

submitted in lieu of Form 3160-5

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

910' FSL, 900' FWL, Sec. 11, T-30-N, R-10-W, NMPM

5. Lease Number

SF-03195

6. If Indian, All or
Tribe Name

7. Unit Agreement Name

8. Well Name & Number
Sunray H #3

9. API Well No.
30-045-21135

10. Field and Pool
Blanco PC

11. County and State
San Juan Co, NM

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

Type of Submission

Type of Action

☒ Notice of Intent

☐ Abandonment

☐ Change of Plans

☐ Subsequent Report

☐ Recompletion

☐ New Construction

☐ Final Abandonment

☐ Plugging Back

☐ Non-Routine Fracturing

☐ Casing Repair

☐ Water Shut off

☐ Altering Casing

☐ Conversion to Injection

☒ Other - Restimulation

13. Describe Proposed or Completed Operations

It is intended to restimulate the subject well according to the attached procedure and wellbore diagram.

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

Signed [Signature] Title Regulatory Administrator Date 7/22/99
trc

(This space for Federal or State Office use)

APPROVED BY /s/ Duane W. Spencer Title Team Lead, Petroleum Management Date JUL 26 1999

CONDITION OF APPROVAL, if any:

Title 18 U.S.C. Section 1301, makes it a crime for any person knowingly and willfully to make any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

31000

Sunray H #3
Pictured Cliffs Slimhole Restimulation Procedure
M 11 30N 10W
San Juan County, N.M.
Latitude: 36 Deg, 49.28 Min
Longitude: 107 Deg, 51.54 Min
API # 300452113500

Summary:

The subject well is a 1973 Pictured Cliffs slimhole completion through 2 7/8" casing. The casing did not test when the initial attempt to restimulate this well was done. The casing leak will now be isolated and a free point will be run to determine if casing is free below the leak. If so, the casing will be backed off as deep as possible. New casing will be run and tied back in and a bond log will be run. If the BLM requires a squeeze job the procedure will be written at that time. The new casing will then be pressure tested to 3700 psi and the cased hole interval will be cleaned-out to PBTD at 3324' using air-mist and 1-1/4" drillstring. The Pictured Cliffs will be restimulated with 56,910 gal of 70Q N₂ foamed 30# linear guar gel and 175,000# 20/40 mesh sand. The well will then be cleaned-up and returned to production. This well will be completed as a Type "B" well.

- 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.

Casing Repair

1. MOL, hold safety meeting, and RU completion rig. Insure all safety equipment is strategically located and functioning properly. NU relief lines to blow pit. ND wellhead and NU 7-1/16" 3M BOP, stripping head, and blooie line. Test BOP.
2. PU and TIH with a 2-7/8" RBP and 1-1/4" tubing. Set RBP above top perf (3,224'). Release from BP. Spot 10' of sand on BP. TOOH.
3. PU 1 jt. 2-7/8" tubing and screw into casing. MIRU wireline specialties. Freepoint 2-7/8" casing.
4. PU 2-7/8" packer. TIH with 2-7/8" packer on 1-1/4" tubing. Set packer above bridge plug and test to 3700 psi. Release packer, TOOH, and set packer at lowest 100% freepoint in casing. Pressure test casing to 3700 psi below and above packer. If casing leak is below packer, RDMO. If leak is above packer continue with step 5. Release packer and TOOH.
5. RIH with stringshot. Back off casing at lowest joint 100% free. RDMO wireline specialties.
6. Circulate hole clean. TOOH and lay down old 2-7/8" casing.
7. PU and TIH with new 2-7/8" casing. Screw in to existing casing.
8. Pressure test casing to 3700 psi for 15 minutes. (If casing can not be screwed into or pressure tested to 3700 psi on first attempt contact Drilling Superintendent and Production Engineer to discuss procedure to run a Bowen casing patch.)
9. TIH with 1-1/4" tubing. Clean out to top of RBP. Latch on to 2-7/8" RBP and TOOH. Lay down RBP. TIH. CO to PBTD. TOOH and lay down 1-1/4" tubing.
10. RDMO.

RIGLESS PROCEDURE

11. Install 2 7/8 In. 6.5 # N-80 EUE 8rd sub and 5000 psi frac valve. Lay flowback line to pit.
12. Set two (2) 400 bbl frac tank(s) on location and fill with 720 bbl 2% KCl water. Treat tank with biocide prior to filling. Heat gel tank to 60-70 °F in winter.

