

UNITED STATES  
DEPARTMENT OF INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
Budget Bureau No. 1004-0135  
Expires March 31, 1993

SUNDRY NOTICE AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir use "APPLICATION TO DRILL" for permit for such proposals

2007 AUG 22 AM 11:54

RECEIVED

070 FARMINGTON NM

SUBMIT IN TRIPLICATE

|                                                                                                                                                            |                                                               |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|
| 1. Type of Well<br>Oil Well Gas Well <input checked="" type="checkbox"/> Other                                                                             | 5. Lease Designation and Serial No<br>NMSF-078769             |
| 2. Name of Operator<br>WILLIAMS PRODUCTION COMPANY                                                                                                         | 6. If Indian, Allottee or Tribe Name                          |
| 3. Address and Telephone No.<br>PO Box 640 Aztec, NM 87410-0640                                                                                            | 7. If Unit or CA, Agreement Designation<br>Rosa Unit          |
| 4. Location of Well (Footage, Sec., T, R, M., or Survey Description)<br>Surface - 1090' FSL & 1145 FWL / BHL - 1650' FSL & 990' FWL, Sec. 21, T31, R5 NMPM | 8. Well Name and No<br>Rosa Unit #187C                        |
|                                                                                                                                                            | 9. API Well No<br>30-039-30185                                |
|                                                                                                                                                            | 10. Field and Pool, or Exploratory Area<br>BLANCO MV/BASIN DK |
|                                                                                                                                                            | 11. County or Parish, State<br>Rio Arriba, New Mexico         |

CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

| TYPE OF SUBMISSION                                                                                                                 | TYPE OF ACTION                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> Notice of Intent<br><input checked="" type="checkbox"/> Subsequent Report<br>Final Abandonment | Abandonment<br>Recompletion<br>Plugging Back<br>Casing Repair<br>Altering Casing<br><input checked="" type="checkbox"/> Other <u>Multiple zone completion</u><br>Change of Plans<br>New Construction<br>Non-Routine Fracturing<br>Water Shut-Off<br>Conversion to Injection<br>Dispose Water<br>(Note Report results of multiple completion on Well Completion or Recompletion Report and Log form ) |

13 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.)\*

Williams Production Company, LLC. requests authority to drill this as a Mesa Verde/Dakota dual as per attached plat, directional plan and operations plan.

RCVD AUG 29 '07  
OIL CONS. DIV.  
DIST. 3

HOLD 0104 FOR directional survey

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

Signed Larry Higgins  
Larry Higgins

Title Drilling C O M.

Date 8-22-07

(This space for Federal or State office use)

Approved by Troy L Salyers

Title PE

Date 8/27/2007

Conditions of approval, if any

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction

NMOCD 86

District I  
1625 N French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Rd., Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-102  
Revised October 12, 2005  
Instructions on back  
Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

30-039-30185

|                             |  |                                               |  |                                               |                      |
|-----------------------------|--|-----------------------------------------------|--|-----------------------------------------------|----------------------|
| *API Number<br>30-039-30185 |  | *Pool Code<br>72319 / 71599                   |  | *Pool Name<br>BLANCO MESAVERDE / BASIN DAKOTA |                      |
| *Property Code<br>17033     |  | *Property Name<br>ROSA UNIT                   |  |                                               | *Well Number<br>187C |
| *GRID No<br>120782          |  | *Operator Name<br>WILLIAMS PRODUCTION COMPANY |  |                                               | *Elevation<br>6801'  |

<sup>10</sup> Surface Location

| UL or lot no | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County     |
|--------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|------------|
| M            | 21      | 31N      | 5W    |         | 1090          | SOUTH            | 1145          | WEST           | RIO ARriba |

<sup>11</sup> 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                                   |
|------------------------------------------------------|---------|----------|-------|---------|-------------------------------|------------------|----------------------------------|----------------|------------------------------------------|
| L                                                    | 21      | 31N      | 5W    |         | 1650                          | SOUTH            | 990                              | WEST           | RIO ARriba                               |
| <sup>12</sup> Dedicated Acres<br>320.0 Acres - (W/2) |         |          |       |         | <sup>13</sup> Joint or Infill |                  | <sup>14</sup> Consolidation Code |                | <sup>15</sup> Order No<br>RCVD AUG 29 07 |

OIL CONS. DIV.

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

DIST. 3

|                                                                                                                                                                                                                                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <sup>16</sup><br>5287.26'<br>LEASE<br>SF-078769<br>5280.00'<br>21<br>5280.00'<br>BOTTOM-HOLE<br>LAT: 36.88235°N<br>LONG: 107.37331°W<br>DATUM: NAD83<br>990'<br>N15°59.1'W 580.3'<br>1145'<br>1650'<br>1090'<br>SURFACE LOCATION<br>LAT: 36.88081°N<br>LONG: 107.37277°W<br>DATUM: NAD83<br>2643.30' |  | <sup>17</sup> OPERATOR CERTIFICATION<br>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom-hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.<br>Larry Higgins 8-22-07<br>Signature Date<br>Larry Higgins<br>Printed Name<br><sup>18</sup> SURVEYOR CERTIFICATION<br>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.<br>Date of Survey: MAY 4, 2006<br>Signature and Seal of Professional Surveyor<br>JASON C. EDWARDS<br>15269<br>REGISTERED PROFESSIONAL SURVEYOR<br>JASON C. EDWARDS<br>Certificate Number 15269 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



## WILLIAMS PRODUCTION COMPANY

### Operations Plan

*(Note: This procedure will be adjusted on site based upon actual conditions)*

**DATE:** 8/21/2007 **FIELD:** Basin DK/ BlancoMV  
**WELL NAME:** Rosa #187C **SURFACE:** BLM  
**BH LOCATION:** NWSW Sec 21-31N-5W **MINERALS:** BLM  
Rio Arriba, NM  
**SURF LOCATION:** SWSW Sec 21-31N-5W  
Rio Arriba, NM  
**ELEVATION:** 6,801' GR **LEASE #** SF-078769  
**MEASURED DEPTH:** 8,522'

**I. GEOLOGY:** Surface formation - San Jose

**A. FORMATION TOPS:** ( KB)

| Name            | MD    | TVD   | Name          | MD    | TVD   |
|-----------------|-------|-------|---------------|-------|-------|
| Ojo Alamo       | 2,994 | 2,960 | Menefee       | 5,977 | 5,930 |
| Kirtland        | 3,095 | 3,060 | Point Lookout | 6,182 | 6,135 |
| Fruitland       | 3,527 | 3,485 | Mancos        | 6,492 | 6,445 |
| Pictured Cliffs | 3,740 | 3,695 | Gallup        | 7,492 | 7,445 |
| Lewis           | 4,040 | 3,995 | Greenhorn     | 8,212 | 8,165 |
| Cliff House     | 5,932 | 5,885 | Graneros      | 8,267 | 8,220 |
|                 |       |       | Dakota        | 8,397 | 8,350 |
|                 |       |       | TD            | 8,522 | 8,475 |

- B. MUD LOGGING PROGRAM:** Mudlogger on location at 100' above Gallup SS to TD. Mud logger to pick TD.
- C. LOGGING PROGRAM:** Cased Hole Logs only.
- D. NATURAL GAUGES:** Gauge any noticeable increases in gas flow. Record all gauges in Tour book and on morning reports.

