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SEP 09 2009

Bureau of Land Management
Farmington Field Office

Form 3160-3
(September 2001)

FORM APPROVED
OMB No. 1004-0136
Expires January 31, 2004

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No: NMSF-078768

6. If Indian, Allottee or Tribe Name:

1a Type of Work: ☒ DRILL ☐ REENTER

1b Type of Well: ☐ Oil Well ☐ Gas Well ☒ Other SWD ☒ Single Zone ☐ Multiple Zone

7. If Unit or CA Agreement, Name and No.: Rosa Unit

8. Lease Name and Well No: Rosa Unit SWD #2

2. Name of Operator: Williams Production Company, LLC

9. API Well No: 30 039 30812

3a. Address: P.O. Box 640 Aztec, NM 87410

3b. Phone No (include area code): (505) 634-4208

10. Field and Pool, or Exploratory: SWD Entrada

4. Location of Well (Report location clearly and in accordance with any State requirements. *)

At surface: 2460' FNL & 2095' FWL

At proposed prod zone:

11. Sec., T., R., M., or Blk and Survey or Area: Section 25, 31N, 5W

14. Distance in miles and direction from nearest town or post office*: approximately 31 miles northeast of Blanco, New Mexico

12. County or Parish: Rio Arriba

13. State: NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drlg. unit line, if any): 2095'

16. No. of Acres in lease: 2,560.0

17. Spacing Unit dedicated to this well

RCVD DEC 1 '09

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft: 1,326' Rosa 344

19. Proposed Depth: 9,386'

20. BLM/BIA Bond No. on file: UT0899

OIL CONS. DIV.

21. Elevations (Show whether DF, KDB, RT, GL, etc.): 6,447' GR

22. Approximate date work will start*: October 1, 2009

23. Estimated duration: 1 month

DIST. 3

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, shall be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be required by the authorized officer.

25. Signature: Heather Riley — Name (Printed/Typed): Heather Riley — Date: 9/9/09

Title: Regulatory Specialist

Approved by (Signature): /s/ Manken Lucas — Name (Printed/Typed): — Date: 11/23/09

Title: AFM — Office: FFO

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, are attached.

Title 18 U.S.C Section 1001 and Title 43 U.S.C. Section 1212, make 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.

(Instructions on reverse)

Williams plans to drill and complete a saltwater disposal well in the above referenced location. The proper State of New Mexico saltwater disposal well permit will be obtained. MUST HAVE SWD order PRIOR TO SPUD

The surface is under Jurisdiction of the Carson National Forest, Jicarilla Ranger District.

DEC 07 2009

This location has been archaeologically surveyed by La Plata Archaeological Consultants. Copies of their report have been submitted directly to the CNF.

No new access road will be required for this proposed well.

This APD is also serving as an application to obtain a gas pipeline right-of-way. An associated gas pipeline tie of 464.7 feet would be required for this well, to fuel the injection pumps.

NOTIFY AZTEC OCD 24 HRS.
PRIOR TO CASING & CEMENT

This action is subject to technical and procedural review pursuant to 43 CFR 3165.3 and appeal pursuant to 43 CFR 3165.4

NMOCD

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

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

[1] API Number	[2] Pool Code	[3] Pool Name
30-039-30812	96436	SWD; Entrada

[4] Property Code	[5] Property Name	[6] Well Number
32031	ROSA UNIT SWD	2

[7] OGRID No.	[8] Operator Name	[9] Elevation
120782	WILLIAMS PRODUCTION COMPANY	6447'