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13. RU stimulation company to frac down 2 7/8" casing. Hold pre-job safety meeting with all personnel on location. Pressure test surface lines to 4700 psi for 15 minutes. Breakdown perforations by bullheading 200 gals 15% inhibited acid ahead of fracture stimulation. Acid will contain the following additives:

- 1 gal/M HAI-81M (corrosion inhibitor)
- 1 gal/M SSO-21M (surfactant)

Fracture stimulate in 1.0 to 4 ppg stages at 35 BPM constant downhole rate with 56,910 gal of 70Q N₂ foamed 30# linear guar gel and 175,000# 20/40 mesh Arizona sand. **Maintain a bottom hole frac gradient of 0.65 psi/ft throughout job.** When sand is in hopper and the concentration begins to drop, call flush. **Maintain previous stage's slurry and N₂ rates. Quick flush to 100 ft. above top perforation with +/- 345 fluid gals.** Maximum treating pressure is 3700 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>Foam Volume (gal)</u> | <u>Clean Gel Volume (gal)</u> | <u>Sand Volume (lbs)</u> | <u>Type</u> |
|---------------|--------------------------|-------------------------------|--------------------------|-------------|
| Pad | 3,100 | 930 | 0 | |
| 1 ppg | 2,000 | 627 | 2,000 | 20/40 Az |
| 2 ppg | 3,000 | 982 | 6,000 | 20/40 Az |
| 3 ppg | 25,200 | 8,594 | 75,600 | 20/40 Az |
| 4 ppg | 22,850 | 8,105 | 91,400 | 20/40 Az |
| Flush | (760) | (345 @ 55% N ₂) | 0 | |
| Totals | 56,910 | 19,584 | 175,000 | |

Treat frac fluid with the following additives per 1000 gallons:

- 30# WG-19 (Gelling agent pre-mixed in full tank)
- 2.0 gal SSO-21M (Non-ionic surfactant pre-mixed in full tank)
- 0.5# GBW-3 (Enzyme breaker mixed on fly)
- 3.0 gal AQF-2 (Foamer mixed on fly)
- 0.18# BE-6 (Bactericide pre-mixed in full tank)
- 0.25 gal BA-20 (pH buffer mixed on fly)

14. Shut well in after frac and record ISIP. Empty remaining fluid in frac tanks to pit and RD stimulation company. Install flowback line above frac valve. Wait for 30 minutes to 1 hour before commencing flowback. Open well to pit in accordance to **flowback schedule enclosed in procedure**. If choke plugs off, shut well in and remove obstruction from choke and return to flowback schedule. **Do not replace with next larger choke size until schedule dictates.** Continue cleaning well up until fluid returns are negligible. **Take pitot gauges when possible.**

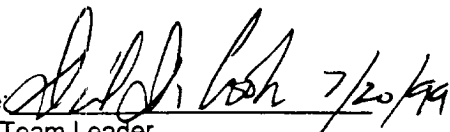
15. ND flowback line, frac valve, and isolation tool. NU production valve with flow tee. NU flowback line.

SWAB RIG CLEAN-UP

16. MIRU Silver Star. PU and RIH with 2 1/4" sand bailer. CO to PBTD at 3324'. Monitor gas and water returns. **Take pitot gauges when possible.**

17. Continue cleaning up after frac until sand returns are a trace and fluid recovery is less than 2 BPH. TOOH. **Take final pitot gauge.**

18. RD and release swabbing unit.

Approve:  7/20/99
Team Leader

Approve: _____
Drilling Superintendent

VENDORS:

| | | |
|----------------|----------------------|----------|
| Wireline: | Wireline Specialties | 327-7141 |
| Fishing Tools: | Baker | 327-3266 |
| Stimulation: | Halliburton | 325-3575 |
| Cement: | Cementers Inc. | 632-3683 |

| | | |
|--|------------|----------|
| Isolation Tool, Frac Valve, & Flowback Line: | Dean Lingo | 330-0144 |
|--|------------|----------|

| | | | |
|--------------|-------------------|-----------------|------------------|
| Scott Dobson | Office - 326-9813 | Home - 564-3244 | Pager - 326-8036 |
| Marvin Webb | Office - 326-9892 | Home - 326-3659 | Pager - 564-1662 |

**Nitrogen Foam Stimulation Procedure
Burlington Resources**

General Information

Well Configuration

Formation & Stimulation Data

| | | |
|---|-------------------------------|---------------------------------|
| Well Name: Sunray H #3 | Csg: 2 7/8", 6.5# J-55 | Frac Gradient: 0.65 psi/ft |
| Location: M 11 T30N R10W | Tbg: Packer @ ft | BH Temp: 100 deg. F |
| Formation: Pictured Cliffs | Capacity: 0.00579 bbl/ft Tbg | Antic. BH Treating: 2,109 psi |
| Vendors | | Antic. Surf. PSI: 3,000 psi |
| Stimulation: Halliburton | PBTD: 3,324 ft Vol to: (gals) | Foam Quality: 70% |
| Tagging: | T Perf: 3,224 ft - 100' 760 | Nitrogen GLR: 1,731 scf/bbl |
| | B Perf: 3,264 ft T Perf: 784 | BH Foam Rate: 35 bpm |
| Fluid: 70Q N2 Foamed 30# Linear Gel | Midpnt: 3,244 ft B Perf: 794 | Percent Pad: 6% |
| Note: Water is city water @ pH of 7.3 with 2% KCl (supplied by BR) | Perforations | Net Pay: 70 ft |
| | 1 spf 0.31 " holes | lb prop/net ft pay: 2,500 lb/ft |
| | 60 holes 18.00 "penetration | Job Duration: 44.1 min |

