

State of New Mexico
Energy, Minerals and Natural Resources Department
Oil Conservation Division

Sundry Notices and Reports on Wells

1. Type of Well
GAS

2. Name of Operator
**BURLINGTON
RESOURCES** OIL & GAS COMPANY

3. Address & Phone No. of Operator
PO Box 4289, Farmington, NM 87499 (505) 326-9700

4. Location of Well, Footage, Sec., T, R, M
1045' FSL, 790' FWL, Sec. 32, T-29-N, R-7-W, NMPM, Rio Arriba County, NM

API # (assigned by OCD)
30-039-26061

5. Lease Number

6. State Oil&Gas Lease #
B-10037-83-N

7. Lease Name/Unit Name
San Juan 29-7 Unit

8. Well No.
#167

9. Pool Name or Wildcat
Basin FC/Undes. PC

10. Elevation:

RECEIVED
JUL 22 1999
OIL CON. DIV.
DIST. 3

Type of Submission	Type of Action
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Abandonment
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Recompletion
<input type="checkbox"/> Final Abandonment	<input type="checkbox"/> Plugging Back
	<input type="checkbox"/> Casing Repair
	<input type="checkbox"/> Altering Casing
	<input checked="" type="checkbox"/> Other -
	<input type="checkbox"/> Change of Plans
	<input type="checkbox"/> New Construction
	<input type="checkbox"/> Non-Routine Fracturing
	<input type="checkbox"/> Water Shut off
	<input type="checkbox"/> Conversion to Injection

13. Describe Proposed or Completed Operations

It is intended to add the Fruitland Coal when we complete the Pictured Cliffs on the subject well according to the attached procedure and C102 plat.

SIGNATURE *Ernie Busch* Regulatory Administrator July 20, 1999

(This space for State Use)

Approved by ORIGINAL SIGNED BY ERNIE BUSCH Title DEPUTY OIL & GAS INSPECTOR, DIST. 3 Date JUL 26 1999

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

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

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

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

State of New Mexico
Energy, Minerals & Natural Resources Department

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number 30-039-26061	2 Pool Code 71629/72359	3 Pool Name Basin Fruitland Coal/Blanco Pict.Cliffs
4 Property Code 7465	5 Property Name SAN JUAN 29-7 UNIT	6 Well Number 167
7 GSRID No. 14538	8 Operator Name BURLINGTON RESOURCES OIL & GAS COMPANY	9 Elevation 6763'


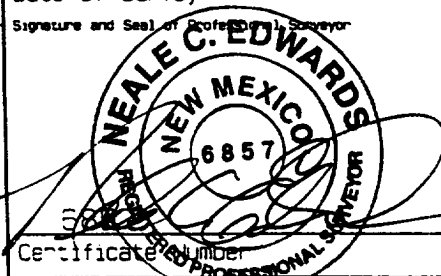
10 Surface Location

UL or lot no. M	Section 32	Township 29N	Range 7W	Lot Idn	Feet from the 1045	North/South line SOUTH	Feet from the 790	East/West line WEST	County RIO ARriba
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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 FTC-W/320 PC-160									
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

16 B-10037-78-N 5280.00' B-10037-83-N 5280.00' E-3642-15-NM 790' 1045' 5280.00'	5277.36' 32 5280.00'	17 OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief  Signature Peggy Bradfield Printed Name Regulatory Administrator Title 7/20/99 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. NOVEMBER 16, 1998 Date of Survey Signature and Seal of Professional Surveyor  Certificate Number

BURLINGTON RESOURCES

San Juan 29-7 Unit #167

**1045' FSL, 790' FWL
Unit M, Section 32, T29N, R7W
Rio Arriba County, New Mexico
LAT: 36° 40.70' LONG: 107° 36.00'
Basin Fruitland Coal / Undes. Pictured Cliffs**

Completion Procedure

PROJECT OBJECTIVE:

The Fruitland Coal will be completed with a single stage 20# Delta Frac 140 while the Pictured Cliffs will be completed in a single stage foam frac. The stimulation work for the Fruitland Coal will be performed rigless. A completion rig will be moved in for stimulation clean up. A frac string and straddle packer will be run across the Fruitland Coal and the Pictured Cliffs formation stimulated. After clean up, the zones will be tested and a single string of tubing will be landed.