## **II. DRILLING**

- A. MUD PROGRAM:** Clear water with benex to 7-5/8" casing point. Convert to a LSND mud to log and run pipe. Treat for lost circulation as necessary. Obtain 100% returns prior to cementing. Notify Engineering of any mud losses. Use air w/Air Hammer from 7-5/8in. csg.to TD.
- B. BOP TESTING:** While drill pipe is in use, the pipe rams and the blind rams will be function tested once each trip. The anticipated reservoir is expected to be less than 1300 psi, so the BOPE will be tested to **250 psi (Low) for 5 minutes** and **1500 psi (High) for 10 minutes**. Utilize a BOPE Testing Unit with a recording chart and appropriate test plug for testing. 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:**

| CASING TYPE  | OH SIZE (IN) | DEPTH (MD) (FT) | CASING SIZE (IN) | WEIGHT(LB) | GRADE |
|--------------|--------------|-----------------|------------------|------------|-------|
| Surface      | 14 3/4       | 310             | 10 3/4           | 40.5       | K-55  |
| Intermediate | 9 7/8        | 4,217           | 7 5/8            | 26.4       | K-55  |
| Longstring   | 6 3/4        | 8,522           | 5 1/2            | 17         | N-80  |

**B. FLOAT EQUIPMENT:**

1. SURFACE CASING: 10 3/4" notched regular pattern guide shoe. Run (1) standard centralizer on each of the bottom (4) joints of Surface Casing.
2. INTERMEDIATE CASING: 7 5/8" cement nose guide shoe with a self-fill insert float. Place float collar one joint above the shoe. Install (1) Turbulent centralizer on each of the bottom (3) joints and one standard centralizer every (3) joints to 2,500 ft. Run (1) Turbulent centralizer at 2,700 ft., 2,500 ft., 2,300ft., 2,000ft., 1,500 ft., and 1,000 ft. (NTL-FRA 90-1).
3. PRODUCTION LINER / CASING: 5-1/2" whirler type cement nose guide shoe with a latch collar on top of 20' bottom joint. Place marker joint above 5,400'. Place centralizers as needed across selected production intervals.

**C. CEMENTING:**

*(Note: Volumes may be adjusted onsite due to actual conditions)*

1. SURFACE: Slurry: 255sx (356 cu.ft.) of "Type III" + 2% CaCl<sub>2</sub> + 1/4 # of cello-flake/sk (Yield = 1.39 cu.ft./sk, Weight = 14.5 #/gal.). The 100% excess should circulate cement to the surface. WOC 12 hours. Test csg to 1500psi.
2. INTERMEDIATE: Lead - 735 sx (1,534) cu.ft.) of "Premium Light with 8% gel and 1/4# cello-flake/sk (Yield = 2.09 cu.ft./sk, Weight = 12.1 #/gal.). Tail - 100 sx (139cu.ft.) of "Type III" with 1/4# cello-flake/sk, (Yield = 1.4 cu.ft./sk, Weight = 14.5#/gal.). Use **100% excess in Lead Slurry** to circulate to surface. **No excess in Tail Slurry**. Total volume = 1,673 cu.ft. Bump Plug to 1,500 psi. Notify engineering if cement is not circulated to surface.
3. PRODUCTION CASING: 10 bbl Gelled Water space. Cement: 210 sx (<sup>452</sup>~~441~~ ft<sup>3</sup>) of Premium Light HS + 1% FL-52 + .2% CD-32, 0.1% R-3, 3 #/sk CSE, 1/4 #/sk cello flake and 4% Phenoseal. (Yield = 2.15 ft<sup>3</sup>/sk, Weight = 12.3 #/gal.). Displace cement at a minimum of 8 BPM. The 20% excess in slurry should cover 100 ft into intermediate casing. Total volume ~~441~~ <sup>452</sup> ft<sup>3</sup>. WOC 12 hours

**IV. IV COMPLETION****A. CBL**

1. Run Cement Bond Log across all intervals to be perforated and find Top of Cement behind all casing strings if cement not circulated to surface..

**B. PRESSURE TEST**

1. Pressure test 5-1/2" casing to 6000 psi max, hold at 1500 psi for 30 minutes.

**C. STIMULATION**

1. Stimulate Dakota with approximately 10,000# of LiteProp 108™ sand in slick water..
2. Isolate Dakota with a RBP.
3. Stimulate Point Lookout with approximately 9300# of 14/30 LiteProp™ in slick water.
4. Isolate Point Lookout with a RBP.
5. Perforate the Menefee/Cliff House as determined from the open hole logs.
6. Stimulate with approximately 9300# of 14/30 LiteProp™ in slick water.
7. Test each zone before removing bridge plugs.

**D. RUNNING TUBING**

1. Dakota: Run 2-1/16", 3.25#, J-55, IJ tubing with 1/2 mule shoe on bottom , SN with pump-out plug on top of adeem joint and 5 Seal Units. Land tubing approximately 100' below top Dakota perf.
2. Mesa Verde: Run 2-1/16", 2.9#, J-55, EUE tubing with a SN (1.91" ID) on top of bottom joint. Land tubing approximately 25' above the bottom Point Lookout perforations.

150 Gary Sizemore  
Sr. Drilling Engineer  
*Larry Huggins*



**Weatherford**<sup>®</sup>

## **Drilling Services**

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## **PROPOSAL (PLAN 2)**

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**WILLIAMS PRODUCTION COMPANY**

**ROSA UNIT 187 C**

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Prepared by: Jose A Perez

Submitted: 08/21/07

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**Weatherford Drilling Services**

11943 FM 529  
Houston, TX 77041 USA  
+1.713.896.8194 Main  
+1.713.896.0498 Fax  
[www.weatherford.com](http://www.weatherford.com)

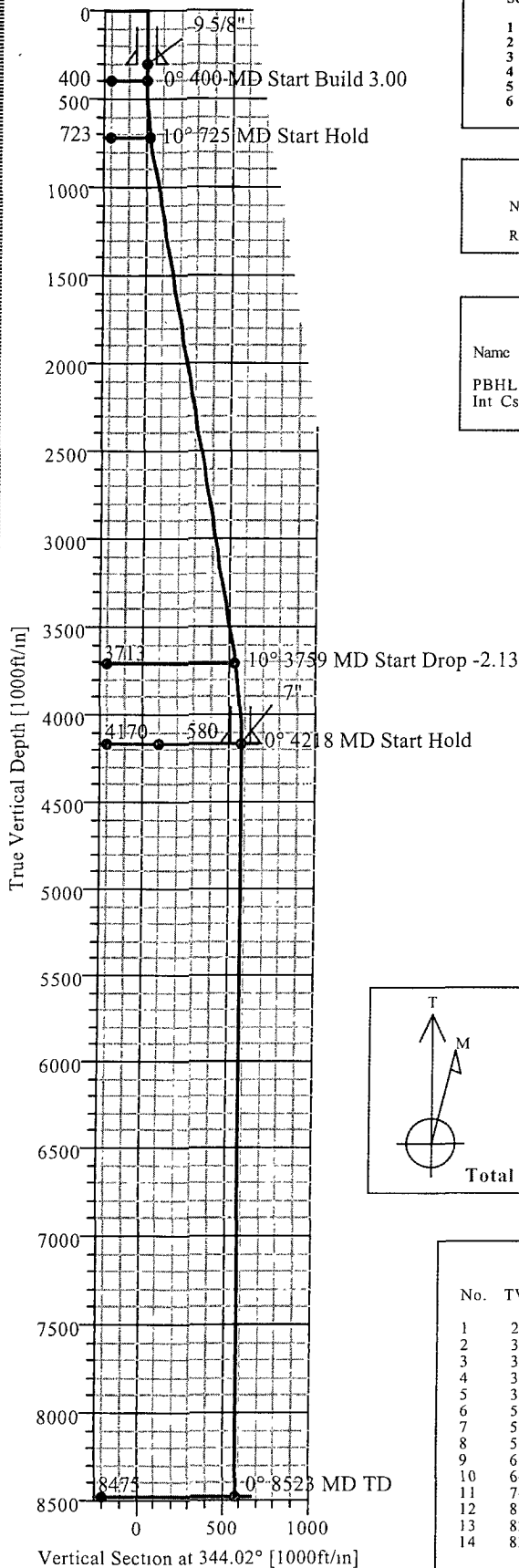


Rosa Unit 187 C  
Section 21 T 31N R 5W  
1090' FSL & 1145' FWL  
Rio Arriba County, NM  
Plan 2