Stimulation Schedule

Constant Internal Phase Foam Frac

| Stage | BH Sand Conc. ppg | Sand Mesh | Stage Sand lbs | BH Rate bpm | BH Foam Qual. | Clean Foam Volume gallons | Clean Liquid Volume gallons | Stage Clean Rate bpm | Blender Sand Conc. ppg | Stage Slurry Volume gallons | Slurry Rate bpm | Nitrogen Rate scf/min | Stage Nitrogen mscf | Stage Time min |
|-------|-------------------|-----------|----------------|-------------|---------------|---------------------------|-----------------------------|----------------------|------------------------|-----------------------------|-----------------|-----------------------|---------------------|----------------|
| Pad | | | 0 | 35 | 70% | 3,100 | 930 | 10.5 | 0.00 | 930 | 10.5 | 18,175 | 38.3 | 2.1 |
| 2 | 1 | 20/40 | 2,000 | 35 | 70% | 2,000 | 627 | 10.5 | 3.19 | 719 | 12.0 | 17,042 | 24.2 | 1.4 |
| 3 | 2 | 20/40 | 6,000 | 35 | 70% | 3,000 | 982 | 10.5 | 6.11 | 1,256 | 13.4 | 16,005 | 35.6 | 2.2 |
| 4 | 3 | 20/40 | 75,600 | 35 | 70% | 25,200 | 8,594 | 10.5 | 8.80 | 12,042 | 14.7 | 15,050 | 293.3 | 19.5 |
| 5 | 4 | 20/40 | 91,400 | 35 | 70% | 22,850 | 8,105 | 10.5 | 11.28 | 12,273 | 15.9 | 14,169 | 260.4 | 18.4 |
| Flush | | | 0 | 35 | 55% | 760 | 345 | 15.9 | 0.00 | 345 | 15.9 | 14,169 | 7.3 | 0.5 |
| | | | Total lbs. | Avg. Rate | Avg. Qual. | Total Gallons | Total Gallons | Avg. Rate | Avg. SC | Total Gallons | Avg. Rate | Avg. N2 Rate | Total mscf | Total Time |
| | | | 175,000 | 35 | 67% | 56,910 | 19,584 | 11.4 | 7.34 | 27,564 | 13.7 | 15768 | 659.3 | 44.1 |

Schedule maintains constant bottom hole rate.

Volume & Additives

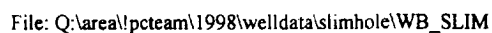
Equipment

| | |
|---|--|
| Water Volume: 19,584 treat + 1,958 excess = 21,543 gals. | Tanks: 2 x 400 bbl frac tanks (supply by BR) |
| Water Volume: 466 treat + 47 excess = 513 bbls. | Water: 513 bbls 2% KCl water (supply by BR) |
| Fluid Volume: 513 bbls needed for stimulation | Computer Van |
| 20/40 Arizona Sand: 175,000 lbs | Sand Master |
| Nitrogen Volume: 659.3 mscf (w/o cooldown) | Blender |
| Base Fluid: 30# linear guar gel in 2% KCl (BR), pre-mixed in tank | Fluid pumps as required |
| Foamer: 3 gal/M (mix on fly) | Nitrogen pumps as required |
| Breaker: 0.5#/M enzyme (mix on fly) | Quality Control Equipment |
| Bactericide: 0.18#/M added to each tank prior to filling with water | |
| Acid: 200 gal 15% HCl with additives (see procedure) | |
| Radioactive Tagging | |
| None None None | |

Comments & Special Instructions

| | |
|---|------------------|
| MAXIMUM ALLOWABLE TREATING PRESSURE IS: | 3,700 PSI |
| Hold safety meeting with everyone on location before pressure testing surface lines. | |
| Pressure test surface lines to 1000 psi over max allowable pressure but less than working pressure. | |
| Mileage - 45 miles one way | |
| RTS at 7 am on day #1 | |

Blanco Pictured Cliffs Field Wellbore Schematic



PICTURED CLIFFS
FLOW BACK TABLE

| Well head Pressure, psi | Choke Size, x/64 in. |
|------------------------------------|---------------------------------|
| over 700 | 8 |
| 700 | 10 |
| 450 | 12 |
| 300 | 14 |
| 200 | 18 |
| 100 | 32 |

Well should be flowed back according to the above schedule.

Once the lower pressure is obtained, or if the well is blowing dry, the next larger choke size should be used.

Once the Well Head pressure drops below 100 psi, choke sizes should be gradually increased from 32 to 48.

Maximum Choke size to be used during flowback and sand bailer operation is 48/64". No larger choke should be used.