RIGLESS STIMULATION:

Ind G / 3-d D/CN from 3812'-218' previously run March 12, 1999.

Deliver to location following equipment:

Seven (7) - 400 bbl Frac Tanks. Note: After Fruitland Coal frac one tank will have to be filled for the Pictured Cliffs completion. One rig tank filled w/ 2% KCl
4-1/16" 5000 psi full bore frac valve.
3810' 2-7/8", 6.5#, J-55
3500' 2-3/8", 4.7#, J-55. EUE workstring / production tubing
3-7/8" bit
Two (2) 4-1/2" Packers

Below are materials required for the proposed two stage fracture stimulation:

	Fruitland Coal	Pictured Cliffs	
Fluid Type	20# DELTA FRAC 140	20# Linear gel & N2	
Stages	One	One	
Acid Volume 15% HCl	36	12	Bbls
Fluid Volume 2% KCl	2262	350	Bbls
Sand Type	Arizona	Arizona	
Sand Size	20/40 - 200,000#	20/40 - 60,000#	
Additional Materials		274 N2 (w/o cool down)	Mscf

WELL SITE PREPARATION

- Comply to all NMOCD, BLM, and BR regulations. Conduct daily safety meetings for all personnel on location. Notify BR regulatory (Peggy Bradfield 326-9727) and the appropriate Regulatory Agency prior to pumping any cement job. If an unplanned cement job is required, **approval is required before the job can be pumped. If verbal approval is obtained, document the approval in Dims.** Allow adequate notice prior to the pump time for the Agency to witness the cementing operation.
- Inspect location and wellhead and install rig anchors prior to rig move.
- Construct blow pit.

RIGLESS PROCEDURE

1. Run fluid tests on water. Filter water based upon stimulation company solids water analysis. Contact Production Engineer and discuss stimulation water source and quality. Inspect wellsite, verify and report wellhead size and pressure rating. Mark location with flagging for tank spotting. Spot seven (7) frac tanks and fill w/ 3# biocide/tank and 2% KCl water. Put one load of fresh water in each tank before adding 2% concentrated KCl water. Set location proppant container and fill with sand.
2. Hold pre-job meeting with rig supervisor, engineers, frac consultant, wireline company, stimulation company, and other key vendors to review procedure.
3. NU 4-1/16" 5000 psi full bore frac valve. Check pressure ratings on complete wellhead to ensure all fittings are rated to at least 5000 psi. Lay flowback line to pit.
4. RU stimulation company. Pressure test casing to 4300 psi (90% of burst). RD stimulation company. RU wireline company with packoff. Run GR-CCL-CBL log from PBTD to 1800'. Perforate 188 holes over 47' of formation at the following depths: 3292'-3296' (6'), 3330'-3333' (3'), 3350'-3360' (10'), 3364'-3370' (6'), 3412'-3416' (4'), 3419'-3437' (18') at 4 SPF with 3-1/8" HSC 3125-306T (12gm 0.30") charges. RD wireline company.
5. RU stimulation company. Pressure test surface lines to 5300 psi. Breakdown perforations @ 10 BPM with 1500 gals 15% inhibited HCl acid. Pump 2 bbl acid, drop 282 7/8" 1.3 SG balls @ 7 balls per barrel until 33 bbls of acid are pumped. Spin the ball gun out during remainder of acid (1BBL) to empty ball gun. Displace acid with 2% KCl water to bottom perforation. Balloff to maximum pressure of 4300 psi. Record breakdown pressure, ball action, and ISIP. RD stimulation company.
6. RU wireline company with packoff. RIH with junk basket. Knock off balls and POOH. Record total ball recovery and number of hits. RD wireline company.
7. RU stimulation company to frac down 4-1/2" casing. Hold pre-job safety meeting with all personnel on location. Pressure test surface lines to 5300 psi prior to stimulation.
8. Fracture stimulate in 1.0 to 5.0 ppg stages at 55 BPM constant downhole rate 20# Delta Frac 140 and 200,000# 20/40 mesh Arizona sand. **Maintain a bottom hole frac gradient of 1.10 psi/ft throughout job.** Tag sand with Sb124 and Ir192 isotopes. When sand is in hopper and the concentration begins to drop, call flush. **Flush to top perf with +/- 52 Bbls.** Maximum surface treating pressure is 4300 psi. Monitor bottomhole treating pressure, surface treating pressure, downhole rate, foam quality, and sand concentration with computer van. Treat per the following schedule:

<u>Stage</u>	<u>Fluid Volume (gal)</u>	<u>CONC</u>	<u>Sand Volume (lbs)</u>	<u>Type</u>
1-Pad	33,000		0	
2 - SLF	10,000	1 #/gal	10,000	20/40 Arizona
3 - SLF	11,000	2 #/gal	22,000	20/40 Arizona
4 - SLF	11,000	3 #/gal	33,000	20/40 Arizona
5 - SLF	15,000	4 #/gal	60,000	20/40 Arizona
6 - SLF	15,000	5 #/gal	75,000	20/40 Arizona
7 - Flush	<u>2,100</u>			
Totals	97,100		200,000	

9. Shut well in after frac and record ISIP. After ISIP is recorded, RD stimulation company. Install flowback line above frac valve. Wait for 30 minutes to 1 hour before commencing flowback. Open well to pit, starting with a 10/64" choke. If minimal sand is being produced, change to a larger choke size (16/64"). If choke plugs off, shut well in and remove obstruction from choke and return to flowback. Continue increasing choke size and cleaning well up until fluid returns are negligible. **Take pitot gauges when possible.**
10. NOTE: If well begins making sand during flowback, drop to next lower choke size.
11. ND flowback line, frac valve, and isolation tool. NU production valve with flow tee. NU flowback line.

PICTURED CLIFFS PERFORATING AND FRACTURE STIMULATION (2ND STAGE).

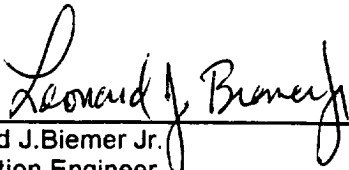
1. Comply to all NMOCD, BLM, and BROG rules and regulations. MOL and RU completion rig. NU BOP w/flow tee and stripping head. NU blooie line and 2-7/8" relief line.
2. Fill 2-400 bbl. frac tanks w/2% KCL water. If necessary, filter all water to 25 microns. One tank is for gel and one tank for breakdown water. Usable water required for frac is 719 bbls.
3. TIH to tag (sand fill) or PBTD 3809'. If sand fill is encountered, CO w/air/mist to 3809'.
4. Monitor gas and water returns and **take pitot gauges from Fruitland Coal.**
5. TIH with 4-1/2" packer on 2-7/8" packer and set at 3450'.
6. RU stimulation company. Pressure test casing to 4300 psi (90% of burst). Release packer and TOOH.
7. RD stimulation company. RU wireline company with packoff. Perforate 20 holes over 20' of formation at the following depths: 3465'-3484' (20') at 1 SPF with 3-1/8" HSC 3125-306T (12gm 0.30") charges. RD wireline company.
8. TIH with 4-1/2" bottom Backer Swab Cup assembly straddle packer, 5 joints of 2-7/8" N-80 tubing, 4-1/2" full bore packer, 3 joints of 2-7/8" N-80 tubing and the remaining 2-7/8" tubing string. Set bottom packer at 3442'. (Fruitland Coal perms 3292' - 3437').
9. RU stimulation company. Pressure test surface lines to 5300 psi. Breakdown perforations @ 2 BPM with 500 gals 15% inhibited HCl acid. Pump 1 bbl acid, drop 40 7/8" 1.3 SG balls at 2 balls per barrel until 10 bbls of acid are pumped. Spin the ball gun out during remainder of acid (1BBL) to empty ball gun. Displace acid with 2% KCl water to bottom perforation. Balloff to maximum pressure of 4300 psi. Record breakdown pressure, ball action, and ISIP. RD stimulation company.