[10] Surface Location

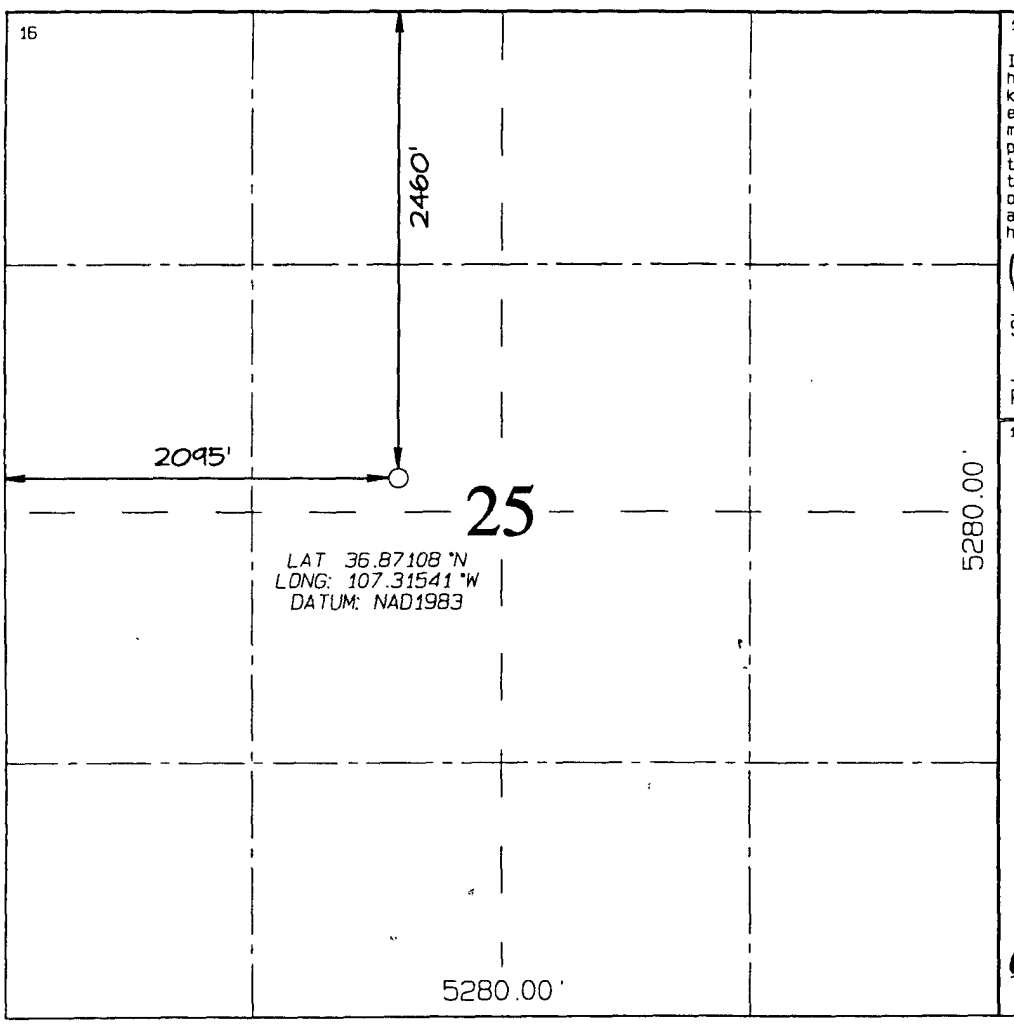
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	25	31N	5W		2460	NORTH	2095	WEST	RIO ARRIBA

[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

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] 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, 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.

Heather Riley 9/1/09
Signature Date

Heather R. Ley
Printed Name

[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

Date of Survey: JUNE 15, 2009

Signature and Seal of Professional Surveyor

JASON C. EDWARDS
NEW MEXICO
15269
REGISTERED PROFESSIONAL SURVEYOR

JASON C. EDWARDS
Certificate Number 15269

WILLIAMS PRODUCTION COMPANY

Operations Plan

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

DATE:	9/2/2009	**FIELD:**	Entrada
WELL NAME:	Rosa SWD#2	**SURFACE:**	USFS
BH LOCATION:	SENW Sec 25-31N-5W Rio Arriba, NM	**MINERALS:**	BLM
ELEVATION:	6,447' GR	**LEASE #**	SF-078768
MEASURED DEPTH:	**9,386'**		

