

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

1850' FNL, 1660' FEL, Sec. 21, T-31-N, R-12-W, NMPM

5. Lease Number

SF-077651

6. If Indian, All. or
Tribe Name

7. Unit Agreement Name

8. Well Name & Number

Richardson SRC #5

9. API Well No.

30-045-10580

10. Field and Pool

Blanco MV/Basin DK

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 - Pay add and commingle

13. Describe Proposed or Completed Operations

It is intended to add pay to the Mesaverde formation of the subject well according to the attached procedure and wellbore diagram. The well will then be down hole commingled. A down hole commingle order will be applied for.

RECEIVED
JAN 12 1998

OIL CON. DIV.
DIST. 3

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

Signed Deanne W. Spencer (SCOpps) Title Regulatory Administrator Date 12/30/97

(This space for Federal or State Office use)

APPROVED BY AS/ Duane W. Spencer

Title _____

Date JAN - 8 1998

CONDITION OF APPROVAL, if any:

NMOCD

**Richardson SRC #5
Mesa Verde Payadd Procedure
G 21 31N 12W
San Juan County, NM
Latitude: 36 Deg., 53.19 Min
Longitude: 108 Deg., 5.90 Min.**

Summary:

The subject well is a 1998 Mesa Verde payadd in 4-1/2" casing. This well was originally drilled in 1959 and was completed in the Mesaverde Formation. The Richardson SRC #5 was worked over in 1965 when the well was deepened and 4-1/2" 10.5# casing was run to surface and cemented. At this time, the Point Lookout interval was squeezed. The Dakota Formation was perforated and stimulated along with the Point Lookout interval and Cliffhouse interval during the 1965 workover. A subsequent squeeze job was done on the Cliffhouse interval due to excess water production. The Menefee interval will be added and fracture stimulated in one (1) stage with 52,913 gal of 20# crossed-linked gel and 145,000# 20/40 mesh sand. The well will then be cleaned-up 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.

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. Set five (5) 400 BBL frac tanks and fill w/ 2% KCL. Blow well down and kill well with 2% KCL water as necessary. ND wellhead and NU 7-1/16" 3M BOP, stripping head and blooie line. Test BOP.
2. Release Baker Model "D" pkr. by turning 6-8 turns to the right and then straight pull. TOOH w/ approximately 157 jts. **2-3/8" 4.7# J&L NUE 10rd tbg.****, 51' of Baker Blast jt., approximately 66 jts. **2-3/8" 4.7# J&L NUE 10rd tbg.**, sliding sleeve and Baker Model "D" pkr. Lay down pkr., sliding sleeve and blast jt. Stand back remaining tbg. Inspect tbg. and replace bad tbg. as necessary.

****NOTE:** Alert rig crew to ensure slips on rig are compatible with the 2-3/8" 4.7# J&L NUE 10 rd tbg. Change if necessary.

3. PU HE milling tool, 8 DC, bumper sub, jars and 2-3/8" EUE 8rd workstring. TIH and millout Baker Model "D" pkr. TOOH w/ pkr., milling tool, 8 DC, bumper sub, jars and workstring. Laydown pkr., 8 DC, bumper sub, jars and milling tool.
4. If tbg. appears in good condition, RU wireline company and RIH w/ 4-1/2" gauge ring. If tbg. is scaled up 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 @ 7580'. TOOH
5. RU wireline. RIH and wireline set CIBP @ +/- 6980'. POOH. RIH and wireline set CIBP @ +/- 4860'. Load hole w/ 2% KCL (77 bbl). Run GR\CCCL\CNL from 4860' to 2500'.** Send logs to office immediately to evaluate logs to determine correlation of old logs. POOH

**** Correlate to old Induction - Electric log.**

6. RU wireline company to perforate with 3-1/8" HSC gun w/ 12 gram 306T Owens charges, 17.48" penetration and 0.30 perf diameter. Perforate top down the following Menefee interval w/ total of

Richardson SRC #5
Mesa Verde Payadd Procedure
G 21 31N 12W
San Juan County, NM
Latitude: 36 Deg., 53.19 Min
Longitude: 108 Deg., 5.90 Min.

21 holes at the following depths:** 4504', 4509', 4515', 4530', 4534', 4539', 4545', 4591', 4650', 4655', 4660', 4666', 4683', 4691', 4711', 4718', 4743', 4767', 4775', 4825', 4833'.

