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-0078888
6. If Indian, Allottee or Tribe Name:

1a. Type of Work: ☒ DRILL ☐ REENTER

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

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

8. Lease Name and Well No.: 347

2. Name of Operator: Williams Production Company, LLC

9. API Well No.: 30-039-29780

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

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

10. Field and Pool, or Exploratory: Basin Fruitland Coal

4. Location of Well *(Report location clearly and in accordance with any State requirements. *)*
At surface: Lot F: 2470' FNL & 2580' FWL
At proposed prod. zone: Lot M: 10' FSL & 10' FWL

11. Sec., T., R., M., or Blk. and Survey or Area: F Section 11, 31N, 4W

14. Distance in miles and direction from nearest town or post office*: approximately 34 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 drig. unit line, if any): 10'

16. No. of Acres in lease: 2,560.00

17. Spacing Unit dedicated to this well: 320.0 acres W/2

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.: 50'

19. Proposed Depth: 7506

20. BLM/BIA Bond No. on file: ~~UT0847~~ UTO899

21. Elevations (Show whether DF, KDB, RT, GL, etc.): 7018 GR

22. Approximate date work will start*: June 1, 2006

23. Estimated duration: 1 month

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: Larry Higgins — Name *(Printed/Typed)*: Larry Higgins — Date: 01-31-06

Title: Drilling COM

Approved by *(Signature)*: David J. Mankiewicz — Name *(Printed/Typed)*: — Date: 5/23/06

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 Exploration and Production Company, LLC, proposes to drill a directional well to develop the Basin Fruitland Coal formation at the above described location in accordance with the attached drilling and surface use plans.

The well pad surface is under jurisdiction of the USDA Forest Service, Carson National Forest, Jicarilla Ranger District.

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

This APD is also serving as an application to obtain a pipeline right-of-way. An associated pipeline tie of 90.00 feet would be required for this location.

HOLD C104 FOR Directional survey

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

NMOCD

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

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

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

RECEIVED 2006 FEB 3 AM 11 25

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹API Number	²Pool Code	³Pool Name
30-039-29780	71629	BASIN FRUITLAND COAL

⁴Property Code	⁵Property Name	⁶Well Number
17033	ROSA UNIT	347

⁷OGRID No.	⁸Operator Name	⁹Elevation
120782	WILLIAMS PRODUCTION COMPANY	7018'

¹⁰ Surface Location

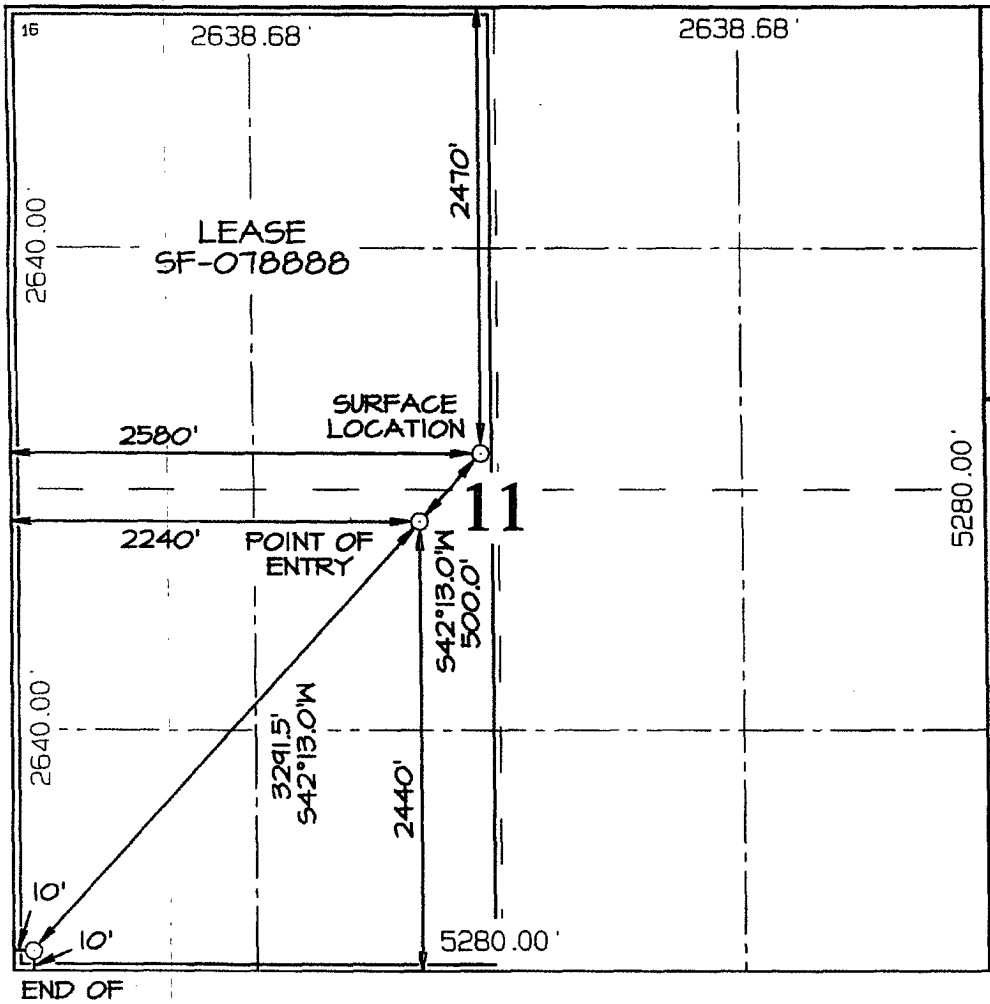
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	11	31N	4W		2470	NORTH	2580	WEST	RIO ARRIBA

