

submitted in lieu of Form 3160-5

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

RECEIVED

Sundry Notices and Reports on Wells

99 JAN 12 AM 9:35

070 B. L. M. DIST. 3

1. Type of Well  
GAS

5. Lease Number  
SF-078439  
6. If Indian, All. or  
Tribe Name

2. Name of Operator

**BURLINGTON  
RESOURCES**

OIL & GAS COMPANY

7. Unit Agreement Name

3. Address & Phone No. of Operator

PO Box 4289, Farmington, NM 87499 (505) 326-9700

RECEIVED

JAN 15 1999

Well Name & Number  
Johnston Federal #6A  
API Well No.

4. Location of Well, Footage, Sec., T, R, M

1850' FNL 1620' FWL, Sec. 35, T-31-N, R-9-W, NMPM

OIL CON. DIST. 3

30-045-21642  
Field and Pool  
Blanco Mesaverde  
11. County and State  
San Juan Co, NM

12. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OTHER DATA

Type of Submission

☒ Notice of Intent

☐ Subsequent Report

☐ Final Abandonment

Type of Action

☐ Abandonment

☐ Recompletion

☐ Plugging Back

☐ Casing Repair

☐ Altering Casing

☒ Other - payadd

☐ Change of Plans

☐ New Construction

☐ Non-Routine Fracturing

☐ Water Shut off

☐ Conversion to Injection

13. Describe Proposed or Completed Operations

It is intended to add Lewis pay to the Mesaverde formation of the subject well according to the attached procedure.

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

Signed [Signature] Title Regulatory Administrator Date 1/7/99  
TLW

(This space for Federal or State Office use)

APPROVED BY [Signature] Title [Signature] Date 1/13/99

CONDITION 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.

NMOOD

**Johnston Federal #6A**  
**Lewis Shale Payadd Procedure**  
**F 35 31N 09W**  
**San Juan County, NM**  
**Latitude: 36 Deg., 51.40 Min**  
**Longitude: 107 Deg., 45.18 Min.**

**Summary:**

The subject well is a 1999 Lewis Shale payadd in 7" and 4-1/2" casing. This well was drilled in 1993 and was completed in the Point Lookout and Cliffhouse intervals. The Pt. Lookout interval was stimulated w/ approximately 50,000 lbs. total sand and 50,000 gal. total slickwater. The Cliffhouse interval was stimulated w/ approximately 51,000 lbs. total sand and 50,800 gal. total slickwater and placed on production. The Lewis will be perforated and fracture stimulated in two (2) stages with 266 total tons of liquid CO<sub>2</sub> and 95,000 lbs. total 40/70 mesh sand. The new stimulation technique will test the viability of a liquid CO<sub>2</sub> and sand stimulation within the Lewis Shale interval. The well will then be cleaned-up, tubing and rods landed in the Mesaverde and placed on production.

- 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 and after CBL is run. 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.
- **DURING CO<sub>2</sub> STIMULATION, ONLY AUTHORIZED PERSONNEL ARE ALLOWED ON LOCATION. ONLY CO<sub>2</sub> EXPERIENCED AND APPROVED STIMULATION PERSONNEL AND PUMP EQUIPMENT ARE ALLOWED ON LOCATION.**

1. MOL, hold safety meeting and RU completion rig. RD pumping unit. Insure all safety equipment is strategically located and functioning properly. NU relief lines to blow pit. Set one (1) 400 BBL frac tank and fill w/ 2% KCL. Blow well down and kill well w/ 2% KCL water as necessary. TOOH w/ 7/8" X 1- 1/4" X 22' polish rod, 3/4" X 4' pony rod, 203- 3/4" X 25' sucker rods, and 2 X 1- 1/4" X 10' RHAC bottomhole pump. Call Energy Pump Service to pick-up pump for repair @ **564-2874**. Lay down rods. ND pumping tee. ND wellhead and NU 7-1/16" 3M BOP, stripping head and blooie line. Operationally test BOP.

2. TOOH w/ approximately 166 jts. 2-3/8" Mesaverde tubing set at +/- **5130'** and stand back. Inspect tubing and replace bad tubing as necessary\*\*.