** Correlate to old Induction - Electric log and new log suite.

7. Load annulus before breakdown w/ 35 bbl. and keep loaded during frac. Pressure annulus to 500 psi and monitor annulus pressure during breakdown and frac.
8. TIH w/ 4-1/2" fullbore pkr. and approx. 156 jts. **2-7/8" 6.4# N-80 BUTTRESS** frac string and set below bottom perforation @ 4833'. PT CIBP to 3000 psi. TOOH w/ approximately 14 jts. **2-7/8" N-80 BUTTRESS** frac string and set pkr. @ +/- 4400'. RU stimulation company. Hold pre-job safety meeting. Pressure test surface lines to **7000** psi. Breakdown perforations @ 4 BPM w/ 2% KCL. After perforations breakdown, pump 1000 gal. 15% HCL acid.** Pump acid @ 20-25 BPM. Displace acid w/ 31 bbl. of 2% KCL water to bottom perforation @ 20-25 BPM to ensure all perforations are open. Breakdown to maximum bottomhole pressure of **3800** psi. Record breakdown pressure and ISIP. Prepare to fracture stimulate. Maximum surface treating pressure is **6000** psi.

** All acid to contain the following additives/1000 gal.:

2 gal.	CI-22	corrosion inhibitor
5 gal	Ferrotrol-300L	iron control
1 gal	Flo-back 20	surfactant
0.5 gal	Clay Master-5C	clay control

9. Fracture stimulate w/ 2% KCL base frac fluid and 20# crossed-linked gel in 2.0 to 5.0 ppg stages @ 35 BPM constant downhole rate with 52,913 gal. of 20# crossed-linked gel and 145,000# 20/40 mesh sand. When sand concentration begins to drop, call flush. Flush to top perf @ 4504'**. Treat the Menefee interval per the following schedule:

<u>Stage</u>	<u>Water Vol. (gal)</u>	<u>Sand Vol. (lbs.)</u>	<u>Type</u>
Pad	12,500	0	20/40 Az
2 ppg	7,500	15,000	20/40 Az
3 ppg	8,333	25,000	20/40 Az
4 ppg	11,250	45,000	20/40 Az
5 ppg	12,000	60,000	20/40 Az
Flush	1,329	0	
Totals	52,913	145,000	

Treat frac fluid with the following additives per 1000 gallons:


* 0.12 gal/sx	(Sand Wedge)
* 0.18#/M BE-6	(Biocide)
* 5 gal/M LGC-8	(Liquid Gel Concentrate)
* 2 gal/M BC-140	(Buffer & Crosslinker)
* 1 gal/M Lo Surf 300	(Surfactant)
* 0.25-1.0 #/M SP	(Breaker)
* 0.4 mCi Sb-124	(Zero wash radioactive sand mixed on fly, 2-3 ppg sand stage)
* 0.3 mCi Sc-46	(Zero wash radioactive sand mixed on fly, 4 ppg sand stage)
* 0.3 mCi Ir-192	(Zero wash radioactive sand mixed on fly, 5 ppg sand stage)

** After 75% of flush volume has been pumped (997 gal.), cut rate to 10 BPM. If well goes on a vacuum, shut down. Otherwise, flush to top perf @ 4504'.

**Richardson SRC #5
Mesa Verde Payadd Procedure
G 21 31N 12W
San Juan County, NM
Latitude: 36 Deg., 53.19 Min
Longitude: 108 Deg., 5.90 Min.**

10. Shut in frac valve and record ISIP, 5, 10 and 15 shut-in pressure. RD stimulation company.
11. When pressures allow, release pkr. and TOOH laying down **2-7/8" 6.4# N-80 BUTTRESS** frac string.
12. TIH w/ notched collar and 2-3/8" 4.7# J-55 workstring and clean up to CIBP @ +/- 4860' with air/mist. When well is sufficiently clean (less than 1 BWPH), gauge the Menefee interval for one (1) hour. TOOH w/ notched collar and 2-3/8" workstring. Lay down notched collar. Obtain an accurate pitot gauge for the Menefee interval.
13. TIH w/ 3-7/8" bit on 2-3/8" workstring and mill up CIBP @ +/- 4860' with air/mist. Clean up existing Pt. Lookout interval. Obtain an accurate pitot gauge for the Pt. Lookout interval. Record a three (3) hour back pressure test through a test separator w/ 300 psi backpressure. (Gauge will be used for allocation formula in commingling approval.) Mill up CIBP set @ +/- 6980' and CO to PBDT @ 7169'.**

****NOTE:** If tbg. was scaled-up, as indicated in step #2 of procedure, acid wash the existing Point Lookout and Dakota perforations w/ treatment specified by service company.
14. TIH with one joint of **2-3/8" 4.7# J&L NUE 10rd** tbg w/ expendable check, a seating nipple, then the remaining 2-3/8" production tubing. Land tubing @ 6980'.
15. ND BOP's, NU tbg. hanger on wellhead. Pump off expendable check. Obtain final pitot up tbg. If well will not flow on it's own, make swab run to seating nipple. If swab run is not necessary, run a broach on slickline to ensure that the tubing is clear. RD and MOL. Return well to production.