Weatherford

KB ELEVATION: 6815'  
GR ELEVATION: 6801'



#### SECTION DETAILS

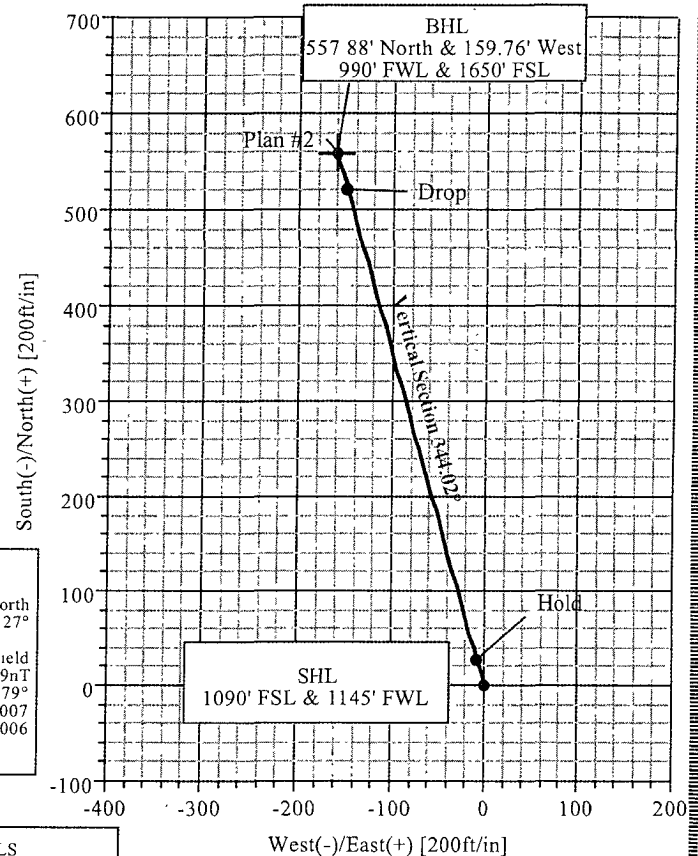
| Sec | MD      | Inc  | Azi    | TVD     | +N/-S  | +E/-W   | DLeg | TFace  | VSec   | Target       |
|-----|---------|------|--------|---------|--------|---------|------|--------|--------|--------------|
| 1   | 0.00    | 0.00 | 344.02 | 0.00    | 0.00   | 0.00    | 0.00 | 0.00   | 0.00   |              |
| 2   | 400.00  | 0.00 | 344.02 | 400.00  | 0.00   | 0.00    | 0.00 | 0.00   | 0.00   |              |
| 3   | 725.00  | 9.75 | 344.02 | 723.43  | 26.52  | -7.59   | 3.00 | 344.02 | 27.59  |              |
| 4   | 3758.79 | 9.75 | 344.02 | 3713.40 | 520.44 | -149.04 | 0.00 | 0.00   | 541.36 |              |
| 5   | 4217.60 | 0.00 | 344.02 | 4170.00 | 557.88 | -159.76 | 2.13 | 180.00 | 580.30 | Int. Cs. Pt. |
| 6   | 8522.60 | 0.00 | 344.02 | 8475.00 | 557.88 | -159.76 | 0.00 | 344.02 | 580.30 | PBHL         |

#### WELL DETAILS

| Name           | +N/-S | +E/-W | Northing   | Easting    | Latitude      | Longitude      | Slot |
|----------------|-------|-------|------------|------------|---------------|----------------|------|
| Rosa Unit 187C | 0 00  | 0 00  | 2140269 14 | 2857795 65 | 36°52'50 916N | 107°22'21 972W | N/A  |

#### TARGET DETAILS

| Name      | TVD     | +N/-S  | +E/-W   | Latitude      | Longitude      | Shape              |
|-----------|---------|--------|---------|---------------|----------------|--------------------|
| PBHL      | 8475 00 | 557 88 | -159 76 | 36°52'56 432N | 107°22'23 938W | Circle (Radius 50) |
| Int Cs Pt | 4170 00 | 557 88 | -159 76 | 36°52'56 432N | 107°22'23 938W | Point              |



Azimuths to True North  
Magnetic North 10 27°

Magnetic Field  
Strength 51319nT  
Dip Angle 63 79°  
Date 8/21/2007  
Model: bggm2006

Total Correction 10.27°

#### FORMATION TOP DETAILS

| No. | TVDPath | MDPath  | Formation         |
|-----|---------|---------|-------------------|
| 1   | 2960.00 | 2994.34 | Ojo Alamo         |
| 2   | 3060.00 | 3095.81 | Kirtland          |
| 3   | 3485.00 | 3527.04 | Fruitland         |
| 4   | 3695.00 | 3740.12 | Pictured Cliffs   |
| 5   | 3995.00 | 4042.47 | Lewis             |
| 6   | 5570.00 | 5617.60 | Cliff House Trans |
| 7   | 5885.00 | 5932.60 | Cliff House       |
| 8   | 5930.00 | 5977.60 | Menefee           |
| 9   | 6135.00 | 6182.60 | Point Lookout     |
| 10  | 6445.00 | 6492.60 | Mancos            |
| 11  | 7445.00 | 7492.60 | Gallup            |
| 12  | 8165.00 | 8212.60 | Greenhorn         |
| 13  | 8220.00 | 8267.60 | Graneros          |
| 14  | 8350.00 | 8397.60 | Dakota            |

Plan Plan #2 (Rosa Unit 187 C)

Created By Jose Perez Date 08/21/07  
Weatherford Drilling Services  
11943 FM 529  
Houston TX USA 77041  
(713) 896 8194 MAIN  
(713) 896 0498 FAX



# Weatherford Drilling Services

## Planning Report

|                                          |                                                                    |                       |                |
|------------------------------------------|--------------------------------------------------------------------|-----------------------|----------------|
| <b>Company:</b> WILLIAMS PRODUCTION      | <b>Date:</b> 8/21/2007                                             | <b>Time:</b> 11:26:29 | <b>Page:</b> 1 |
| <b>Field:</b> Rio Arriba County (NAD 83) | <b>Co-ordinate(NE) Reference:</b> Site: Rosa Unit 187C, True North |                       |                |
| <b>Site:</b> Rosa Unit 187C              | <b>Vertical (TVD) Reference:</b> SITE 6815.0                       |                       |                |
| <b>Well:</b> Rosa Unit 187C              | <b>Section (VS) Reference:</b> Well (0.00N:0.00E:344.02Azi)        |                       |                |
| <b>Wellpath:</b> 1                       | <b>Plan:</b> Plan #2                                               |                       |                |

**Field:** Rio Arriba County (NAD 83)

**Map System:** US State Plane Coordinate System 1983  
**Geo Datum:** GRS 1980  
**Sys Datum:** Mean Sea Level

**Map Zone:** New Mexico, Western Zone  
**Coordinate System:** Site Centre  
**Geomagnetic Model:** bggm2006

**Site:** Rosa Unit 187C  
 Well Pad 21  
 Rio Arriba County, NM

|                                      |                                |                                   |
|--------------------------------------|--------------------------------|-----------------------------------|
| <b>Site Position:</b>                | <b>Northing:</b> 2140269.14 ft | <b>Latitude:</b> 36 52 50.916 N   |
| <b>From:</b> Geographic              | <b>Easting:</b> 2857795.65 ft  | <b>Longitude:</b> 107 22 21.972 W |
| <b>Position Uncertainty:</b> 0.00 ft |                                | <b>North Reference:</b> True      |
| <b>Ground Level:</b> 6801.00 ft      |                                | <b>Grid Convergence:</b> 0.28 deg |

