submitted in lieu of Form 3160-5

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

99 JUL 22 PM 1:46

070 FARMINGTON, NM

Sundry Notices and Reports on Wells

5. **Lease Number**
SF-077382

1. **Type of Well**
GAS

6. **If Indian, All. or Tribe Name**

7. **Unit Agreement Name**

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

8. **Well Name & Number**
Hargrave #4

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

9. **API Well No.**
30-045-20333

4. **Location of Well, Footage, Sec., T, R, M**
800'FNL, 800'FWL, Sec.4, T-27-N, R-10-W, NMPM

10. **Field and Pool**
Fulcher Kutz 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	
_X_ Notice of Intent	___ Abandonment	___ Change of Plans
	___ Recompletion	___ New Construction
___ Subsequent Report	___ Plugging Back	___ Non-Routine Fracturing
	___ Casing Repair	___ Water Shut off
___ Final Abandonment	___ Altering Casing	___ Conversion to Injection
	_X_ Other - Restimulation	

13. **Describe Proposed or Completed Operations**

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

RECEIVED
JUL 28 1999
OIL CON. DIV.
DIST. 3

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 Engineering Date JUL 26 1999
CONDITION OF APPROVAL, if any:

Title 18 U.S.C. Section 1001, 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.

NMOCD

Hargrave #4
Pictured Cliffs Slimhole Restimulation Procedure
D 4 27N 10W
San Juan County, N.M.
Latitude: 36 Deg, 36.53 Min
Longitude: 107 Deg, 54.39 Min
API # 300452033300

Summary:
The subject well is a 1968 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 2,130' using air-mist and 1-1/4" drillstring. The Pictured Cliffs will be restimulated with 32,221 gal of 70Q N_2 foamed 30# linear guar gel and 85,000# 20/40 mesh sand. The well will then be cleaned-up and returned to production. This well will be completed as a Type "A" 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 (2,038'). 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 480 bbl 2% KCl water. Treat tank with biocide prior to filling. Heat gel tank to 60-70 °F in winter.

Hargrave #4
Pictured Cliffs Slimhole Restimulation Procedure
D 4 27N 10W
San Juan County, N.M.
Latitude: 36 Deg, 36.53 Min
Longitude: 107 Deg, 54.39 Min
API # 300452033300

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 32,221 gal of 70Q N_2 foamed 30# linear guar gel and 85,000# 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 +/- 214 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:

Stage	Foam Volume (gal)	Clean Gel Volume (gal)	Sand Volume (lbs)	Type
Pad	1,750	525	0	
1 ppg	5,000	1,568	5,000	20/40 Az
2 ppg	5,000	1,637	10,000	20/40 Az
3 ppg	10,000	3,410	30,000	20/40 Az
4 ppg	10,000	3,547	40,000	20/40 Az
Flush	(471)	(214 @ 55% N2)	0	
Totals	**32,221**	**10,902**	**85,000**	

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 (Bacteriacide 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 2,130'. 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: David D. Cole 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	
IsolationTool, 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 Name:	Hargrave #4
Location:	D 04 T27N R10W
Formation:	Pictured Cliffs
Vendors	
Stimulation:	Halliburton
Tagging:	
Fluid:	70Q N2 Foamed 30# Linear Gel
Note:	Water is city water @ pH of 7.3 with 2% KCl (supplied by BR)

Well Configuration

Csg:	2 7/8", 6.5# J-55		
Tbg:	Packer @		ft
Capacity:		bbl/ft	Tbg
	0.00579	bbl/ft	Csg
PBTD:	2,130 ft	Vol to: (gals)	
T Perf:	2,038 ft	- 100'	471
B Perf:	2,062 ft	T Perf:	496
Midpnt:	2,050 ft	B Perf:	501
Perforations			
1 spf		0.31 " holes	
24 holes		18.00 "penetration	

Formation & Stimulation Data

Frac Gradient:	0.65 psi/ft
BH Temp:	100 deg. F
Antic. BH Treating:	1,333 psi
Antic. Surf. PSI:	3,000 psi
Foam Quality:	70%
Nitrogen GLR:	1,127 scf/bbl
BH Foam Rate:	35 bpm
Percent Pad:	6%
Net Pay:	70 ft.
lb prop/net ft pay:	1,214 lb/ft
Job Duration:	24.6 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%	1,750	525	10.5	0.00	525	10.5	11,837	14.1	1.2
2	1	20/40	5,000	35	70%	5,000	1,568	10.5	3.19	1,796	12.0	11,100	39.5	3.6
3	2	20/40	10,000	35	70%	5,000	1,637	10.5	6.11	2,093	13.4	10,424	38.7	3.7
4	3	20/40	30,000	35	70%	10,000	3,410	10.5	8.80	4,778	14.7	9,802	75.8	7.7
5	4	20/40	40,000	35	70%	10,000	3,547	10.5	11.28	5,371	15.9	9,229	74.2	8.0
Flush			0	35	55%	471	214	15.9	0.00	214	15.9	9,229	3.0	0.3
			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
			85,000	35	67%	32,221	10,902	11.4	7.34	14,778	13.7	10270	245.2	24.6

Schedule maintains constant bottom hole rate.