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
M	11	31N	4W		10	SOUTH	10	WEST	RIO ARRIBA

¹² Dedicated Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
320.0 Acres - (W/2)			

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

Signature

Larry Higgins

Printed Name

Drilling COM

Title

1-31-06

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.

Survey Date: OCTOBER 18, 2004

Signature and Seal of Professional Surveyor

JASON C. EDWARDS
NEW MEXICO
15269
REGISTERED PROFESSIONAL SURVEYOR

JASON C. EDWARDS

Certificate Number 15269

SOubmit 3 Copies To Appropriate District Office
District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Ave., 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 and Natural Resources

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

Form C-103
May 27, 2004

WELL API NO.

5. Indicate Type of Lease FEDERAL X STATE ☐ FEE ☐

6. State Oil & Gas Lease No.
NMSF-0078888

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name
Rosa

1. Type of Well: Oil Well ☐ Gas Well ☒ Other

8. Well Number **347**

2. Name of Operator
Williams Production Company, LLC

9. OGRID Number
120782

3. Address of Operator
POB 640, Aztec, NM

10. Pool name or Wildcat
Basin Fruitland Coal

4. Well Location
Unit Letter **F** : **2470** feet from the **N** line and **2580** feet from the **W** line
Section **11** Township **31N** Range **04W** NMPM County **Rio Arriba**

11. Elevation *(Show whether DR, RKB, RT, GR, etc.)*
7018' GR

Pit or Below-grade Tank Application ☒ or Closure ☐

Pit type Drlg/Completion **Depth to Groundwater** >100 ft **Distance from nearest fresh water well** >1000 ft **Distance from nearest surface water** >500 ft

Pit Liner Thickness: 12 mil **Below-Grade Tank: Volume** bbls; **Construction Material**

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐	CHANGE PLANS ☐	COMMENCE DRILLING OPNS. ☐	P AND A ☐
PULL OR ALTER CASING ☐	MULTIPLE COMPL ☐	CASING/CEMENT JOB ☐	
OTHER: ☐		OTHER: ☐	

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Drilling/Completion pit to be located approximately 50 to 75 feet from well head. Pit multi-use drilling and completion to avoid additional site disturbance and pit will be considered out of service once production tubing set. Pit to be constructed, operated and closed in accordance with NMOCD guidelines and Williams procedures.

I hereby certify that the information above is true and complete to the best of my knowledge and belief. **I further certify that any pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☒, a general permit ☐ or an (attached) alternative OCD-approved plan ☐.**

SIGNATURE Larry Higgins for TITLE EH&S Specialist DATE 01/31/06

Type or print name **Michael K. Lane** E-mail address: **myke.lane@williams.com** Telephone No. **505-634-4219**