**Well:** Rosa Unit 187C  
 1090' FSL & 1145' FWL

**Slot Name:**

|                                      |                                |                                   |
|--------------------------------------|--------------------------------|-----------------------------------|
| <b>Well Position:</b> +N/-S 0.00 ft  | <b>Northing:</b> 2140269.14 ft | <b>Latitude:</b> 36 52 50.916 N   |
| +E/-W 0.00 ft                        | <b>Easting:</b> 2857795.65 ft  | <b>Longitude:</b> 107 22 21.972 W |
| <b>Position Uncertainty:</b> 0.00 ft |                                |                                   |

**Wellpath:** 1

Section 21 T 31N R 5W

**Current Datum:** SITE **Height** 6815.00 ft

**Magnetic Data:** 8/21/2007

**Field Strength:** 51319 nT

**Vertical Section:** Depth From (TVD)  
ft

+N/-S  
ft

**Drilled From:** Surface  
**Tie-on Depth:** 0.00 ft  
**Above System Datum:** Mean Sea Level  
**Declination:** 10.27 deg  
**Mag Dip Angle:** 63.79 deg  
**+E/-W**  
ft  
**Direction**  
deg

0 00

0.00

0.00

344 02

**Plan:** Plan #2

**Date Composed:** 10/16/2006

**Principal:** Yes

**Version:** 1  
**Tied-to:** From Surface

### Plan Section Information

| MD<br>ft | Incl<br>deg | Azim<br>deg | TVD<br>ft | +N/-S<br>ft | +E/-W<br>ft | DLS<br>deg/100ft | Build<br>deg/100ft | Turn<br>deg/100ft | TFO<br>deg | Target      |
|----------|-------------|-------------|-----------|-------------|-------------|------------------|--------------------|-------------------|------------|-------------|
| 0.00     | 0.00        | 344.02      | 0.00      | 0.00        | 0.00        | 0.00             | 0.00               | 0.00              | 0.00       |             |
| 400.00   | 0.00        | 344.02      | 400.00    | 0.00        | 0.00        | 0.00             | 0.00               | 0.00              | 0.00       |             |
| 725.00   | 9.75        | 344.02      | 723.43    | 26.52       | -7.59       | 3.00             | 3.00               | 0.00              | 344.02     |             |
| 3758.79  | 9.75        | 344.02      | 3713.40   | 520.44      | -149.04     | 0.00             | 0.00               | 0.00              | 0.00       |             |
| 4217.60  | 0.00        | 344.02      | 4170.00   | 557.88      | -159.76     | 2.13             | -2.13              | 0.00              | 180.00     | Int. Cs Pt. |
| 8522.60  | 0.00        | 344.02      | 8475.00   | 557.88      | -159.76     | 0.00             | 0.00               | 0.00              | 344.02     | PBHL        |

### Section 1 : Start Hold

| MD<br>ft | Incl<br>deg | Azim<br>deg | TVD<br>ft | +N/-S<br>ft | +E/-W<br>ft | VS<br>ft | DLS<br>deg/100ft | Build<br>deg/100ft | Turn<br>deg/100ft | TFO<br>deg |
|----------|-------------|-------------|-----------|-------------|-------------|----------|------------------|--------------------|-------------------|------------|
| 0.00     | 0.00        | 344.02      | 0.00      | 0.00        | 0.00        | 0.00     | 0.00             | 0.00               | 0.00              | 0.00       |
| 400.00   | 0.00        | 344.02      | 400.00    | 0.00        | 0.00        | 0.00     | 0.00             | 0.00               | 0.00              | 344.02     |

### Section 2 : Start Build 3.00

| MD<br>ft | Incl<br>deg | Azim<br>deg | TVD<br>ft | +N/-S<br>ft | +E/-W<br>ft | VS<br>ft | DLS<br>deg/100ft | Build<br>deg/100ft | Turn<br>deg/100ft | TFO<br>deg |
|----------|-------------|-------------|-----------|-------------|-------------|----------|------------------|--------------------|-------------------|------------|
| 500.00   | 3.00        | 344.02      | 499.95    | 2.52        | -0.72       | 2.62     | 3.00             | 3.00               | 0.00              | 0.00       |
| 600.00   | 6.00        | 344.02      | 599.63    | 10.06       | -2.88       | 10.46    | 3.00             | 3.00               | 0.00              | 0.00       |
| 700.00   | 9.00        | 344.02      | 698.77    | 22.60       | -6.47       | 23.51    | 3.00             | 3.00               | 0.00              | 0.00       |
| 725.00   | 9.75        | 344.02      | 723.43    | 26.52       | -7.59       | 27.59    | 3.00             | 3.00               | 0.00              | 0.00       |

### Section 3 : Start Hold

| MD<br>ft | Incl<br>deg | Azim<br>deg | TVD<br>ft | +N/-S<br>ft | +E/-W<br>ft | VS<br>ft | DLS<br>deg/100ft | Build<br>deg/100ft | Turn<br>deg/100ft | TFO<br>deg |
|----------|-------------|-------------|-----------|-------------|-------------|----------|------------------|--------------------|-------------------|------------|
| 800.00   | 9.75        | 344.02      | 797.35    | 38.73       | -11.09      | 40.29    | 0.00             | 0.00               | 0.00              | 180.00     |
| 900.00   | 9.75        | 344.02      | 895.91    | 55.01       | -15.75      | 57.22    | 0.00             | 0.00               | 0.00              | 180.00     |



# Weatherford Drilling Services

## Planning Report

Company: WILLIAMS PRODUCTION  
Field: Rio Arriba County (NAD 83)  
Site: Rosa Unit 187C  
Well: Rosa Unit 187C  
Wellpath: 1

Date: 8/21/2007 Time: 11:26:29 Page: 2  
Co-ordinate(NE) Reference: Site: Rosa Unit 187C, True North  
Vertical (TVD) Reference: SITE 6815.0  
Section (VS) Reference: Well: (0.00N,0.00E,344.02Azi)  
Plan: Plan #2

