

Submit 3 Copies
To Appropriate
District Office
DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

State of New Mexico
Energy, Minerals and Natural Resources Department
OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

Form C-103
Revised 1-1-89

DISTRICT II
811 South First, Artesia NM 88210

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

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)		WELL API NO. 30-039-23035
1. Type of Well: Oil Well <input type="checkbox"/> Gas Well <input checked="" type="checkbox"/> Other		5. Indicate Type of Lease STATE <input type="checkbox"/> FEE <input type="checkbox"/>
2. Name of Operator WILLIAMS PRODUCTION COMPANY		6. State Oil & Gas Lease No.
3. Address of Operator P O BOX 3102, MS 25-4, TULSA, OK 74101		7. Lease Name or Unit Agreement Name: ROSA UNIT
4. Well Location (Surface) Unit letter <u>K</u> : 1650 feet from the <u>SOUTH</u> line & 1820 feet from the <u>WEST</u> line Sec 16-31N-R5W RIO ARRIBA, NM		8. Well No. #94
10. Elevation (Show whether DF, RKB, RT, GR, etc. 6268' KB		9. Pool name or Wildcat BLANCO MV

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.	PLUG AND ABANDONMENT
PULL OR ALTER CASING		CASING TEST AND CEMENT JOB	
X OTHER: <u>Plugback, P&A, Prepare POW</u>		OTHER: _____	

12. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). Data below to satisfy NM OCD Rule 303.C.3 (b) (i)-(vii)

DENIED

RCVD SEP 21 '09

OIL CONS. DIV.

Please see attached for all Procedures:

DIST. 3

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

SIGNATURE Rachel Lipperd TITLE: Engineering Technician II DATE: September 18, 2009

Type or print name Rachel Lipperd Telephone No: (918) 573-3046

(This space for State use) APPROVED BY Denise

TITLE Federal ownership DATE _____
Conditions of approval, if any

**PLUGBACK and / or
PLUG AND ABANDONMENT PROCEDURE**

Revised for plugback September 8, 2009

Rosa Unit #94

Blanco Mesaverde
1650' FSL and 1820' FWL, Section 16, T31N, R5W
Rio Arriba County, New Mexico / API 30-039-23035
Lat: N _____ / Long: W _____

Note: All cement volumes use 100% excess outside pipe and 50' excess inside. The stabilizing wellbore fluid will be 8.3 ppg, sufficient to balance all exposed formation pressures. All cement will be Class B, mixed at 14.8 ppg with a 1.18 cf/sx yield.

PLUGBACK PROCEDURE:

1. This project requires a NMOCD C-144 CLEZ Closed-Loop System Permit for the use of an A-Plus steel tank to handle waste fluids circulated from the well and cement wash up.
2. Install and test location rig anchors. Comply with all NMOCD, BLM, and Operator safety regulations. MOL and RU daylight pulling unit. Conduct safety meeting for all personnel on location. Record casing, tubing and bradenhead pressures. NU relief line and blow down well. Kill well with water as necessary and at least pump tubing capacity of water down the tubing. ND wellhead and NU BOP. Function test BOP.

3. Rods: Yes ☐ , No ☒ , Unknown ☐ .
Tubing: Yes ☒ , No ☐ , Unknown ☐ , Size 2.875" , Length 5291' .
Packer: Yes ☒ , No ☐ , Unknown ☐ , Type Guiberson Unipacker IV .
If this well has rods or a packer, then modify the work sequence in step #2 as appropriate.

Note: tubing is plastic lined. LD tubing and PU workstring.

4. **Plug #1 (Mesaverde perforations and top, 5310' – 5210')**: RIH and set a CR at 5310'. Pressure test tubing to 1000 PSI. *Attempt to pressure test casing to 800 PSI. If casing does not test then contact Jason Stolworthy, Williams Engineer, 1-918-573-1143 (cell) for further instructions.* Mix 12 sxs Class B cement and spot a balanced plug inside casing to cover the Mesaverde interval. PUH.
5. **Plug #2 (7" casing shoe, 3650' – 3550')**: Mix 12 sxs Class B cement and spot a plug inside the casing to cover the 4.5" casing shoe. PUH.
6. **Plug #3 (4.5" liner top, 3448' - 3150')**: Load casing and circulate well clean. Mix 64 sxs Class B cement and spot a plug inside the casing to cover the 4.5" liner top, PUH and reverse circulate well clean.

7. Pressure test the 7" casing to 500 PSI. If the casing does test, then notify the BLM to witness a Mechanical Integrity Test. Record a 30 minute pressure test at 500 PSI on a chart. Fill the casing Nalco – 10 gallons of EC-1385 – A per 100 bbls of 2% KCl or Cortron R-2264 corrosion inhibitor for 65-130 bbls 2% KCl. TOH and LD the tubing. ND the BOP and NU the wellhead. RD and MOL.