For State Use Only

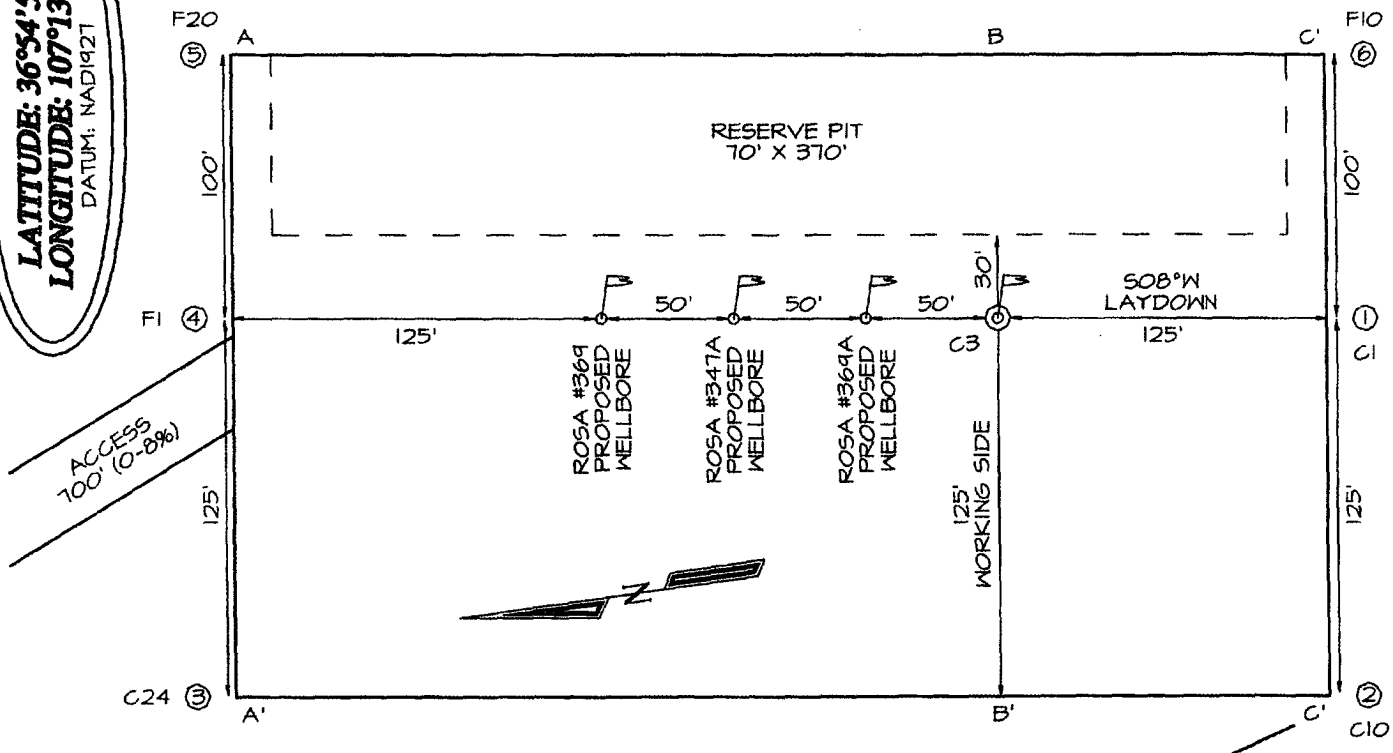
APPROVED BY: DEPUTY OIL & GAS INSPECTOR, DIST. #3 TITLE DATE MAY 25 2006

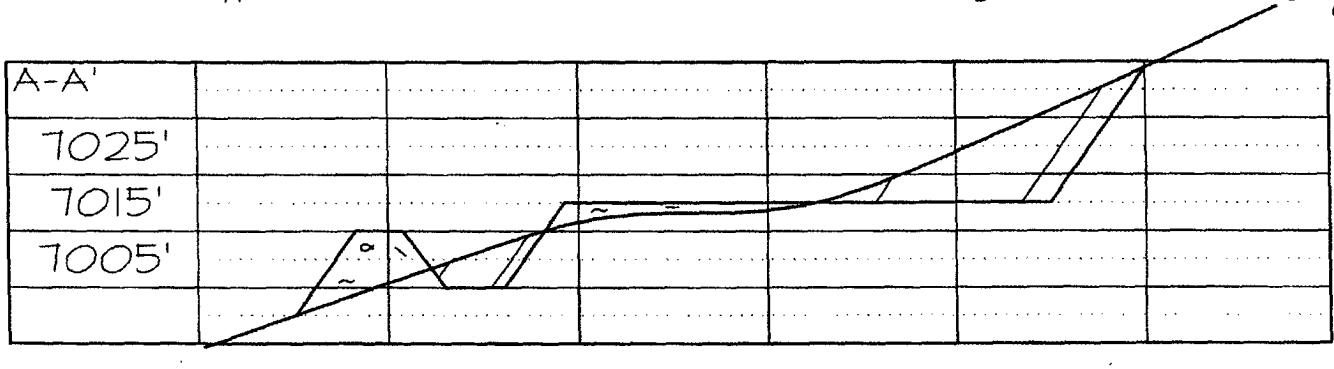
Conditions of Approval (if any):