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

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

Name	Depth	Name	Depth
Nacimiento	1,381	Gallup	7,086
Ojo Alamo	2,651	Greenhorn	7,806
Kirtland	2,781	Graneros	7,856
Fruitland	3,096	Dakota	8,001
Pictured Cliffs	3,276	Morrison	8,251
Lewis	3,596	Bluff	8,751
Cliff House Trans	5,211	Summerville	8,921
Cliff House	5,211	Todilto	8,996
Menefee	5,556	Entrada	9,036
Point Lookout	5,731	Chinle	9,311
Mancos	6,021	**TD**	**9,386**

B. **MUD LOGGING PROGRAM:** Mudlogger on location from protection liner to TD. Mud logger to pick TD.

C. **LOGGING PROGRAM:** Schlumberger: induction/density/neutron logs from intermediate casing depth to TD; additional speciality logs from protection liner depth to TD

D. **NATURAL GAUGES:** Gauge any noticeable increases in gas flow. Record all gauges in Tour book and on morning reports.

II. DRILLING

500'

A. **SURFACE HOLE:** PU 12 ¼", 17 ½" 26"in. Bit, Drill / ream to ~~+400 ft.~~ (MD). Drill with water and Gel sweeps. RU and run 20 in. Surface Casing, set at ~~400 ft.+~~ 500' (MD). NU 20in. SOW X 21-1/4 in. 2000 psi Braden Head. NU 20in annular preventer. The surface casing will be pressure tested to 1400 psi in conjunction with the BOP test before drilling out cement. Run TOTCO surveys at 200ft. and 400ft.

B. **INTERMEDIATE HOLE:** Drill out of 20in. csg. with a 17-1/2in. Tri-cone bit. Use LSND Mud System to 13-3/8 in. intermediate casing point. Increase Viscosity of mud system to 40+ to run casing. Treat for lost circulation as necessary. Obtain 100% returns prior to cementing. Notify Engineering of any mud losses. Circulate cement to surface. NU 21-1/4in 2,000 psi X 13-5/8 in. "B" Section. Run TOTCO Surveys each 500 ft.

C. **INTERMEDIATE LINER HOLE:** Drill out of 13-3/8in. csg. with a 12-1/4in. air hammer bit. Use Air Drilling System, to 12-1/4 in. intermediate casing point. Run & set 9-5/8" liner. Circulate cement to 150ft. above TOL. Run TOTCO Surveys each 500 ft.

D. **PRODUCTION HOLE:** Drill out of 9-5/8in. csg with an 8-3/4in tri-cone bit. Use Dispersed Mud System with water loss less than 8 ml/30 min. POOH, run OH logs. Increase Viscosity of mud system to 40+ to run casing. Treat for lost circulation as necessary.

E. **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 surface and Intermediate casing will be pressure tested **to 1500 psi for 30 minutes** after the BOPE test before drilling out cement. The drum brakes will be inspected and tested each tour. **All tests, inspections and SPR's will be recorded in the tour book as to time and results.**

II. MATERIALS

A. CASING PROGRAM:

CASING TYPE	OH SIZE (IN)	DEPTH (MD) (FT)	CASING SIZE (IN)	WEIGHT(LB)	GRADE
Surface	26	500	20	94	H-40
Intermediate	17 1/2	3,751	13-3/8	68	HCN-80
Protection Liner	12 1/4	3600-7731	9 5/8	40	N-80
Longstring	8 3/4	9,386	7	26	N-80

B. FLOAT EQUIPMENT:

1. SURFACE CASING: 20in. notched regular pattern guide shoe. Run one (1) standard centralizer on each of the bottom three (3) joints

2. INTERMEDIATE CASING: 13-3/8in. cement nose guide shoe with a self-fill insert float. Place float collar one joint above the shoe. Install one Turbulent centralizer on each of the bottom (3) joints and one standard centralizer every (3) joints to the surface casing.