Approve:  12/10/97
Team Leader

Approve:  12/10/97
Drilling Superintendent

Recommend:  12/10/97
Production Engineer

VENDORS:

Wireline:	Schlumberger	325-5006
Stimulation:	Halliburton	325-3575
Packer:	Arrow Completion Systems	326-5141
Bridge Plug:	Arrow Completion Systems	326-5141

Steve Campbell	Home 325-8218	Office 326-9546	Pager 564-1902
Bob Goodwin	Home 599-0992	Office 326-9713	Pager 564-7096
Jennifer Dobson	Home 564-3244	Office 326-9708	Pager 324-2461
Mike Pippin	Home 327-4573	Office 326-9848	Pager 324-2559

RICHARDSON SRC #5**Pertinent Data Sheet****Location:** 1850' FNL, 1660' FEL, Unit B. Section 21, T31N, R12W, San Juan County, New Mexico**Latitude:** 36° - 53.19**Longitude:** 108° - 5.90'**Field:** Basin Dakota**Elevation:** 6135' GL
6145' KB**TD:** 7196'**PBTD:** 7169'**Spud Date:** 06/15/59**Completed:** 07/30/59**DP No:** 66585**Lease:** NMSF-077651**GWI:** 25.00%**NRI:** 21.635%**Prop#:** 0023152**Initial Potential:** 2510 MCF/D**Casing/Liner Record:**

<u>Hole Size</u>	<u>Casing Size</u>	<u>Weight & Grade</u>	<u>Depth Set</u>	<u>Cement</u>	<u>Top/Cement</u>
12-1/4"	10-3/4"	32.35# H-40	163'	135 sx	Circ. Cmt.
8-3/4"	7"	20 & 23# J-55	5186'	95 sx	4100' (TS)
6-1/4"	4-1/2"	10.5# J-55	7195'	375 sx.	2500' (TS)

Tubing Record:

<u>Tubing Size</u>	<u>Weight & Grade</u>	<u>Depth Set</u>
2-3/8"	4.7# 10rd	4875' to Blast Joint

Formation Tops:

	Estimated		
Ojo Alamo	1630'	Point Lookout	4876'
Fruitland	2320'	Gallup	6185'
Pictured Cliffs	2548'	Greenhorn	6200'
Huerfano Bentonite	3270'	Graneros	6256'
Cliffhouse	4174'	Dakota	7084'
Menefee	4300'		

Logging Record: Formation Density, Casing Inspection, GR/CCL**Stimulation:** Perf'd 2 SPF @ 5155'-5148', 5136'-5130', 5124'-5118', 5103'-5090', 5087'-5070', 5046'-5040', 4998'-4973', 4961'-4952', 4946'-4888', 4883'-4876'. Sand water frac'd w/ 1600 bbls. water and 100,000# sand.**Workover History:** 9/2/65 - Squeezed Point Lookout perms w/ 350 sx. cmt. Drilled out to new TD @ 7196'. Ran 229 jts. 4-1/2" 9.5# J-55 set @ 7195', float shoe @ 7181', DV tool @ 5316'. Cemented in 2 stages w/ 375 sx. cement. Perf'd Dakota @ 7016'-7026', 7085'-7110', 7115'-7122' w/ 4 /SPF. Frac'd Dakota w/ 1900 bbls. water and 60,000# 20/40 sand and 20,000# 10/20 sand. Perf'd Mesaverde @ 4878'-4882', 4890'-4924', 4242'-4250', 4260'-4266', 4280'-4298'. Frac'd w/ 60,000# 20/40 sand and 20,000 # 10/20 sand and 1640 bbls. water. Squeezed Cliffhouse perms w/ 18 sx. cmt. Re-perf'd @ 4894'-4924' w/ 2 SPF. Frac'd w/ 20,000# 10/20 sand and 20,000# 20/40 sand and 965 bbls. water. Cleaned out to 7112'. Set Baker Model "D" production packer @ 6980' KB, Sliding sleeve @ 6974', Baker blast joint @ 4875'-4926' KB. Ran 2-3/8" 4.7# J-55 tbg. to blast jt. @ 4875'.