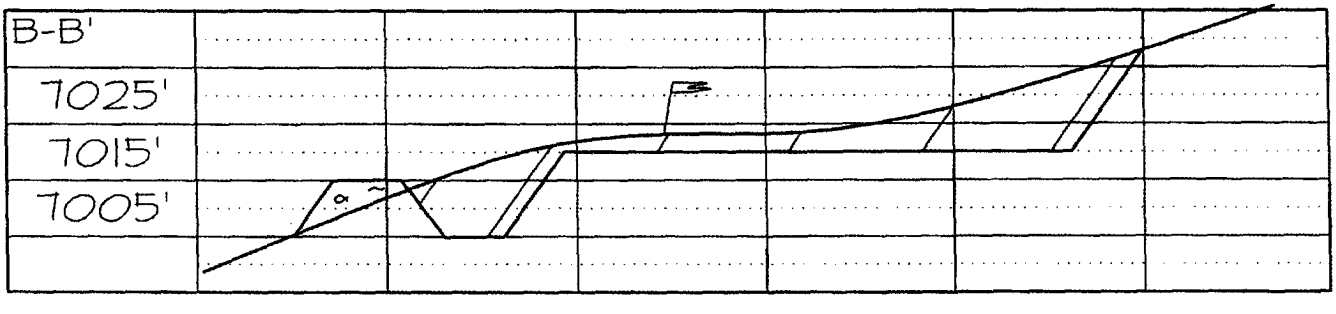
PLAT #1

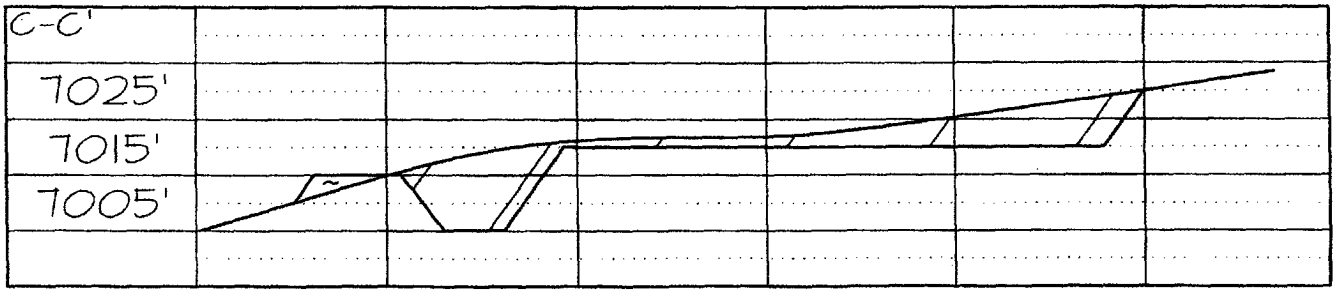
WILLIAMS PRODUCTION COMPANY ROSA UNIT #347
2470' FNL & 2580' FWL, SECTION 11, T31N, R4W, NMPM
RIO ARRIBA COUNTY, NEW MEXICO ELEVATION: 7018'

LATITUDE: 36°54'52"
LONGITUDE: 107°13'26"
DATUM: NAD1927









FILENAME: 31411FT	SHEET 2 OF 3	NCE SURVEYS, INC.	DRAWN BY: EDO	CHECKED BY: JCE

WILLIAMS PRODUCTION COMPANY

Operations Plan

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

DATE:	**2/2/2006**		
WELLNAME:	Rosa #347	**FIELD:**	Basin Fruitland Coal
SURF LOCATION:	SENW Sec. 11-31N-4W Rio Arriba, NM	**SURFACE:**	Forest
BH LOCATION	SWSW Sec 11-31N-4W		
ELEVATION:	7,018' GR	**MINERALS:**	Federal
TOTAL DEPTH:	7,506'	**LEASE #**	SF-078888

I. GEOLOGY: Surface formation - San Jose

A. FORMATION TOPS: (KB)

		TVD	MD				TVD	MD
San Jose		Surface	Surface		Top Coal		3,877	3,992
Nacimiento		2,152	2,152		Top Target Coal		3,907	4,093
Ojo Alomo		3,327	3,327		Bottom Target Coal		3,922	
Kirtland		3,447	3,447		Base Coal		N/A	
Fruitland		3,682	3,692		Picture Cliffs		N/A	
					TD		**3,922**	**7,506**

B. LOGGING PROGRAM: none

C. 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" casing point. Treat for lost circulation as necessary. Expect 100% returns prior to cementing. Notify Engineering of any mud losses.

B. **Drilling Fluid:** Horizontal section will be drilled with Calcium Chloride water.

C. **MUD LOGGING PRORAM:** Mud logger will be on location from 500' above Ojo Alamo to TD of intermediate casing. Then from drillout of intermediate casing to TD.

D. **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	HOLE SIZE	DEPTH(MD)	CASING SIZE	WT. & GRADE
Surface	12-1/4"	+/- 300'	9-5/8"	36# K-55
Intermediate	8-3/4"	+/- 4,079'	7"	20# K-55
Prod. Liner	6-1/4"	+/- 3,436-7,506'	4-1/2" perfed	10.5# K-55

***Note: All casing depths are measured depths.**

B. FLOAT EQUIPMENT:

1. SURFACE CASING: 9-5/8" notched regular pattern guide shoe. Run (1) standard centralizer on each of the bottom (4) joints of Surface Casing.

2. INTERMEDIATE CASING: 7" 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: 4-1/2" perforated liner with guide shoe on bottom.

C. CEMENTING:

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

1. SURFACE: Use 170 sx (237 cu.ft.) of "Type III" with 2% $CaCl_2$ and 1/4# of cello-flake/sk (Yield = 1.41 cu.ft./sk, Weight = 14.5 #/gal.). **Use 100% excess** to circulate the surface. WOC 12 hours. Total volume = ~~206~~ 240 cu.ft. Test to 1500#.
2. INTERMEDIATE: Lead – 500 sx (1,043 cu.ft.) of Premium Light with 8% gel, 1% $CaCl_2$ 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, and 1% $CaCl_2$ (Yield = 1.4 cu.ft./sk, Weight = 14.5#/gal.). Use **120% excess in Lead Slurry** to circulate to surface. **No excess in Tail Slurry.** Total volume = 1,182 cu.ft. Bump Plug to 1,500 psi. Notify engineering if cement is not circulated to surface.
3. PRODUCTION LINER: Open hole completion. No cement.