Volume & Additives

Water Volume:	10,902 treat +	1,090 excess =	11,992 gals.
Water Volume:	260 treat +	26 excess =	286 bbls.
Fluid Volume:	286 bbls needed for stimulation		
20/40 Arizona Sand:	85,000 lbs		
Nitrogen Volume:	245.2 mscf (w/o cooldown)		
Base Fluid:	30# linear guar gel in 2% KCl (BR), pre-mixed in tank		
Foamer:	3 gal/M (mix on fly)		
Breaker:	0.5#/M enzyme (mix on fly)		
Bacteriacide:	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

Equipment

Tanks:	1 x 400 bbl frac tanks (supply by BR)
Water:	286 bbls 2% KCL water (supply by BR)
Computer Van	
Sand Master	
Blender	
Fluid pumps as required	
Nitrogen pumps as required	
Quality Control Equipment	

Comments & Special Instructions

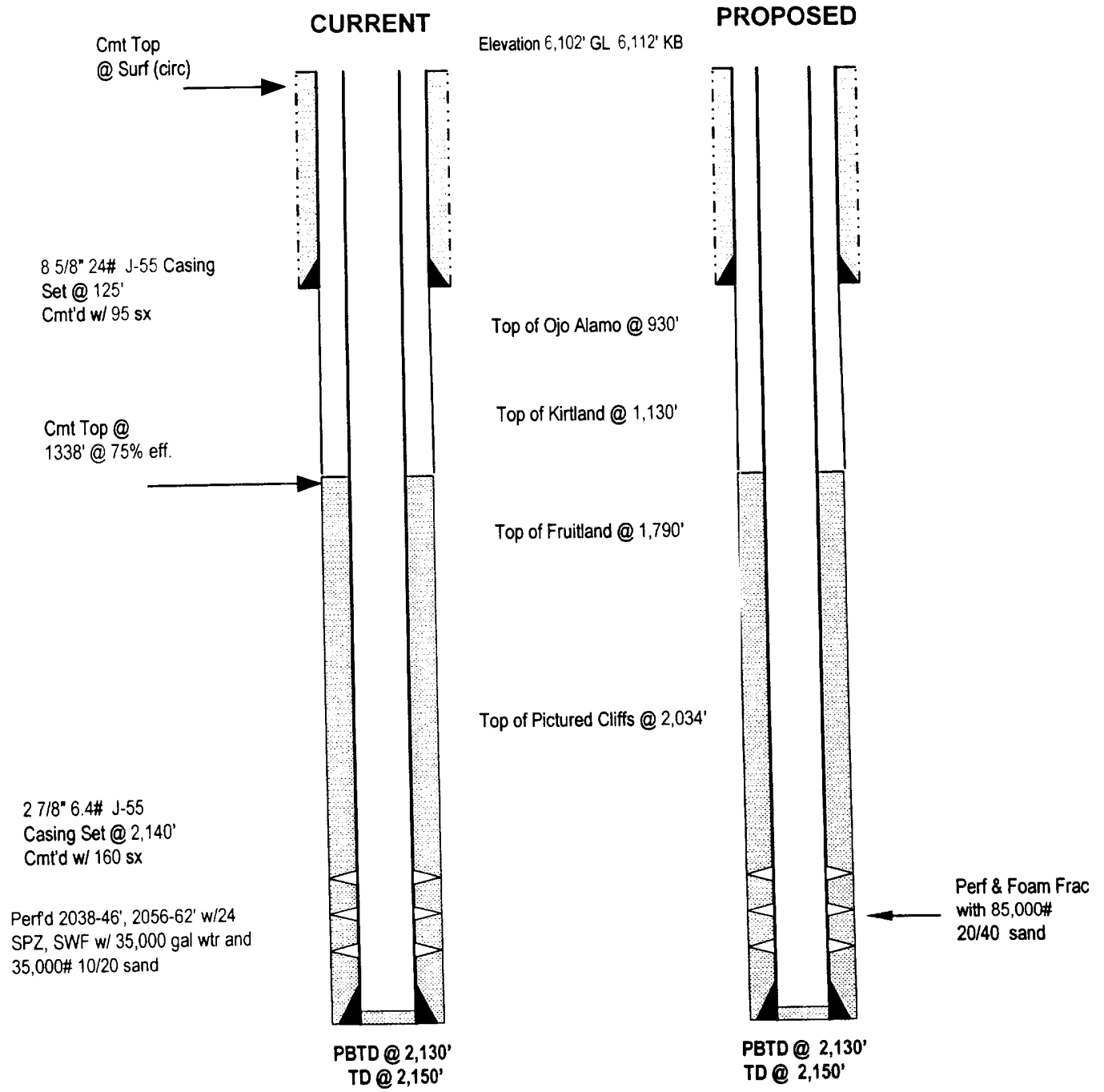
MAXIMUM ALLOWABLE TREATING PRESSURE IS: **3,700 PSI**

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

Hargrave #4

Section 4 D, T-27 -N R-10 -W
San Juan, New Mexico

Fulcher Kutz Pictured Cliffs Field
Wellbore Schematic



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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.