3. DRILLING LINER: 9-5/8in. Whirler type cement nose guide shoe with a latch collar on top of bottom joint.

4. PRODUCTION CASING: 7" whirler type cement nose guide shoe with a float collar on top of bottom joint. Place marker joint above 5,600'. Place one turbolizer every third joint thru Dakota and Mesa Verde intervals. **(Call this in to BLM for approval. If denied, follow what is in the Operations Plan in the Permit package.)**

B. CEMENTING:

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

1. SURFACE: 10 bbl FW spacer, Slurry: 1270 sx (2286 ft^3) Premium Plus Type III + 2% Cal-Seal 60 + ¼ #/sk Poly-E-Flake + 0.3% Versaset + 2% Econolite + 6% Salt (13.5 lb/gal, 1.800 ft^3/sk) WOC 12 hours. Test csg to 1500psi. Circulate Cement to surface

2. INTERMEDIATE: 20 bbl FW spacer, Lead - 1605 sx (4382 cu.ft.) of "EXTENDACEM" + 5 #/sk pheno-seal + 5% Cal-Seal 60 + 0.5% D-AIR 3000 (Yield = 2.73 cu.ft./sk, Weight = 11.5 #/gal.). Tail - 200 sx (236 cu.ft.) of Premium cement + 0.125 #/sk Poly-E-Flake, (Yield = 1.18 cu.ft./sk, Weight = 15.6#/gal.). Total volume = 4618 cu.ft. Bump Plug to 1,500 psi. Notify engineering if cement is not circulated to surface WOC 12 hours. Run a temperature survey after 8 hours if cement is not circulated.

3. PROTECTION LINER: 20 bbl gelled water spacer, Lead: 1190 sx (1666 ft^3) Fraccem system + 0.6% Halad-9 + 0.1% CFR-3 + 3 #/sk Gilsonite + 0.15% HR-5 + 0.3% D-AIR 3000 (13.1 lb/gal, 1.40 ft^3/sk), Tail: 100 sx (117.9 ft^3) Premium cement + 0.3% Halad-9 (15.6 lb/gal, 1.18 ft^3/sk). Total volume 1784 ft^3. WOC 12 hours Circulate cement 100' above Intermediate Shoe minimum

4. PRODUCTION CASING: 10 bbl Gelled Water spacer. Cement: 270 sx (378 ft^3) of "FRACCEM" + 0.8% Halad-9 + 0.1% CFR-3 + 5 #/sk Gilsonite + 0.125 #/sk Poly-E-Flake + 0.1% HR-5 + 0.3% D-AIR 3000. (Yield = 1.40 ft^3/sk, Weight = 13.1 #/gal.). Displace cement at a minimum of 8 BPM. Total volume (378) ft^3. WOC 12 hours. circulate cement at least 100' into Liner,

III. 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 7" casing to 4500 psi max, hold at 1500 psi for 30 minutes.

C. STIMULATION

1. Stimulate Entrada formation interval with approximately 300,000 lbs 20/40 proppant in 30# Borate fluid system.

D. RUNNING TUBING

1. Isolation Packer: Arrow Set 1x, 5-1/2" X 3-1/2" (nickel coated) set at +/- 8906'
2. *Production Tubing:* Run 3-1/2", 9.3#, N-80, plastic line tubing. Land tubing approximately 50' below top Entrada perf.