### Section 3 : Start Hold

| MD<br>ft | Incl<br>deg | Azim<br>deg | TVD<br>ft | +N/-S<br>ft | +E/-W<br>ft | VS<br>ft | DLS<br>deg/100ft | Build<br>deg/100ft | Turn<br>deg/100ft | TFO<br>deg |
|----------|-------------|-------------|-----------|-------------|-------------|----------|------------------|--------------------|-------------------|------------|
| 1000.00  | 9.75        | 344.02      | 994.46    | 71.29       | -20.42      | 74.16    | 0.00             | 0.00               | 0.00              | 180.00     |
| 1100.00  | 9.75        | 344.02      | 1093.02   | 87.57       | -25.08      | 91.09    | 0.00             | 0.00               | 0.00              | 180.00     |
| 1200.00  | 9.75        | 344.02      | 1191.57   | 103.85      | -29.74      | 108.03   | 0.00             | 0.00               | 0.00              | 180.00     |
| 1300.00  | 9.75        | 344.02      | 1290.13   | 120.13      | -34.40      | 124.96   | 0.00             | 0.00               | 0.00              | 180.00     |
| 1400.00  | 9.75        | 344.02      | 1388.68   | 136.41      | -39.06      | 141.90   | 0.00             | 0.00               | 0.00              | 180.00     |
| 1500.00  | 9.75        | 344.02      | 1487.24   | 152.69      | -43.73      | 158.83   | 0.00             | 0.00               | 0.00              | 180.00     |
| 1600.00  | 9.75        | 344.02      | 1585.80   | 168.97      | -48.39      | 175.77   | 0.00             | 0.00               | 0.00              | 180.00     |
| 1700.00  | 9.75        | 344.02      | 1684.35   | 185.26      | -53.05      | 192.70   | 0.00             | 0.00               | 0.00              | 180.00     |
| 1800.00  | 9.75        | 344.02      | 1782.91   | 201.54      | -57.71      | 209.64   | 0.00             | 0.00               | 0.00              | 180.00     |
| 1900.00  | 9.75        | 344.02      | 1881.46   | 217.82      | -62.38      | 226.57   | 0.00             | 0.00               | 0.00              | 180.00     |
| 2000.00  | 9.75        | 344.02      | 1980.02   | 234.10      | -67.04      | 243.51   | 0.00             | 0.00               | 0.00              | 180.00     |
| 2100.00  | 9.75        | 344.02      | 2078.57   | 250.38      | -71.70      | 260.44   | 0.00             | 0.00               | 0.00              | 180.00     |
| 2200.00  | 9.75        | 344.02      | 2177.13   | 266.66      | -76.36      | 277.38   | 0.00             | 0.00               | 0.00              | 180.00     |
| 2300.00  | 9.75        | 344.02      | 2275.68   | 282.94      | -81.02      | 294.31   | 0.00             | 0.00               | 0.00              | 180.00     |
| 2400.00  | 9.75        | 344.02      | 2374.24   | 299.22      | -85.69      | 311.25   | 0.00             | 0.00               | 0.00              | 180.00     |
| 2500.00  | 9.75        | 344.02      | 2472.80   | 315.50      | -90.35      | 328.18   | 0.00             | 0.00               | 0.00              | 180.00     |
| 2600.00  | 9.75        | 344.02      | 2571.35   | 331.78      | -95.01      | 345.12   | 0.00             | 0.00               | 0.00              | 180.00     |
| 2700.00  | 9.75        | 344.02      | 2669.91   | 348.06      | -99.67      | 362.05   | 0.00             | 0.00               | 0.00              | 180.00     |
| 2800.00  | 9.75        | 344.02      | 2768.46   | 364.34      | -104.34     | 378.99   | 0.00             | 0.00               | 0.00              | 180.00     |
| 2900.00  | 9.75        | 344.02      | 2867.02   | 380.62      | -109.00     | 395.92   | 0.00             | 0.00               | 0.00              | 180.00     |
| 2994.34  | 9.75        | 344.02      | 2960.00   | 395.98      | -113.40     | 411.90   | 0.00             | 0.00               | 0.00              | 180.00     |
| 3000.00  | 9.75        | 344.02      | 2965.57   | 396.90      | -113.66     | 412.86   | 0.00             | 0.00               | 0.00              | 180.00     |
| 3095.81  | 9.75        | 344.02      | 3060.00   | 412.50      | -118.13     | 429.08   | 0.00             | 0.00               | 0.00              | 180.00     |
| 3100.00  | 9.75        | 344.02      | 3064.13   | 413.18      | -118.32     | 429.79   | 0.00             | 0.00               | 0.00              | 180.00     |
| 3200.00  | 9.75        | 344.02      | 3162.68   | 429.46      | -122.98     | 446.73   | 0.00             | 0.00               | 0.00              | 180.00     |
| 3300.00  | 9.75        | 344.02      | 3261.24   | 445.74      | -127.65     | 463.66   | 0.00             | 0.00               | 0.00              | 180.00     |
| 3400.00  | 9.75        | 344.02      | 3359.80   | 462.02      | -132.31     | 480.60   | 0.00             | 0.00               | 0.00              | 180.00     |
| 3500.00  | 9.75        | 344.02      | 3458.35   | 478.31      | -136.97     | 497.53   | 0.00             | 0.00               | 0.00              | 180.00     |
| 3527.04  | 9.75        | 344.02      | 3485.00   | 482.71      | -138.23     | 502.11   | 0.00             | 0.00               | 0.00              | 180.00     |
| 3600.00  | 9.75        | 344.02      | 3556.91   | 494.59      | -141.63     | 514.47   | 0.00             | 0.00               | 0.00              | 180.00     |
| 3700.00  | 9.75        | 344.02      | 3655.46   | 510.87      | -146.30     | 531.40   | 0.00             | 0.00               | 0.00              | 180.00     |
| 3740.12  | 9.75        | 344.02      | 3695.00   | 517.40      | -148.17     | 538.19   | 0.00             | 0.00               | 0.00              | 180.00     |
| 3758.79  | 9.75        | 344.02      | 3713.40   | 520.44      | -149.04     | 541.36   | 0.00             | 0.00               | 0.00              | 180.00     |

### Section 4 : Start Drop -2.13

| MD<br>ft | Incl<br>deg | Azim<br>deg | TVD<br>ft | +N/-S<br>ft | +E/-W<br>ft | VS<br>ft | DLS<br>deg/100ft | Build<br>deg/100ft | Turn<br>deg/100ft | TFO<br>deg |
|----------|-------------|-------------|-----------|-------------|-------------|----------|------------------|--------------------|-------------------|------------|
| 3800.00  | 8.87        | 344.02      | 3754.07   | 526.85      | -150.87     | 548.02   | 2.13             | -2.13              | 0.00              | 180.00     |
| 3900.00  | 6.75        | 344.02      | 3853.14   | 539.91      | -154.61     | 561.62   | 2.13             | -2.13              | 0.00              | 180.00     |
| 4000.00  | 4.62        | 344.02      | 3952.64   | 549.44      | -157.34     | 571.52   | 2.13             | -2.13              | 0.00              | 180.00     |
| 4042.47  | 3.72        | 344.02      | 3995.00   | 552.41      | -158.19     | 574.61   | 2.13             | -2.13              | 0.00              | -180.00    |
| 4100.00  | 2.50        | 344.02      | 4052.44   | 555.41      | -159.05     | 577.74   | 2.13             | -2.13              | 0.00              | 180.00     |
| 4200.00  | 0.37        | 344.02      | 4152.40   | 557.82      | -159.74     | 580.24   | 2.13             | -2.13              | 0.00              | 180.00     |
| 4217.60  | 0.00        | 344.02      | 4170.00   | 557.88      | -159.76     | 580.30   | 2.13             | -2.13              | 0.00              | -180.00    |

### Section 5 : Start Hold

| MD<br>ft | Incl<br>deg | Azim<br>deg | TVD<br>ft | +N/-S<br>ft | +E/-W<br>ft | VS<br>ft | DLS<br>deg/100ft | Build<br>deg/100ft | Turn<br>deg/100ft | TFO<br>deg |
|----------|-------------|-------------|-----------|-------------|-------------|----------|------------------|--------------------|-------------------|------------|
| 4300.00  | 0.00        | 344.02      | 4252.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 4400.00  | 0.00        | 344.02      | 4352.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 4500.00  | 0.00        | 344.02      | 4452.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 4600.00  | 0.00        | 344.02      | 4552.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 4700.00  | 0.00        | 344.02      | 4652.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 4800.00  | 0.00        | 344.02      | 4752.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 4900.00  | 0.00        | 344.02      | 4852.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 5000.00  | 0.00        | 344.02      | 4952.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 5100.00  | 0.00        | 344.02      | 5052.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 5200.00  | 0.00        | 344.02      | 5152.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 5300.00  | 0.00        | 344.02      | 5252.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 5400.00  | 0.00        | 344.02      | 5352.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 5500.00  | 0.00        | 344.02      | 5452.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 5600.00  | 0.00        | 344.02      | 5552.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |



# Weatherford Drilling Services

## Planning Report

|           |                            |                            |                                  |       |          |       |   |
|-----------|----------------------------|----------------------------|----------------------------------|-------|----------|-------|---|
| Company:  | WILLIAMS PRODUCTION        | Date:                      | 8/21/2007                        | Time: | 11:26:29 | Page: | 3 |
| Field:    | Rio Arriba County (NAD 83) | Co-ordinate(NE) Reference: | Site: Rosa Unit 187C, True North |       |          |       |   |
| Site:     | Rosa Unit 187C             | Vertical (TVD) Reference:  | SITE 6815.0                      |       |          |       |   |
| Well:     | Rosa Unit 187C             | Section (VS) Reference:    | Well (0.00N,0.00E,344.02Azi)     |       |          |       |   |
| Wellpath: | 1                          | Plan:                      | Plan #2                          |       |          |       |   |