IV COMPLETION

A. PRESSURE TEST

Pressure test 7" casing to 3300# for 15 minutes.

B. STIMULATION

None

C. RUNNING TUBING

1. *Fruitland Coal:* Run 2-3/8", 4.7#, J-55, EUE tubing with a SN (1.375" ID) on top of bottom joint. Land tubing at approximately 3,730'.

Gary Sizemore
FJK Sr. Drilling Engineer

GENERAL ROSA DRILLING PLAN

Rosa Unit boundries:

T31N, R4W: all except sections 32-36
T31N, R5W: all except sections 1 & 2
T31N, R6W: all except sections 6,7,18,20, & 27-36
T32N, R6W: sections 32-36

FORMATION	LITHOLOGY	WATER	GAS	OIL/COND	OVER-PRES	LOST CIRC
Nacimiento	Interbedded shales, siltstones and sandstones	Possible	Possible	No	No	No
Ojo Alamo	Sandstone and conglomerates with lenses of shale	Fresh	No	No	No	No
Kirtland	Shale W/interbedded sandstones	No	Possible	No	No	No
Fruitland	Inter, SS, SiltSt, SH &Coals w/carb, SS, SiltSt, SH	Yes	Yes	No	Possible	Possible
Pictured Cliffs	Massive Sandstone w/thin interbedded shales	Possible	Yes	Possible	No	Possible
Lewis	Shale w/thin interbedded sandstones and siltstones	No	Possible	No	No	No
Cliff House	Transgressive sandstones	Possible	Yes	No	No	No
Menefee	Sandstones, carb shales and coal	Possible	Yes	No	No	No
Point Lookout	Regressive coastal barrier sandstone	Possible	Yes	Possible	No	Yes
Mancos	Marine shale and interbedded sandstone	No	Possible	Possible	No	Possible
Upr Dadota	Marine sand and shales	No	Yes	Possible	No	Possible
Lwr Dakota	Fluvial sands, shales, & coal	Possible	Yes	Possible	No	Possible

DRILLING

Potential Hazards:

1. There are no overpressured zones expected in this well.
2. No H2S zones will be penetrated while drilling this well.

Mud System:

1. Surface - The surface hole will be drilled with a low-solids, non-dispersed system with starch and lost circulation material as needed. Expected mud weights will be in the 8.4 to 9.0 lb per gal range. Viscosities will be in the 30 to 60 sec/qrt range as needed to remove drill cuttings.
2. Intermediate - The intermediate hole will be drilled with clear water and Benex to TD where the well will be mudded up to log and run casing. The mud system will be low-solids, non-dispersed with mud weights in the 9 to 10 lb per gal range as needed to control the well. Viscosities will be in the 45 to 55 range as needed to support any weight material. The weight material will consist of Barite.
3. Production - The well will be drilled using air from the intermediate casing point to TD. For Fruitland Coal wells, the coal section will be drilled with air/mist.