**\*\*NOTE:** If existing tbgr. is scaled-up, contact production engineer and a scale analysis will be run. This will determine if we will pump acid down the 2-3/8" 4.7# J-55 workstring and acid wash perforations across the Point Lookout and Cliffhouse interval.

3. RU wireline. RIH w/ 4-1/2" gauge ring and check wellbore for obstructions to PBTD @ **5210'**. POOH.\*\*

**\*\*NOTE:** If obstructions are encountered, PU 3-7/8" bit and 4-1/2" 10.5# csg. scraper on 2-3/8" 4.7# J-55 workstring and CO to PBTD @ **5210'**. TOOH

4. TIH w/ 4-1/2" CIBP, on/off tool, 4-1/2" fullbore pkr and approximately 135 jts. 2-3/8" 4.7# J-55 workstring and tubing set CIBP @ +/- **4210'**. Load hole down tubing w/ 19 bbls 2% KCL for logging and perforating. Set pkr @ +/- **2972'**. RU stimulation company. Pressure test surface lines to **4000** psi and pressure test CIBP to **3000** psi (80% of burst of 4-1/2" 10.79# csg). RD stimulation company. Release pkr and TOOH w/ workstring and pkr. RU wireline w/ packoff and pump in tee. RIH w/ GR\CCL\CBL and log from **4200'** to **3500'**\*\*. Hold **1000** psi on csg. w/ rig pump while running CBL. TOOH w/ GR\CCL\CBL logging tool. RIH w/ TDT logging tool and log from **4200'** to **3500'**\*\*. TOOH w/ TDT logging tool.

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\*\* Correlate to IL\GR log.

**1<sup>st</sup> Stage – Lower Lewis Shale**

5. RIH w/ CCL on top of perforating guns\*\*. Perforate the Lower Lewis Shale interval with **3-1/2" HPG gun system w/ 37J UJ HMX charges**. These are 34 gram charges with a 0.46" hole and 34.0" penetration. Shoot 60 holes bottom up in two (2) gun runs @ **2 SPF 60° Phase** in 2% KCL at the following depths: **1<sup>st</sup> gun run – 5' gun @ 4168'-4163'\*\*\***, **5' gun @ 4144'-4139'\*\*\***, **2<sup>nd</sup> gun run – 10' gun @ 4090'-4080'\*\*\***, **10' gun @ 4050'-4040'\*\*\***. RD wireline company.

\*\* NOTE: Tie into new TDT log.

**\*\*\*NOTE: Perforation intervals may change after review of the TDT log. Contact Steve Campbell, Hans Dube, or Glen Christiansen for final perforation intervals.**

6. TIH w/ 4-1/2" fullbore pkr and 127 jts. 2-3/8" 4.7# J-55 workstring and set @ +/- **3940'**. RU stimulation company. Pressure test surface lines to **4000 psi**. Breakdown perforations @ 5-6 BPM w/ tbg. volume of 2% KCL (approximately 15 BBL). Displace w/ 300 gal. of 10% Acetic Acid + 5% NH<sub>4</sub>CL\*\* dropping seventy-eight (78) 7/8" 1.1 SG RCN balls evenly displaced through acid. Displace acid w/ approximately 18 BBL of 2% KCL to bottom perforation. Balloff to maximum pressure of **3000 psi** (80% of burst in 4-1/2" 10.79# csg). Record breakdown pressure, ball action and ISIP. Release pkr and knock ball off of perforations.

\*\* All Acid to contain the following additives/ 1000 gal:

1000 gal	10%	Acetic Acid
2 gal	MSA II	corrosion inhibitor
5%	NH <sub>4</sub> CL	clay control

7. TOOH w/ 4-1/2" fullbore pkr and approximately 127 jts. 2-3/8" 4.7# J-55 workstring. Stand back workstring and laydown pkr.
8. Pick-up 4-1/2" fullbore Model **Arrowset 1X 10K COMPRESSION SET** pkr, 2 jts. 2-7/8" 6.4# N-80 **BUTTRESS**, 2-7/8" N-80 **BUTTRESS X 3-1/2"** 8rd changeover swage and 93 jts. 3-1/2" 9.3# N-80 fracstring. Set pkr @ +/- **2972'**. (Refer to tubing movement calculation enclosed. This will determine how much shrinkage will occur in tubulars.)
9. RU stimulation company to frac down fracstring and 4" frac valve. Hold pre-job safety meeting with all personnel on location. Pressure test surface lines to **9000 psi** prior to stimulation.\*\*