### Section 5 : Start Hold

| MD<br>ft | Incl<br>deg | Azim<br>deg | TVD<br>ft | +N/-S<br>ft | +E/-W<br>ft | VS<br>ft | DLS<br>deg/100ft | Build<br>deg/100ft | Turn<br>deg/100ft | TFO<br>deg |
|----------|-------------|-------------|-----------|-------------|-------------|----------|------------------|--------------------|-------------------|------------|
| 5617.60  | 0.00        | 344.02      | 5570.00   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 5700.00  | 0.00        | 344.02      | 5652.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 5800.00  | 0.00        | 344.02      | 5752.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 5900.00  | 0.00        | 344.02      | 5852.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 5932.60  | 0.00        | 344.02      | 5885.00   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 5977.60  | 0.00        | 344.02      | 5930.00   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 6000.00  | 0.00        | 344.02      | 5952.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 6100.00  | 0.00        | 344.02      | 6052.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 6182.60  | 0.00        | 344.02      | 6135.00   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 6200.00  | 0.00        | 344.02      | 6152.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 6300.00  | 0.00        | 344.02      | 6252.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 6400.00  | 0.00        | 344.02      | 6352.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 6492.60  | 0.00        | 344.02      | 6445.00   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 6500.00  | 0.00        | 344.02      | 6452.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 6600.00  | 0.00        | 344.02      | 6552.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 6700.00  | 0.00        | 344.02      | 6652.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 6800.00  | 0.00        | 344.02      | 6752.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 6900.00  | 0.00        | 344.02      | 6852.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 7000.00  | 0.00        | 344.02      | 6952.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 7100.00  | 0.00        | 344.02      | 7052.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 7200.00  | 0.00        | 344.02      | 7152.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 7300.00  | 0.00        | 344.02      | 7252.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 7400.00  | 0.00        | 344.02      | 7352.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 7492.60  | 0.00        | 344.02      | 7445.00   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 7500.00  | 0.00        | 344.02      | 7452.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 7600.00  | 0.00        | 344.02      | 7552.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 7700.00  | 0.00        | 344.02      | 7652.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 7800.00  | 0.00        | 344.02      | 7752.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 7900.00  | 0.00        | 344.02      | 7852.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 8000.00  | 0.00        | 344.02      | 7952.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 8100.00  | 0.00        | 344.02      | 8052.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 8200.00  | 0.00        | 344.02      | 8152.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 8212.60  | 0.00        | 344.02      | 8165.00   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 8267.60  | 0.00        | 344.02      | 8220.00   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 8300.00  | 0.00        | 344.02      | 8252.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 8397.60  | 0.00        | 344.02      | 8350.00   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 8400.00  | 0.00        | 344.02      | 8352.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 8500.00  | 0.00        | 344.02      | 8452.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |
| 8522.60  | 0.00        | 344.02      | 8475.00   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | 344.02     |

### Survey

| MD<br>ft | Incl<br>deg | Azim<br>deg | TVD<br>ft | +N/-S<br>ft | +E/-W<br>ft | VS<br>ft | DLS<br>deg/100ft | Build<br>deg/100ft | Turn<br>deg/100ft | Tool/Comment |
|----------|-------------|-------------|-----------|-------------|-------------|----------|------------------|--------------------|-------------------|--------------|
| 400.00   | 0.00        | 344.02      | 400.00    | 0.00        | 0.00        | 0.00     | 0.00             | 0.00               | 0.00              | KOP          |
| 500.00   | 3.00        | 344.02      | 499.95    | 2.52        | -0.72       | 2.62     | 3.00             | 3.00               | 0.00              |              |
| 600.00   | 6.00        | 344.02      | 599.63    | 10.06       | -2.88       | 10.46    | 3.00             | 3.00               | 0.00              |              |
| 700.00   | 9.00        | 344.02      | 698.77    | 22.60       | -6.47       | 23.51    | 3.00             | 3.00               | 0.00              |              |
| 725.00   | 9.75        | 344.02      | 723.43    | 26.52       | -7.59       | 27.59    | 3.00             | 3.00               | 0.00              | Hold         |
| 800.00   | 9.75        | 344.02      | 797.35    | 38.73       | -11.09      | 40.29    | 0.00             | 0.00               | 0.00              |              |
| 900.00   | 9.75        | 344.02      | 895.91    | 55.01       | -15.75      | 57.22    | 0.00             | 0.00               | 0.00              |              |
| 1000.00  | 9.75        | 344.02      | 994.46    | 71.29       | -20.42      | 74.16    | 0.00             | 0.00               | 0.00              |              |
| 1100.00  | 9.75        | 344.02      | 1093.02   | 87.57       | -25.08      | 91.09    | 0.00             | 0.00               | 0.00              |              |
| 1200.00  | 9.75        | 344.02      | 1191.57   | 103.85      | -29.74      | 108.03   | 0.00             | 0.00               | 0.00              |              |
| 1300.00  | 9.75        | 344.02      | 1290.13   | 120.13      | -34.40      | 124.96   | 0.00             | 0.00               | 0.00              |              |
| 1400.00  | 9.75        | 344.02      | 1388.68   | 136.41      | -39.06      | 141.90   | 0.00             | 0.00               | 0.00              |              |
| 1500.00  | 9.75        | 344.02      | 1487.24   | 152.69      | -43.73      | 158.83   | 0.00             | 0.00               | 0.00              |              |
| 1600.00  | 9.75        | 344.02      | 1585.80   | 168.97      | -48.39      | 175.77   | 0.00             | 0.00               | 0.00              |              |
| 1700.00  | 9.75        | 344.02      | 1684.35   | 185.26      | -53.05      | 192.70   | 0.00             | 0.00               | 0.00              |              |
| 1800.00  | 9.75        | 344.02      | 1782.91   | 201.54      | -57.71      | 209.64   | 0.00             | 0.00               | 0.00              |              |
| 1900.00  | 9.75        | 344.02      | 1881.46   | 217.82      | -62.38      | 226.57   | 0.00             | 0.00               | 0.00              |              |



# Weatherford Drilling Services

## Planning Report

|           |                            |                            |                                  |       |          |       |   |
|-----------|----------------------------|----------------------------|----------------------------------|-------|----------|-------|---|
| Company:  | WILLIAMS PRODUCTION        | Date:                      | 8/21/2007                        | Time: | 11:26:29 | Page: | 4 |
| Field:    | Rio Arriba County (NAD 83) | Co-ordinate(NE) Reference: | Site: Rosa Unit 187C, True North |       |          |       |   |
| Site:     | Rosa Unit 187C             | Vertical (TVD) Reference:  | SITE 6815.0                      |       |          |       |   |
| Well:     | Rosa Unit 187C             | Section (VS) Reference:    | Well (0.00N,0.00E,344.02Azi)     |       |          |       |   |
| Wellpath: | 1                          | Plan:                      | Plan #2                          |       |          |       |   |