Williams Production Company, LLC

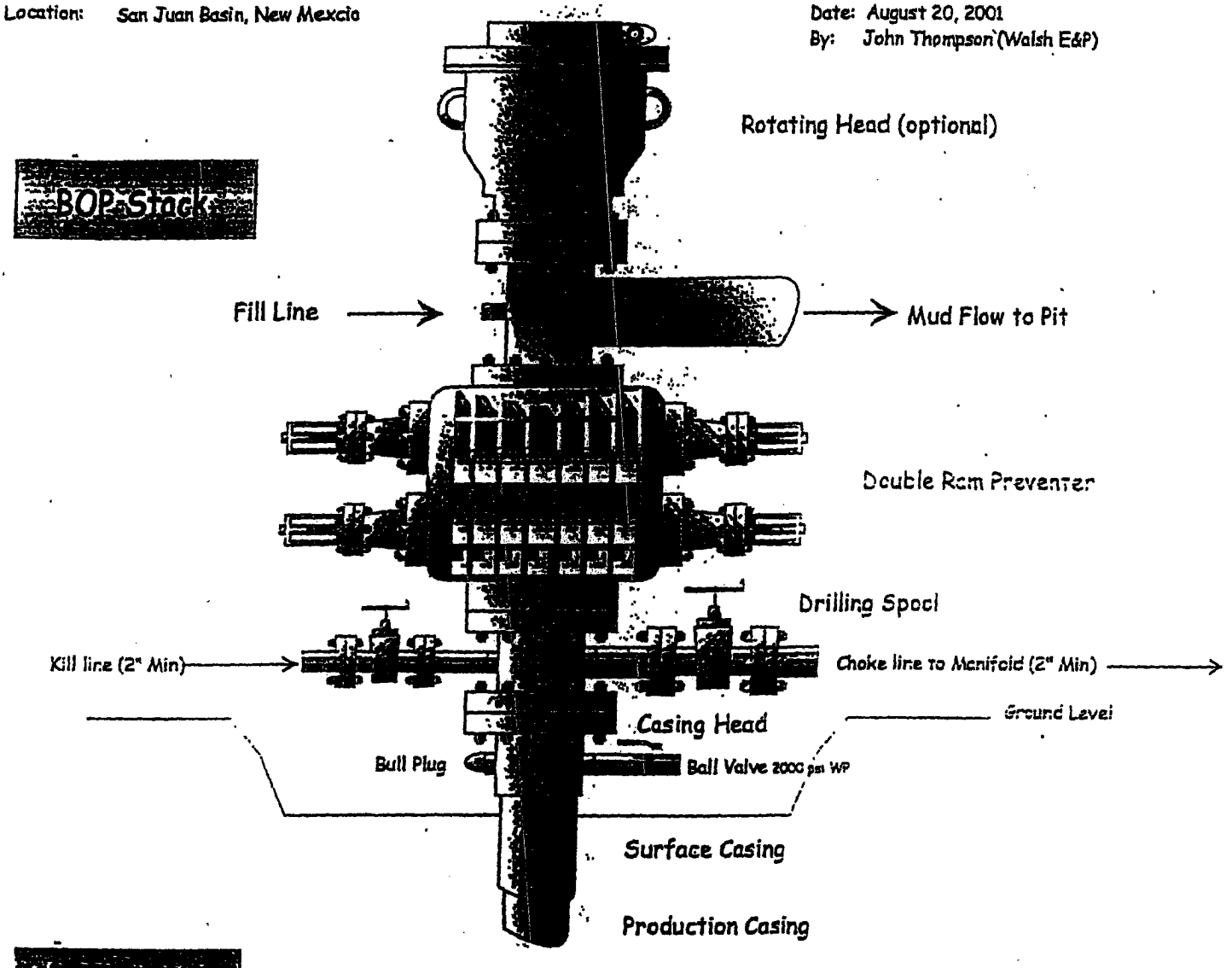
Well Control Equipment Schematic for 2M Service

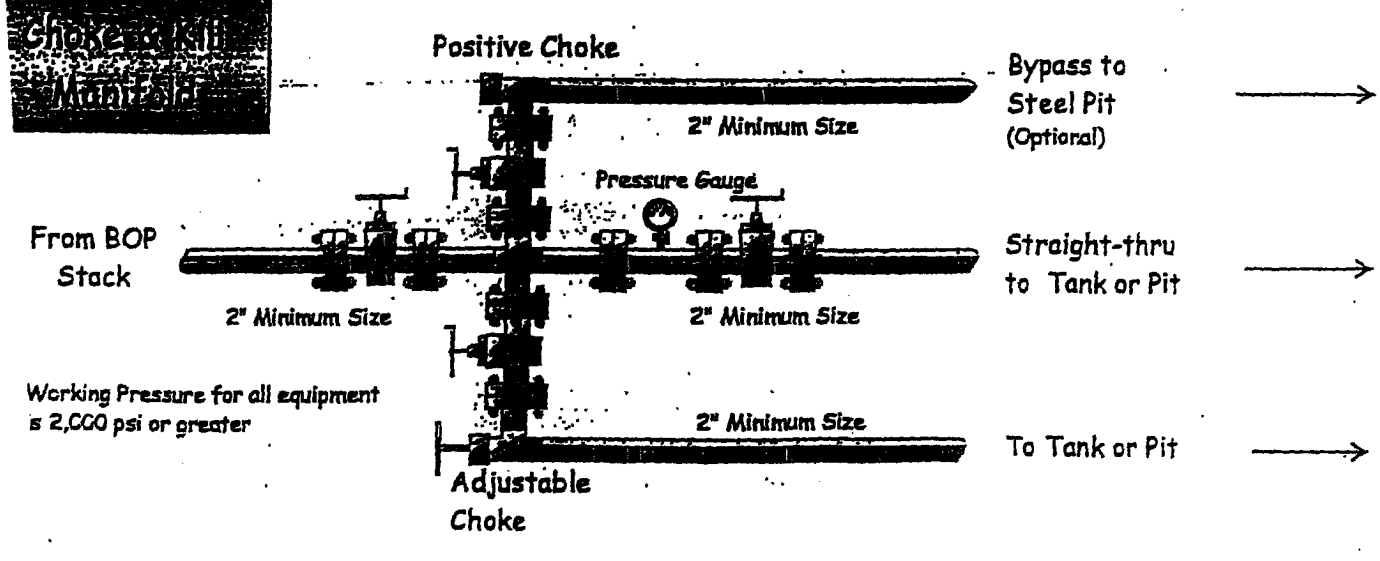
Attachment to Drilling Technical Program