**\*\*NOTE: HAVE PRE-JOB SAFETY MEETING WITH ALL PERSONNEL ON LOCATION. USE CO<sub>2</sub> APPROVED PUMPING EQUIPMENT ONLY. REVIEW CONTINGENCY PLANS FOR POSSIBLE JOB MALFUNCTIONS WITH ALL PERSONNEL.**

10. Fracture stimulate in 0.6 to 3.0 ppg stages @ 35 BPM constant downhole rate with 134 tons of Liquid CO<sub>2</sub> and 47,500 lbs. 40/70 mesh sand. When enclosed blender is empty, call flush. Flush to top perf @ +/- **4040'** with Liquid CO<sub>2</sub>. Refer to frac schedule enclosed. Maximum bottomhole treating pressure is **3000 psi** (80% of burst in 4-1/2" 10.79# csg). Estimated friction pressure is approximately **5119 psi @ 35 BPM**. Maximum surface treating pressure is **8000 psi**. **Leave csg. valve open and monitor annulus pressure in treating van.**

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11. Record ISIP, 5, 10 and 15 shut-in pressure. Shut-in frac valve. RD stimulation company. Install flowback line above frac valve. Lay flowback line to dual-choke manifold and pit. Begin flowback after stimulation company has rigged down from frac valve. Open well to pit on accordance to flowback schedule listed in the table below. Do not shut well in during flowback. When schedule dictates a larger choke size, open ball valve upstream of adjustable choke and open adjustable choke on manifold to pre-determined size listed in table and begin flowing through adjustable choke. Close ball valve upstream of positive flow bean and change out flow bean to next larger size in table. Open ball valve upstream of positive flow bean and begin flowing. Close ball valve upstream of adjustable choke and close adjustable choke.

<b>16/64" Choke</b>	<b>From Shut-in to 900 psi</b>
<b>20/64" Choke</b>	<b>From 900 psi to 750 psi</b>
<b>24/64" Choke</b>	<b>From 750 psi to 600 psi</b>
<b>32/64" Choke</b>	<b>From 600 psi to 400 psi</b>
<b>48/64" Choke</b>	<b>From 400 psi to 100 psi</b>

12. After well cleans up and pressures allow, release pkr and TOOH standing back 93 jts. 3-1/2" 9.3# N-80, 3-1/2" 8rd X 2-7/8" N-80 **BUTTRESS** changeover swage and 2 jts. 2-7/8" 6.4# N-80 **BUTTRESS** frac string.

**2<sup>nd</sup> Stage – Upper Lewis Shale**

13. TIH w/ 4-1/2" CIBP, on/off tool, 4-1/2" fullbore pkr and approximately 129 jts. 2-3/8" 4.7# J-55 workstring and tubing set CIBP @ +/- **4000'**. Load hole down tubing w/ 16 bbls 2% KCL for perforating. Set pkr @ +/- **2972'**. RU stimulation company. Pressure test surface lines to **4000** psi and pressure test CIBP to **3000** psi (80% of burst of 4-1/2" 10.79# csg). RD stimulation company. Release pkr and TOOH w/ workstring and pkr.
14. RIH w/ CCL on top of perforating guns\*\*. Perforate the Upper Lewis Shale interval with **3-1/2" HPG gun system w/ 37J UJ HMX charges**. These are 34 gram charges with a 0.46" hole and 34.0" penetration. Shoot 80 holes bottom up in two (2) gun runs @ **2 SPF 60° Phase** in 2% KCL at the following depths: **1<sup>st</sup> gun run** - 10' gun @ **3954'-3944'\*\*\***, 5' gun @ **3914'-3909'\*\*\***, 5' gun @ **3893'-3888'\*\*\***. **2<sup>nd</sup> gun run** - 5' gun @ **3794'-3789'\*\*\***, 5' gun @ **3781'-3776'\*\*\***, 5' gun @ **3635'-3630'\*\*\***, 5' gun @ **3618'-3613'\*\*\***. RD wireline company.