Mesaverde potential - 2212 MCF/D

Dakota potential - 3585 MCF/D

Pipeline: WFS

Stimulation Procedure
Burlington Resources Oil and Gas CO.

General Information		Well Configuration				Formation and Stimulation Data	
Well Name:	Richardson SRC #5	Casing:	4-1/2" 10.5#	4,860 FT		Max Sur. Trtng. Pressure	6000 psi
Location:	B 21 31N 12W			FT		Frac Gradient:	0.45 psi/ft
Formation:	Menefee	Tubing:	2-7/8" 6.4#	4470 FT		BH Temp:	150 deg. F
Vendors		Cap:	0.0159	0.0087	0.00579	Antic. Treating Rate:	35 BPM
Stimulation:	Halliburton	PBTD	4860 ft		Vol. to: (gals)	Antic. BH Treating Pres:	2,101 psi
Tagging:	Protechnics	Top Perf:	4504 ft	PBTD	1,347	Antic. Surf Treating Pres:	4,012 psi
		Bot Perf:	4833 ft	Top Perf:	1,110	Percent Pad:	24%
		Midpoint:	4669 ft	Btm perf:	1,329	Net Pay:	262 ft
Fluid:	20# Crossed-linked	Perforations				lb prop/net ft pay:	553 lb/ft
Note:	Delta Frac w/ Sand-Wedge	1 spf	0.3 " holes			Job Duration:	40.5 min
		21 holes	17.48 " penetration			Perf friction	1,005 psi
						Total friction	3,933 psi

Stimulation Schedule

Sand Data						Fluid Data				Rate and Time Data			Comments
Tag	Stage	Sand Mesh	Sand Conc	Stage Sand	Cum Sand	Stage Fluid	Cum Fluid	Stage Slurry	Cum Slurry	Slurry Rate	Stage Time	Cum Time	
	Pad	N/A	0.0	0	0	12,500	12,500	12,500	12,500	35.0	8.5	8.5	
Yes	2	20/40	2.0	15,000	15,000	7,500	20,000	8,184	20,684	35.0	5.6	14.1	
Yes	3	20/40	3.0	25,000	40,000	8,333	28,333	9,473	30,157	35.0	6.4	20.5	
Yes	4	20/40	4.0	45,000	85,000	11,250	39,583	13,302	43,459	35.0	9.0	29.6	
Yes	5	20/40	5.0	60,000	145,000	12,000	51,583	14,736	58,195	35.0	10.0	39.6	
	Flush	N/A	0.0	0	145,000	1,329	52,913	1,329	59,525	35.0	0.9	40.5	2% KCL Water
Total					lb/ft	Total	Total	Total		Ave.	Total		
						145,000	553	52,913	59,525	35.0	40.5		

Volumes and Additives

Equipment

Water Volume= 52,913	treat + 2,646	excess = 55,558	gallons (BR)	Tanks: 4.0	x 400 bbl frac tanks(supplied by BR).
Water Volume= 1,260	treat + 63	excess = 1,323	bbls (BR)	Filled w/ 1,323	bbls 2% KCl water (supplied by BR).
Fluid Volume: 1,323	bbl designed treating volume			Sand Chief	
20/40 Arizona Sand: 145,000	lbs			Blender.	
Fluid: 0.18#/M BE-6 (Biocide)				Fluid Pumps as required.	
2% KCL water (filtered if necessary).					
5 gal/M LGC-8 (Liquid Gel concentrate)					
2 gal/M BC-140 (Buffer & Crosslinker)					
1 gal/M Lo surf 300					
0.25 - 1.0 #/M SP Breaker (Ramp breaker up during job)					
0.12 gal/sx (SANDWEDGE)					
Radioactive Tagging as follows:				Rduc 12/9/97	
0.4 mCi Ir-192, 0.3 mCi Sb-124, 0.3 mCi Sc-46					

Comments and Special Instructions

MAXIMUM ALLOWABLE BOTTOMHOLE TREATING PRESSURE IS 3800 PSI.

Frac down casing via frac valve.

Hold safety meeting with everyone on location before pressure testing surface lines.

Pressure test surface lines to 7000 psi

Production Engineer: Steve Campbell

(Work) 326-9546 (Home) 325-8218 (Pager) 564-1902

Richardson SRC #5

Unit B, Section 21, T31N, R12W
San Juan County, NM

Current Schematic

Proposed Schematic