10. TOH with packer assembly.
11. RU wireline company with packoff. RIH with junk basket. Knock off balls and POOH. Record total ball recovery and number of hits. RD wireline company.
12. TIH with 4-1/2" bottom Baker Swab cup assembly straddle packer, 5 joints of 2-7/8" N-80 tubing, 4-1/2" full bore packer, 3 joints of 2-7/8" N-80 tubing and the remaining 2-7/8" tubing string. Set bottom packer at 3444'. (Fruitland Coal perms 3292' - 3437').
13. Fracture treat Pictured Cliffs down frac string with 24,330 gals. of 70% quality foam using 30# gel as the base fluid and 60,000# 20/40 Arizona sand. Pump at 30 BPM. Tag sand with Sc46 isotope from the Fruitland Coal stimulation. Monitor bottomhole and surface treating pressures, rate, foam quality, and sand concentration with computer van. Max. pressure is 4300 psi and estimated treating pressure is 5975 psi. (Pipe friction is 4742 psi @ 30 BPM). Treat per the following schedule:

<u>Stage</u>	<u>Foam Vol. (Gals.)</u>	<u>Gel Vol. (Gals.)</u>	<u>Sand Vol. (lbs.)</u>
Pad	20,000	6,000	---
1.0 ppg	20,000	6,000	20,000
2.0 ppg	20,000	6,000	40,000
3.0 ppg	20,000	6,000	60,000
4.0 ppg	20,000	6,000	80,000
Flush	<u>(620)</u>	<u>(186)</u>	<u>0</u>
Totals	100,000	30,000	200,000#

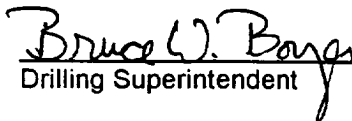
14. Shut well in after frac and record ISIP. After ISIP is recorded, RD stimulation company. Install flowback line above frac valve. Wait for 30 minutes to 1 hour before commencing flowback. Open well to pit, starting with a 10/64" choke. If minimal sand is being produced, change to a larger choke size (16/64"). If choke plugs off, shut well in and remove obstruction from choke and return to flowback. Continue increasing choke size and cleaning well up until fluid returns are negligible. **Take pitot gauges when possible.**
15. When pressures allow, release packers and TOOH packers and frac string.
16. TIH with packer and 2-3/8" production tubing and set packer at 3450'.
17. Monitor gas and water returns and **take pitot gauges when possible on the tubing and casing (PC / FTC).**
18. Release packer and TOH with tubing string and packer. TIH w/notched collar on 2-3/8" tubing and clean out to 3809' w/air/mist. TOH.
19. Run after frac Gama Ray log from 3600' to 3100'.
20. TIH with one joint of 2-3/8", 4.7# J-55 tubing with expendable check on bottom and standard seating nipple and the remaining 2-3/8" tubing. Again cleanout to PBTD at 3809'. When wellbore is sufficiently clean, land tubing at +/- 3485' KB. **Take final water and gas rates.**
21. ND BOP's. NU Tree and manifold assembly. Pump off expendable check. Make swab run to kick well off if needed. Obtain stabilized pitot gauges at 15, 30, 45, and 60 min for the entire well. Record on WIMS report.
22. ND BOP and NU wellhead and tree. Rig down and release rig.

Recommended :


Leonard J. Biemer Jr.
Production Engineer

Approval:

Regional Engineer

 7.19.99
Drilling Superintendent

Production Engineer

Leonard J. Biemer Jr.

Office 326-9703
Home 326-2381
Pager 326-8940

Mark Byars

Pager 327-8470
Mobile 320-0349
Home 327-0096

Frac Consultants:

Mike Martinez

Pager 599-7429
Mobile 320-7473
Home 327-6161

VENDORS:

	<u>Service Company</u>	<u>Phone Number</u>
Cased Hole:	Black Warrior Perforating	326-6669
Stimulation:	Halliburton	325-3575
Packers:	Baker	325-0216
Frac Valve:	District Tools	
Tracer Survey:	Protechnics	326-7133