\*\* NOTE: Tie into IL\GR log.

\*\*\*NOTE: Perforation intervals may change after review of the TDT log. Contact Steve Campbell, Hans Dube, or Glen Christiansen for final perforation intervals.

15. TIH w/ 4-1/2" fullbore pkr and 112 jts. 2-3/8" 4.7# J-55 workstring and set @ +/- **3500'**. RU stimulation company. Pressure test surface lines to **4000** psi. Breakdown perforations @ 5-6 BPM w/ tbg. volume of 2% KCL (approximately 13 BBL). Displace w/ 300 gal. of 10% Acetic Acid + 5% NH<sub>4</sub>CL\*\* dropping one-hundred four (104) 7/8" 1.1 SG RCN balls evenly displaced through acid. Displace acid w/ approximately 20 BBL of 2% KCL to bottom perforation. Balloff to maximum pressure of **3000** psi (80% of burst in 4-1/2" 10.79# csg). Record breakdown pressure, ball action and ISIP. Release pkr and knock ball off of perforations.

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**\*\* All Acid to contain the following additives/ 1000 gal:**

1000 gal	10%	Acetic Acid
2 gal	MSA II	corrosion inhibitor
5%	NH <sub>4</sub> CL	clay control

16. TOOH w/ 4-1/2" fullbore pkr and approximately 112 jts. 2-3/8" 4.7# J-55 workstring. Stand back workstring and laydown pkr.
17. Pick-up 4-1/2" fullbore Model **Arrowset 1X 10K COMPRESSION SET** pkr, 2 jts. 2-7/8" 6.4# N-80 **BUTTRESS**, 2-7/8" N-80 **BUTTRESS** X 3-1/2" 8rd changeover swage and 93 jts. 3-1/2" 9.3# N-80 fracstring. Set pkr @ +/- **2972'**. (Refer to tubing movement calculation enclosed. This will determine how much shrinkage will occur in tubulars.)
18. RU stimulation company to frac down fracstring and 4" frac valve. Hold pre-job safety meeting with all personnel on location. Pressure test surface lines to **9000** psi prior to stimulation.\*\*

**\*\*NOTE: HAVE PRE-JOB SAFETY MEETING WITH ALL PERSONNEL ON LOCATION. USE CO<sub>2</sub> APPROVED PUMPING EQUIPMENT ONLY. REVIEW CONTINGENCY PLANS FOR POSSIBLE JOB MALFUNCTIONS WITH ALL PERSONNEL.**

19. Fracture stimulate in 0.6 to 3.0 ppg stages @ 35 BPM constant downhole rate with 132 tons of Liquid CO<sub>2</sub> and 47,500 lbs. 40/70 mesh sand. When enclosed blender is empty, call flush. Flush to top perf @ +/- **3613'** with Liquid CO<sub>2</sub>. Refer to frac schedule enclosed. Maximum bottomhole treating pressure is **3000** psi (80% of burst in 4-1/2" 10.79# csg). Estimated friction pressure is approximately **5025** psi @ 35 BPM. Maximum surface treating pressure is **8000** psi. **Leave csg. valve open and monitor annulus pressure in treating van.**
20. Record ISIP, 5, 10 and 15 shut-in pressure. Shut-in frac valve. RD stimulation company. Install flowback line above frac valve. Lay flowback line to dual-choke manifold and pit. Begin flowback after stimulation company has rigged down from frac valve. Open well to pit on accordance to flowback schedule listed in the table below. Do not shut well in during flowback. When schedule dictates a larger choke size, open ball valve upstream of adjustable choke and open adjustable choke on manifold to pre-determined size listed in table and begin flowing through adjustable choke. Close ball valve upstream of positive flow bean and change out flow bean to next larger size in table. Open ball valve upstream of positive flow bean and begin flowing. Close ball valve upstream of adjustable choke and close adjustable choke.