Typical BOP setup

Location: San Juan Basin, New Mexcio

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





HALLIBURTON
Sperry Drilling Services

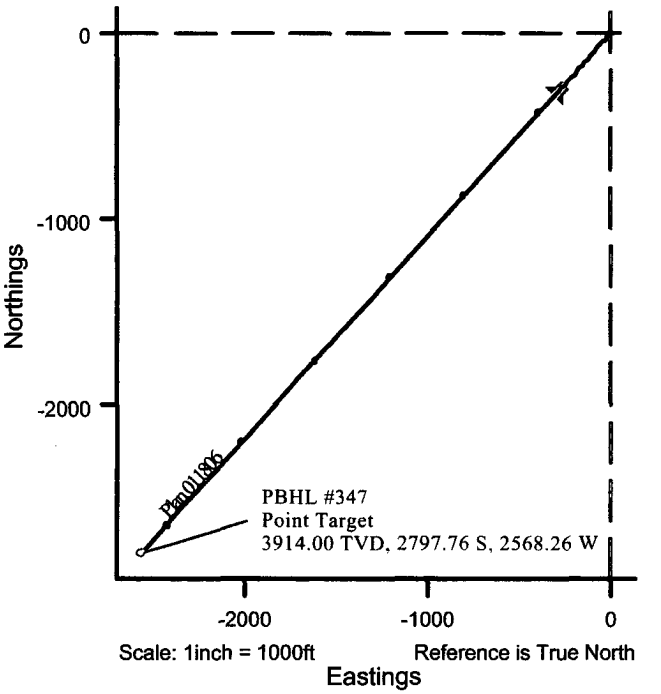
Williams Production Company

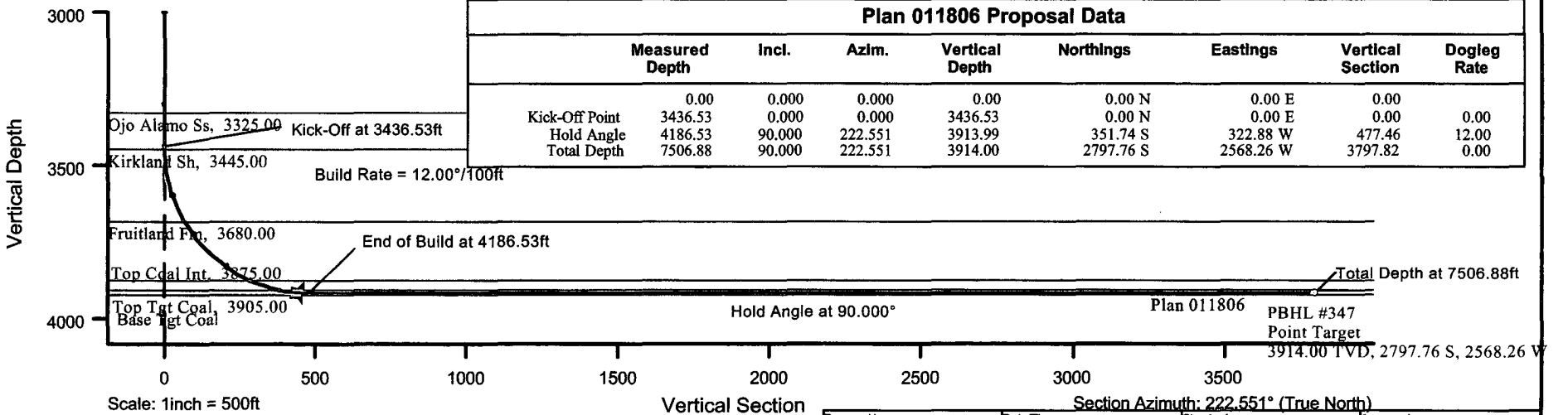
DrillQuest
Sperry-Sun

New Mexico
Rio Arriba County
Sec. 11-T31N-R04W
Rosa Unit #347
Plan 011806

Rosa Unit #347 Surface Location	
RKB Elevation:	7030.00ft above Mean Sea Level
Ref. NW Cor Sec 11:	2470.00 S, 2580.00 E
Ref. Global Coordinates:	2152692.69 N, 678152.18 E
Ref. Geographical Coordinates:	36° 54' 52.0112" N, 107° 13' 26.1848" W

Plan 011806 Bottom Hole Location	
Ref. RKB(7018`+12`KB):	3914.00ft
Ref. Structure:	3902.00ft
Ref. Mean Sea Level:	-3116.00ft
Ref. Wellhead:	2797.76 S, 2568.26 W (True North)
Ref. NW Cor Sec 11:	5268.00 S, 12.00 E (True North)
Ref. Global Coordinates:	2149878.58 N, 675601.85 E
Ref. Geographical Coordinates:	36° 54' 24.3449" N, 107° 13' 57.8069" W