### Survey

| MD<br>ft | Incl<br>deg | Azim<br>deg | TVD<br>ft | +N-S<br>ft | +E-W<br>ft | VS<br>ft | DLS<br>deg/100ft | Build<br>deg/100ft | Turn<br>deg/100ft | Tool/Comment      |
|----------|-------------|-------------|-----------|------------|------------|----------|------------------|--------------------|-------------------|-------------------|
| 2000.00  | 9.75        | 344.02      | 1980.02   | 234.10     | -67.04     | 243.51   | 0.00             | 0.00               | 0.00              |                   |
| 2100.00  | 9.75        | 344.02      | 2078.57   | 250.38     | -71.70     | 260.44   | 0.00             | 0.00               | 0.00              |                   |
| 2200.00  | 9.75        | 344.02      | 2177.13   | 266.66     | -76.36     | 277.38   | 0.00             | 0.00               | 0.00              |                   |
| 2300.00  | 9.75        | 344.02      | 2275.68   | 282.94     | -81.02     | 294.31   | 0.00             | 0.00               | 0.00              |                   |
| 2400.00  | 9.75        | 344.02      | 2374.24   | 299.22     | -85.69     | 311.25   | 0.00             | 0.00               | 0.00              |                   |
| 2500.00  | 9.75        | 344.02      | 2472.80   | 315.50     | -90.35     | 328.18   | 0.00             | 0.00               | 0.00              |                   |
| 2600.00  | 9.75        | 344.02      | 2571.35   | 331.78     | -95.01     | 345.12   | 0.00             | 0.00               | 0.00              |                   |
| 2700.00  | 9.75        | 344.02      | 2669.91   | 348.06     | -99.67     | 362.05   | 0.00             | 0.00               | 0.00              |                   |
| 2800.00  | 9.75        | 344.02      | 2768.46   | 364.34     | -104.34    | 378.99   | 0.00             | 0.00               | 0.00              |                   |
| 2900.00  | 9.75        | 344.02      | 2867.02   | 380.62     | -109.00    | 395.92   | 0.00             | 0.00               | 0.00              |                   |
| 2994.34  | 9.75        | 344.02      | 2960.00   | 395.98     | -113.40    | 411.90   | 0.00             | 0.00               | 0.00              | Ojo Alamo         |
| 3000.00  | 9.75        | 344.02      | 2965.57   | 396.90     | -113.66    | 412.86   | 0.00             | 0.00               | 0.00              |                   |
| 3095.81  | 9.75        | 344.02      | 3060.00   | 412.50     | -118.13    | 429.08   | 0.00             | 0.00               | 0.00              | Kirtland          |
| 3100.00  | 9.75        | 344.02      | 3064.13   | 413.18     | -118.32    | 429.79   | 0.00             | 0.00               | 0.00              |                   |
| 3200.00  | 9.75        | 344.02      | 3162.68   | 429.46     | -122.98    | 446.73   | 0.00             | 0.00               | 0.00              |                   |
| 3300.00  | 9.75        | 344.02      | 3261.24   | 445.74     | -127.65    | 463.66   | 0.00             | 0.00               | 0.00              |                   |
| 3400.00  | 9.75        | 344.02      | 3359.80   | 462.02     | -132.31    | 480.60   | 0.00             | 0.00               | 0.00              |                   |
| 3500.00  | 9.75        | 344.02      | 3458.35   | 478.31     | -136.97    | 497.53   | 0.00             | 0.00               | 0.00              |                   |
| 3527.04  | 9.75        | 344.02      | 3485.00   | 482.71     | -138.23    | 502.11   | 0.00             | 0.00               | 0.00              | Fruitland         |
| 3600.00  | 9.75        | 344.02      | 3556.91   | 494.59     | -141.63    | 514.47   | 0.00             | 0.00               | 0.00              |                   |
| 3700.00  | 9.75        | 344.02      | 3655.46   | 510.87     | -146.30    | 531.40   | 0.00             | 0.00               | 0.00              |                   |
| 3740.12  | 9.75        | 344.02      | 3695.00   | 517.40     | -148.17    | 538.19   | 0.00             | 0.00               | 0.00              | Pictured Cliffs   |
| 3758.79  | 9.75        | 344.02      | 3713.40   | 520.44     | -149.04    | 541.36   | 0.00             | 0.00               | 0.00              | Drop              |
| 3800.00  | 8.87        | 344.02      | 3754.07   | 526.85     | -150.87    | 548.02   | 2.13             | -2.13              | 0.00              |                   |
| 3900.00  | 6.75        | 344.02      | 3853.14   | 539.91     | -154.61    | 561.62   | 2.13             | -2.13              | 0.00              |                   |
| 4000.00  | 4.62        | 344.02      | 3952.64   | 549.44     | -157.34    | 571.52   | 2.13             | -2.13              | 0.00              |                   |
| 4042.47  | 3.72        | 344.02      | 3995.00   | 552.41     | -158.19    | 574.61   | 2.13             | -2.13              | 0.00              | Lewis             |
| 4100.00  | 2.50        | 344.02      | 4052.44   | 555.41     | -159.05    | 577.74   | 2.13             | -2.13              | 0.00              |                   |
| 4200.00  | 0.37        | 344.02      | 4152.40   | 557.82     | -159.74    | 580.24   | 2.13             | -2.13              | 0.00              |                   |
| 4217.60  | 0.00        | 344.02      | 4170.00   | 557.88     | -159.76    | 580.30   | 2.13             | -2.13              | 0.00              | Int. Cs Pt        |
| 4300.00  | 0.00        | 344.02      | 4252.40   | 557.88     | -159.76    | 580.30   | 0.00             | 0.00               | 0.00              |                   |
| 4400.00  | 0.00        | 344.02      | 4352.40   | 557.88     | -159.76    | 580.30   | 0.00             | 0.00               | 0.00              |                   |
| 4500.00  | 0.00        | 344.02      | 4452.40   | 557.88     | -159.76    | 580.30   | 0.00             | 0.00               | 0.00              |                   |
| 4600.00  | 0.00        | 344.02      | 4552.40   | 557.88     | -159.76    | 580.30   | 0.00             | 0.00               | 0.00              |                   |
| 4700.00  | 0.00        | 344.02      | 4652.40   | 557.88     | -159.76    | 580.30   | 0.00             | 0.00               | 0.00              |                   |
| 4800.00  | 0.00        | 344.02      | 4752.40   | 557.88     | -159.76    | 580.30   | 0.00             | 0.00               | 0.00              |                   |
| 4900.00  | 0.00        | 344.02      | 4852.40   | 557.88     | -159.76    | 580.30   | 0.00             | 0.00               | 0.00              |                   |
| 5000.00  | 0.00        | 344.02      | 4952.40   | 557.88     | -159.76    | 580.30   | 0.00             | 0.00               | 0.00              |                   |
| 5100.00  | 0.00        | 344.02      | 5052.40   | 557.88     | -159.76    | 580.30   | 0.00             | 0.00               | 0.00              |                   |
| 5200.00  | 0.00        | 344.02      | 5152.40   | 557.88     | -159.76    | 580.30   | 0.00             | 0.00               | 0.00              |                   |
| 5300.00  | 0.00        | 344.02      | 5252.40   | 557.88     | -159.76    | 580.30   | 0.00             | 0.00               | 0.00              |                   |
| 5400.00  | 0.00        | 344.02      | 5352.40   | 557.88     | -159.76    | 580.30   | 0.00             | 0.00               | 0.00              |                   |
| 5500.00  | 0.00        | 344.02      | 5452.40   | 557.88     | -159.76    | 580.30   | 0.00             | 0.00               | 0.00              |                   |
| 5600.00  | 0.00        | 344.02      | 5552.40   | 557.88     | -159.76    | 580.30   | 0.00             | 0.00               | 0.00              |                   |
| 5617.60  | 0.00        | 344.02      | 5570.00   | 557.88     | -159.76    | 580.30   | 0.00             | 0.00               | 0.00              | Cliff House Trans |
| 5700.00  | 0.00        | 344.02      | 5652.40   | 557.88     | -159.76    | 580.30   | 0.00             | 0.00               | 0.00              |                   |
| 5800.00  | 0.00        | 344.02      | 5752.40   | 557.88     | -159.76    | 580.30   | 0.00             | 0.00               | 0.00              |                   |
| 5900.00  | 0.00        | 344.02      | 5852.40   | 557.88     | -159.76    | 580.30   | 0.00             | 0.00               | 0.00              |                   |
| 5932.60  | 0.00        | 344.02      | 5885.00   | 557.88     | -159.76    | 580.30   | 0.00             | 0.00               | 0.00              | Cliff House       |
| 5977.60  | 0.00        | 344.02      | 5930.00   | 557.88     | -159.76    | 580.30   | 0.00             | 0.00               | 0.00              | Menefee           |
| 6000.00  | 0.00        | 344.02      | 5952.40   | 557.88     | -159.76    | 580.30   | 0.00             | 0.00               | 0.00              |                   |
| 6100.00  | 0.00        | 344.02      | 6052.40   | 557.88     | -159.76    | 580.30   | 0.00             | 0.00               | 0.00              |                   |
| 6182.60  | 0.00        | 344.02      | 6135.00   | 557.88     | -159.76    | 580.30   | 0.00             | 0.00               | 0.00              | Point Lookout     |