<b>16/64" Choke</b>	<b>From Shut-in to 900 psi</b>
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<b>32/64" Choke</b>	<b>From 600 psi to 400 psi</b>
<b>48/64" Choke</b>	<b>From 400 psi to 100 psi</b>

21. After well cleans up and pressures allow, release pkr and TOOH laying down 93 jts. 3-1/2" 9.3# N-80, 3-1/2" 8rd X 2-7/8" N-80 **BUTTRESS** changeover swage and 2 jts. 2-7/8" 6.4# N-80 **BUTTRESS** frac string.
22. TIH w/ 3-7/8" flat mill on 2-3/8" 4.7# J-55 workstring and clean-up to CIBP @ +/- **4000'** with air/mist. When well is sufficiently clean, gauge the Upper Lewis interval for one (1) hour. Obtain an accurate pitot gauge for the Upper Lewis interval.

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23. Drill out CIBP @ +/- 4000' w/ 3-7/8" flat mill on 2-3/8" workstring. Use minimum mist rate of 10-12 BPH.
24. Clean up to CIBP @ +/- 4210' w/ air/mist. When well is sufficiently clean, gauge the entire Lewis interval for one (1) hour.
25. Drill out CIBP @ +/- 4210' w/ 3-7/8" flat mill on 2-3/8" workstring w/ air/mist and CO to PBTD @ 5210'\*\*. TOOH w/ 2-3/8" 4.7# J-55 workstring and stand back. Lay down 3-7/8" flat mill.  
  
**\*\*NOTE:** If tbg. was scaled-up, acid wash the existing Cliffhouse and Point Lookout perforations w/ treatment specified by service company.
26. Broach in tubing on sandline. TIH w/ 2-3/8" purge valve, 1 jt. 2-3/8" 4.7# J-55 tubing, 1-2-3/8" X 4' 4.7# J-55 perforated pup jt., 2-3/8" EUE 8rd tbg collar, 2-3/8" X 12" seating nipple (1.78 I.D. bore), 2-3/8" EUE 8rd tbg collar, then the remaining 2-3/8" production tubing. Once on depth, space out w/ full jt 2-3/8" 4.7# J-55 tbg above spacing pup jts. Land tubing @ 5130'.
27. RU Protechnics to run tracer survey log. Log from 4200' to 3600'. POOH w/ logging tool. RD Protechnics.
28. TIH w/ 8' sand screen, magnetic fluid conditioner tool, 2 X 1-1/4" X 10' RHAC bottomhole pump, 203- 3/4" Class "D" rods w/ slimhole coupl., 3/4" x 7/8" slimhole changeover coupl., 7/8" pin X 1-1/4" X 22' polish rod and 1-1/2" X 10' polish rod liner. Seat bottomhole pump assy in seating nipple and space out pump.
29. ND BOP's, NU wellhead w/ 2-3/8" EUE 8rd X 2" 11-1/2" V Reg. X 2-3/8" EUE 8rd Fig. 38 Skinner pumping tee, 2-3/8" EUE 8rd Skinner BOP, 2-3/8" EUE 8rd Fig. 800 Skinner Dual Packed Stuffing Box. RD and release rig. Set pumping unit and attach polish rod clamps to polish rod. Place well on production.

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Approve:  1/5/99  
Team Leader

Approve:  1/6/99  
Drilling Superintendent

Recommend:  1/5/99  
Production Engineer

VENDORS:

Wireline:	Schlumberger	325-5006
Stimulation:	Halliburton	324-3500
Enclosed Blender:	Universal Resources	1-800-935-2837
Liquid CO <sub>2</sub> :	BOC Gases	1-800-448-5988
Packer:	Arrow Completion Systems	326-5141
Bridge Plug:	Arrow Completion Systems	326-5141
Flat Mill:	Arrow Completion Systems	326-5141
Rod Pump:	Energy Pump	564-2874
Purge Valve	Energy Pump	564-2874
Magnetic Fluid Conditioner	Energy Pump	564-2874

Steve Campbell      Home 325-8218  
Glen Christiansen      Home 327-5089  
Hans Dube      Home 564-9401

Office 326-9546  
Office 326-9733  
Office 326-9555

Pager 564-1902  
Pager 324-7562