Plan 011806 Proposal Data

	Measured Depth	Incl.	Azim.	Vertical Depth	Northings	Eastings	Vertical Section	Dogleg Rate
	0.00	0.000	0.000	0.00	0.00 N	0.00 E	0.00	
Kick-Off Point	3436.53	0.000	0.000	3436.53	0.00 N	0.00 E	0.00	0.00
Hold Angle	4186.53	90.000	222.551	3913.99	351.74 S	322.88 W	477.46	12.00
Total Depth	7506.88	90.000	222.551	3914.00	2797.76 S	2568.26 W	3797.82	0.00

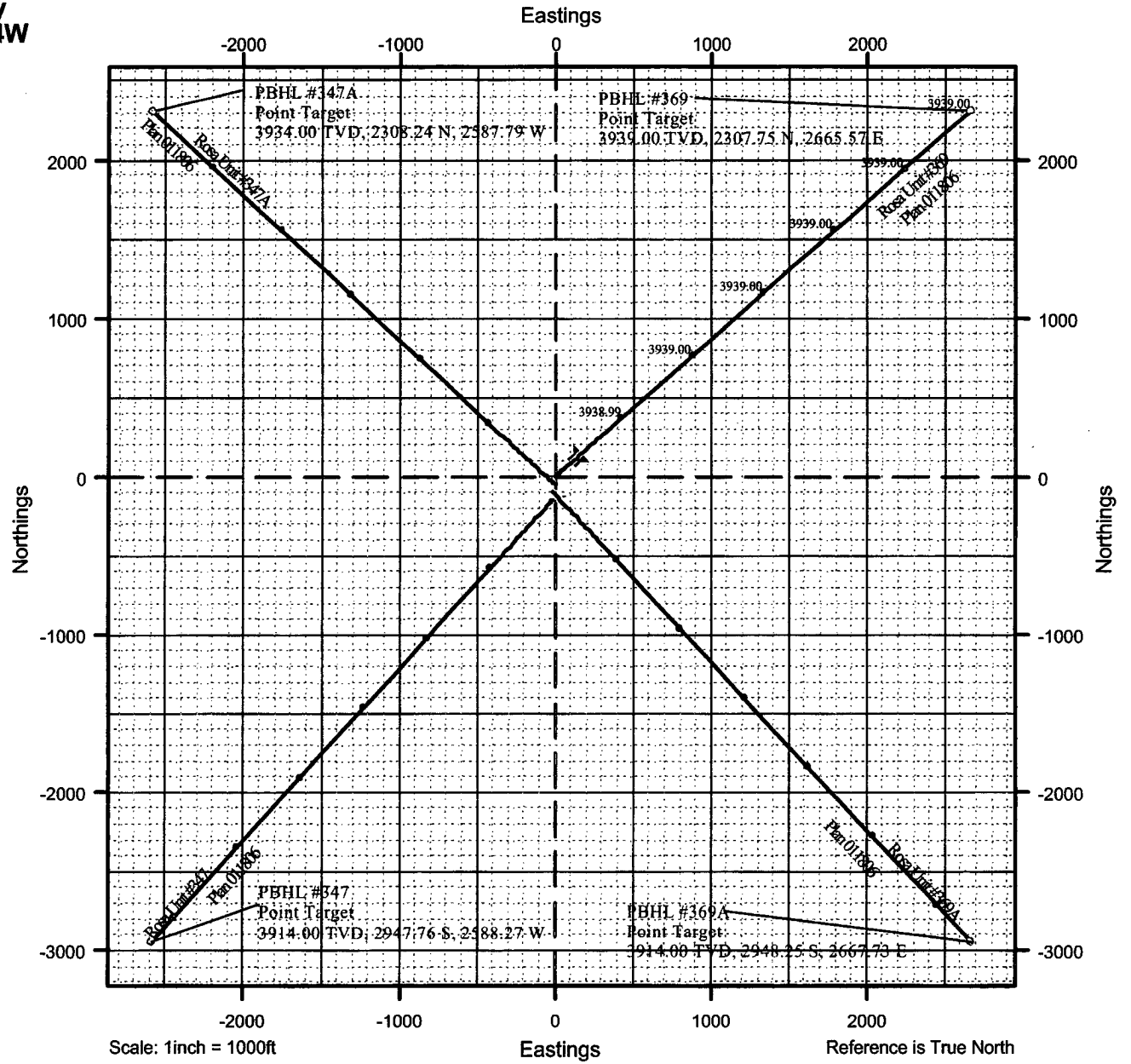
Prepared by:	Date/Time:	Checked:	Approved:
Dennis Cook	18 January, 2006 - 14:18		

HALLIBURTON
Sperry Drilling Services

Williams Production Company

DrillQuest
Sperry-Sun

New Mexico
Rio Arriba County
Sec. 11-T31N-R04W
Rosa Unit #369
Plan 011806



Prepared by:	Date/Time:	Checked:	Approved:
Dennis Cook	18 January, 2006 - 14:04		