# Weatherford Drilling Services

## Planning Report

|           |                            |                            |                              |            |          |       |   |
|-----------|----------------------------|----------------------------|------------------------------|------------|----------|-------|---|
| Company:  | WILLIAMS PRODUCTION        | Date:                      | 8/21/2007                    | Time:      | 11:26:29 | Page: | 5 |
| Field:    | Rio Arriba County (NAD:83) | Co-ordinate(NE) Reference: | Site: Rosa Unit 187C         | True North |          |       |   |
| Site:     | Rosa Unit 187C             | Vertical (TVD) Reference:  | SITE 6815.0                  |            |          |       |   |
| Well:     | Rosa Unit 187C             | Section (VS) Reference:    | Well (0.00N,0.00E,344.02Azi) |            |          |       |   |
| Wellpath: | 1                          | Plan:                      | Plan #2                      |            |          |       |   |

### Survey

| MD<br>ft | Incl<br>deg | Azim<br>deg | TVD<br>ft | +N/-S<br>ft | +E/-W<br>ft | VS<br>ft | DLS<br>deg/100ft | Build<br>deg/100ft | Turn<br>deg/100ft | Tool/Comment |
|----------|-------------|-------------|-----------|-------------|-------------|----------|------------------|--------------------|-------------------|--------------|
| 6200.00  | 0.00        | 344.02      | 6152.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              |              |
| 6300.00  | 0.00        | 344.02      | 6252.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              |              |
| 6400.00  | 0.00        | 344.02      | 6352.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              |              |
| 6492.60  | 0.00        | 344.02      | 6445.00   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | Mancos       |
| 6500.00  | 0.00        | 344.02      | 6452.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              |              |
| 6600.00  | 0.00        | 344.02      | 6552.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              |              |
| 6700.00  | 0.00        | 344.02      | 6652.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              |              |
| 6800.00  | 0.00        | 344.02      | 6752.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              |              |
| 6900.00  | 0.00        | 344.02      | 6852.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              |              |
| 7000.00  | 0.00        | 344.02      | 6952.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              |              |
| 7100.00  | 0.00        | 344.02      | 7052.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              |              |
| 7200.00  | 0.00        | 344.02      | 7152.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              |              |
| 7300.00  | 0.00        | 344.02      | 7252.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              |              |
| 7400.00  | 0.00        | 344.02      | 7352.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              |              |
| 7492.60  | 0.00        | 344.02      | 7445.00   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | Gallup       |
| 7500.00  | 0.00        | 344.02      | 7452.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              |              |
| 7600.00  | 0.00        | 344.02      | 7552.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              |              |
| 7700.00  | 0.00        | 344.02      | 7652.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              |              |
| 7800.00  | 0.00        | 344.02      | 7752.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              |              |
| 7900.00  | 0.00        | 344.02      | 7852.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              |              |
| 8000.00  | 0.00        | 344.02      | 7952.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              |              |
| 8100.00  | 0.00        | 344.02      | 8052.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              |              |
| 8200.00  | 0.00        | 344.02      | 8152.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              |              |
| 8212.60  | 0.00        | 344.02      | 8165.00   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | Greenhorn    |
| 8267.60  | 0.00        | 344.02      | 8220.00   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | Granerosos   |
| 8300.00  | 0.00        | 344.02      | 8252.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              |              |
| 8397.60  | 0.00        | 344.02      | 8350.00   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | Dakota       |
| 8400.00  | 0.00        | 344.02      | 8352.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              |              |
| 8500.00  | 0.00        | 344.02      | 8452.40   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              |              |
| 8522.60  | 0.00        | 344.02      | 8475.00   | 557.88      | -159.76     | 580.30   | 0.00             | 0.00               | 0.00              | PBHL         |

### Targets

| Name                 | Description<br>Dip | Dir. | TVD<br>ft | +N/-S<br>ft | +E/-W<br>ft | Map<br>Northing<br>ft | Map<br>Easting<br>ft | Latitude<br>Deg Min Sec | Longitude<br>Deg Min Sec |
|----------------------|--------------------|------|-----------|-------------|-------------|-----------------------|----------------------|-------------------------|--------------------------|
| Int. Cs. Pt.         |                    |      | 4170.00   | 557.88      | -159.76     | 2140826.24            | 2857633.21           | 36 52 56.432 N          | 107 22 23.938 W          |
| -Plan hit target     |                    |      |           |             |             |                       |                      |                         |                          |
| PBHL                 |                    |      | 8475.00   | 557.88      | -159.76     | 2140826.24            | 2857633.21           | 36 52 56.432 N          | 107 22 23.938 W          |
| -Circle (Radius: 50) |                    |      |           |             |             |                       |                      |                         |                          |
| -Plan hit target     |                    |      |           |             |             |                       |                      |                         |                          |

### Formations

| MD<br>ft | TVD<br>ft | Formations        | Lithology | Dip Angle<br>deg | Dip Direction<br>deg |
|----------|-----------|-------------------|-----------|------------------|----------------------|
| 2994.34  | 2960.00   | Ojo Alamo         |           | 0.00             | 0.00                 |
| 3095.81  | 3060.00   | Kirtland          |           | 0.00             | 0.00                 |
| 3527.04  | 3485.00   | Fruitland         |           | 0.00             | 0.00                 |
| 3740.12  | 3695.00   | Pictured Cliffs   |           | 0.00             | 0.00                 |
| 4042.47  | 3995.00   | Lewis             |           | 0.00             | 0.00                 |
| 5617.60  | 5570.00   | Cliff House Trans |           | 0.00             | 0.00                 |
| 5932.60  | 5885.00   | Cliff House       |           | 0.00             | 0.00                 |
| 5977.60  | 5930.00   | Menefee           |           | 0.00             | 0.00                 |
| 6182.60  | 6135.00   | Point Lookout     |           | 0.00             | 0.00                 |
| 6492.60  | 6445.00   | Mancos            |           | 0.00             | 0.00                 |
| 7492.60  | 7445.00   | Gallup            |           | 0.00             | 0.00                 |
| 8212.60  | 8165.00   | Greenhorn         |           | 0.00             | 0.00                 |



# Weatherford Drilling Services

## Planning Report

|                                          |                                                                    |                       |                |
|------------------------------------------|--------------------------------------------------------------------|-----------------------|----------------|
| <b>Company:</b> WILLIAMS PRODUCTION      | <b>Date:</b> 8/21/2007                                             | <b>Time:</b> 11:26:29 | <b>Page:</b> 6 |
| <b>Field:</b> Rio Arriba County (NAD 83) | <b>Co-ordinate(NE) Reference:</b> Site: Rosa Unit 187C; True North |                       |                |
| <b>Site:</b> Rosa Unit 187C              | <b>Vertical (TVD) Reference:</b> SITE 6815.0                       |                       |                |
| <b>Well:</b> Rosa Unit 187C              | <b>Section (VS) Reference:</b> Well (0.00N,0.00E,344.02Azi)        |                       |                |
| <b>Wellpath:</b> 1                       | <b>Plan:</b>                                                       | <b>Plan #2</b>        |                |

### Formations

| MD<br>ft | TVD<br>ft | Formations | Lithology | Dip Angle<br>deg | Dip Direction<br>deg |
|----------|-----------|------------|-----------|------------------|----------------------|
| 8267.60  | 8220.00   | Granerosos |           | 0.00             | 0.00                 |
| 8397.60  | 8350.00   | Dakota     |           | 0.00             | 0.00                 |

### Annotation

| MD<br>ft | TVD<br>ft |      |
|----------|-----------|------|
| 400.00   | 400.00    | KOP  |
| 725.00   | 723.43    | Hold |
| 3758.79  | 3713.40   | Drop |