 06W Section Type : NORMAL

L 40.00 Federal owned U A	K 40.00 Federal owned U	J 40.00 Federal owned U A	3 15.84 Federal owned U
M 40.00 Federal owned U A A	N 40.00 Federal owned U	O 40.00 Federal owned U	4 15.90 Federal owned U

PF01 HELP
PF07 BKWD

PF02
PF08 FWD

PF03 EXIT
PF09 PRINT

PF04 GoTo
PF10 SDIV

PF05
PF11

PF06
PF12