PLUG AND ABANDONMENT PROCEDURE:

8. **Plug #3 (Fruitland top, 3037' – 3937')**: Mix 29 sxs Class B cement and spot a plug inside the casing to cover the Fruitland top. PUH.
9. **Plug #4 (Kirtland and Ojo Alamo tops, 2849' – 2304')**: Mix 115 sxs Class B cement and spot a plug inside the casing to cover through the Ojo Alamo top. TOH with tubing.
10. **Plug #5 (Nacimiento top, 1390' – 1290')**: Perforate 3 HSC squeeze holes at 1099'. If the casing tested, then attempt to establish rate into the squeeze holes. Set a 7" cement retainer at 1049'. Establish rate below CR. Mix and pump 57 sxs Class B cement, squeeze 28 sxs outside the casing and leave 29 sxs inside the casing to cover the Nacimiento top. TOH and LD tubing.
11. **Plug #6 (9.625" casing shoe, 284' – 0')**: Perforate 3 HSC squeeze holes through 7" casing at 284'. Establish circulation to surface out the bradenhead valve, circulate the BH annulus clean. Mix approximately 110 sxs Class B cement and pump down the 7" casing and circulate good cement to the surface. Shut in well and WOC.
12. ND BOP and cut off wellhead below surface casing flange. Install P&A marker with cement to comply with regulations. RD, MOL and cut off anchors. Restore location per BLM stipulations.

NOTES: *There are three objectives of the diagnostic fracture injection test. a) Breakdown the formation, b) estimate closure pressure, and pore pressure and c) estimate permeability. These parameters are determined by analyzing the pressure falloff during the shut-in. If the pressure data is distorted, the analysis will either be incorrect or impossible. Distorted or bad data can result from leaks, opening valves, or pumping into the well. Once the well is shut-in following an injection, it should not be disturbed for the duration of the test.*

Regarding the injection itself, the pump rate must be sufficient to create a fracture. In most cases 2-to-5 bpm is adequate but the final decision on rate is a function of anticipated permeability. Once a breakdown is obtained, maintaining a constant rate is important than achieving a specific rate. Ideally, the designed pump rate (or near the designed pump rate) should be achieved quickly, and attempts to vary rate up or down should be minimized.

Also, please note the following:

1. **Start and end the test separately for each zone to be tested. Name the VAN Ascii Files appropriately and note down perforations associated with each test.**
2. **Isolate all EMR pressure gauges from pumps with a valve such that during rig down the EMR gauge recording should not be affected.**
3. ***Prior to pumping the injection test, the hole must be loaded – no gas in the tubular goods***
4. **Once the pumping starts it should be continuous.**
5. **If pumping is stopped during the test due to some leaks etc., please follow these guidelines:**
 - *If the shut down during the injection is less than 30-seconds AND less than half of the test volume has been pumped, continue pumping the test as recommended.*
 - *If the shut down during the injection is less than 30 seconds AND more than half of the test volume has been pumped, DO NOT restart the injection. Shut-in the well and record the pressure decline as recommended.*
 - *If the shut down during the injection is more than 30 seconds AND more than half of the test volume has been pumped, DO NOT restart the injection. Shut-in the well and record the pressure decline as recommended.*

- *If the shut down during the injection is more than 30 seconds AND less than half of the test volume has been pumped, wait atleast 2 hours to restart the test. After 2 hours, restart the test from the beginning - pump the recommended volume and rate.*
 - *If there is any doubt about whether to resume pumping, DO NOT restart the injection. WAIT at least 2 hours, and repeat the test from the beginning – pump the recommended volume and rate.*
6. **After pump shutdown, DO NOT flow back or inject into well. This will corrupt all falloff data for the analysis**
 7. **After getting a break, obtaining a constant rate is more important than achieving a specific rate.**
 8. **Record with compupac/van: Surface pressure (0.01-psi accuracy), annulus pressure (if applicable: 0.01-psi accuracy), slurry rate (bpm) and time (1 second increments).**
 9. **The Electronic Memory recorders (EMR quartz gauge) will need to be programmed with atleast 0.01-psi accuracy. Time should be recorded in 1-sec increments. If recording more than 24-hours of shut-in, discuss the gauge-programming schedule with Kumar Ramurthy or Raymund Meijs at 303-899-4700.**
 10. **Always start recording before pumping begins and end recording after shut-in is complete.**
 11. **Please pump the test according to the procedure. It is extremely important that there is no prior pumping into the zone before the test to do a breakdown or to just get an ISIP. This is done to avoid creating any damage or altering (by creating a fracture, etc.,) the zone to be tested before the injection test.**
 12. **The treater should answer the following when he emails the data to kumar.ramurthy@halliburton.com :**

What type of fluid was pumped ? (freshwater, 2% KCL etc.,)

Perforation depths associated with the test

Bottomhole temperature (if available)

Any unusual occurrences like leaks, spikes/dips during pumping and during shut-in etc.,

If there is any question/doubt with regard to any part of the test, please contact Kumar Ramurthy at 303-899-4778. We want to do it right the first time and definitely want to avoid having to rerun the entire procedure.