Brian Alleman
Drilling Engineer I

Well Control Equipment Schematic for 2M Service

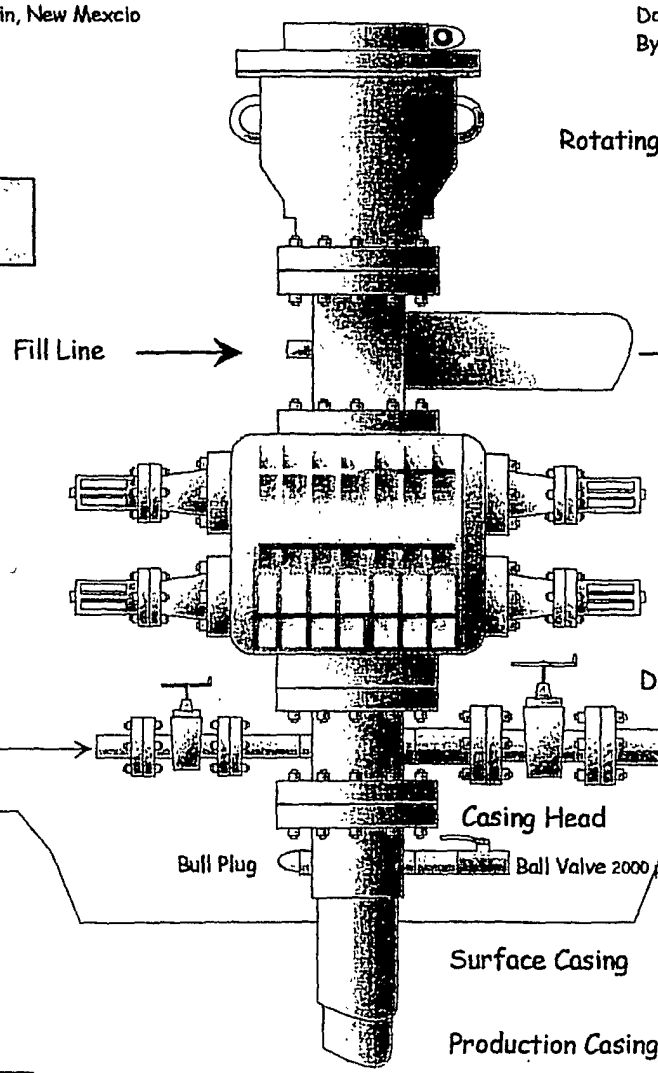
Attachment to Drilling Technical Program

Exhibit #1
Typical BOP setup

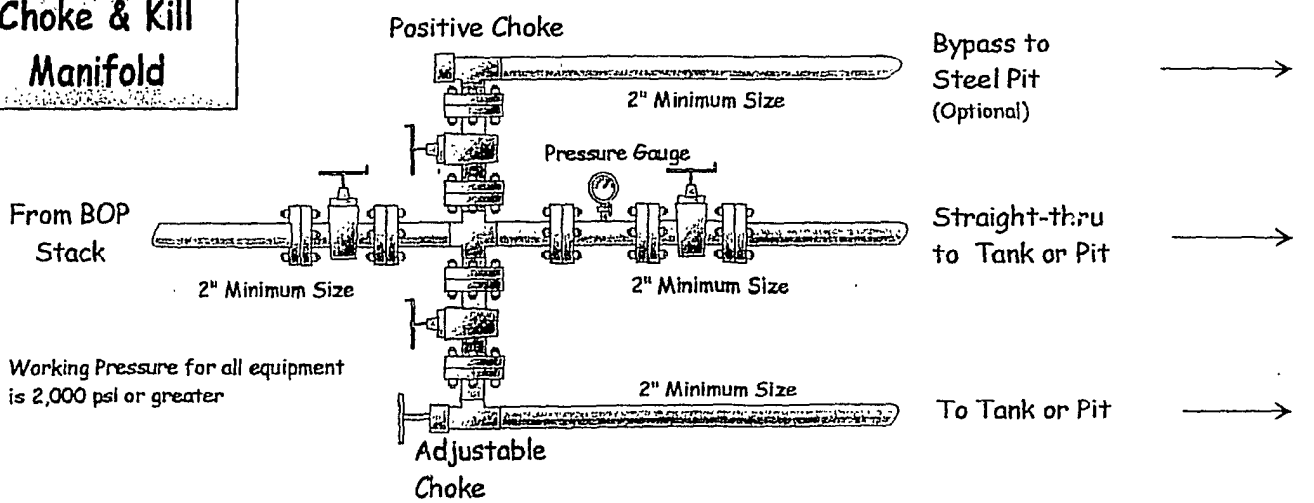
Location: San Juan Basin, New Mexcio

Date: August 20, 2001
By: John Thompson (Walsh E&P)

BOP Stack



Choke & Kill Manifold



Working Pressure for all equipment is 2,000 psi or greater