DAY 1

1. Run in the hole with the packer assembly and 1.500" ID 2 7/8" XN Nipple as per diagram with gauges installed in the gauge carrier below the packer. (gauges programmed for 1 second data, 48 hrs.)
2. Set packer to straddle Basal Fruitland Coal zone to be tested at +/- 3050 ft
3. Run in the hole with N-Test tool/ XN Plug to +/- 10 ft above the XN-nipple

4. Pump 2% KCl water into the **Basal Fruitland Coal formation** (once well is loaded) as per the following:
 - Obtain a break
 - Once break is obtained, pump at a constant rate (max allowable rate) for 5-7 minutes.

Note: It is critical that while loading the well that the rate is low enough as not to inject fluid into the formation. DO NOT PERFORM A STEP RATE TEST. ONCE RATE HAS BEEN ESTABLISHED DO NOT ALTER RATE UNTIL SHUTDOWN.

5. Once injection has been maintained for 5-7 minutes , slow pump rate to +/- 1 bpm and lower the slickline. Monitor for pressure increase (do not exceed max pressure).
6. On pressure increase, shut down pumping, isolate pumps from wellhead and shut in well for **24 hours**. Make sure that the tubing pressure is not bled off.
7. After 24 hour shut-in period, bleed off tubing pressure, open equalizing prong and POOH with N-Test tool / XN plug.
8. Pull out of the hole with the tools and gauges.
9. Download pressure data from the gauge and e-mail it along with the van data to kumar.ramurthy@halliburton.com in Denver.

DAY 2

10. Run in the hole with the packer assembly and 1.500" ID 2 7/8" XN nipple as per diagram with gauges installed in the gauge carrier below the packer (gauges programmed for 1 second data, 48 hrs.)
11. Set packer to straddle Basal Fruitland Coal zone to be tested at +/- 2950 ft
12. Run in the hole with N-Test tool/ XN Plug to +/- 10 ft above the XN nipple
13. Pump 2% KCl water into the **"Upper" Fruitland Coal formation** (once well is loaded) as per the following:
 - Obtain a break
 - Once break is obtained, pump at a constant rate (max allowable rate) for 5-7 minutes.

Note: It is critical that while loading the well that the rate is low enough as not to inject fluid into the formation. DO NOT PERFORM A STEP RATE TEST. ONCE RATE HAS BEEN ESTABLISHED DO NOT ALTER RATE UNTIL SHUTDOWN.

14. Once injection has been maintained for 5-7 minutes, slow pump rate to +/- 1 bpm and lower the slickline. Monitor for pressure increase (do not exceed max pressure).
15. On pressure increase, shut down pumping, isolate pumps from wellhead and shut in well for **24 hours**. Make sure that the tubing pressure is not bled off.
16. After 24 hour shut-in period, bleed off tubing pressure, open equalizing prong and POOH with N-Test tool / XN plug.
17. Pull out of the hole with the tools and gauges.

18. Download pressure data from the gauge and e-mail it along with the van data to kumar.ramurthy@halliburton.com in Denver.

Rosa Unit #94 **Proposed Plugback**

Blanco Mesaverde

1650' FSL & 1820' FWL, Section 16, T-31-N, R-5-W
Rio Arriba County, NM / API #30-039-23035

Lat: _____ / Long: _____

Today's Date: **9/8/09**
Spud: 8/4/82
Comp: 10/3/82
Elevation: 6254' GL
6268' KB

Nacimiento @ 1049' *est

Ojo Alamo @ 2354'

Kirtland @ 2799'

Fruitland @ 2987'

Pictured Cliffs @ 3114'

Mesaverde @ 5340'

13.75" Hole

8.75" Hole

6.25" Hole

9.625", 32.3#, H-40 Casing set @ 234'
226 cf cement, circulated to surface,

7" TOC @ 2000' (T.S.)

2.875" tubing @ 3090'

TOL @ 3398'

4.5" TOC @ Liner (Calc, 75%)

7" 20#, K-55 Casing @ 3600'
Cemented with 180 sxs

Plug #3: 3448' – 3150'
Class B cement, 64 sxs

Plug #2: 3650' – 3550'
Class B cement, 12 sxs

Set CR @ 5310'

Plug #1: 5310' – 5210'
Class B cement, 12 sxs

Mesaverde Perforations:
5360' – 5681' (1983)
5359' – 5651' (1988)

4.5" 10.5# K-55 Casing @ 5775'
Cemented with 235 sxs
TOC at liner top per Sundry

TD 5780'
PBD 5715'

