

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy Minerals and Natural Resources
NM OIL CONSERVATION
ARTESIA DISTRICT
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-101
Revised July 18, 2013

NOV 10 2015

☐ AMENDED REPORT

RECEIVED

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

¹ Operator Name and Address Cimarex Energy Co. of Colorado 202 S. Cheyenne Ave Tulsa, OK 74103		² UGRID Number 162681
⁴ Property Code 29000		³ API Number 30015-32286
⁵ Property Name Echols Com		⁶ Well No. 2

7. Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
M	12	23S	26E		1110	South	990	West	Eddy

8. Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County

9. Pool Information

⁹ Pool Name Atoka <i>Carlsbad; Atoka, South (gas)</i>	¹⁰ Pool Code 73801
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Additional Well Information

¹¹ Work Type P	¹² Well Type Gas	¹³ Cable/Rotary	¹⁴ Lease Type Fee	¹⁵ Ground Level Elevation 3258
¹⁶ Multiple	¹⁷ Proposed Depth 12050	¹⁸ Formation Atoka	¹⁹ Contractor	²⁰ Spud Date
Depth to Ground water:		Distance from nearest fresh water well		Distance to nearest surface water

☐ We will be using a closed-loop system in lieu of lined pits

21. Proposed Casing and Cement Program

*Csg previously set

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
*Surf	17.5	13-3/8"	48#	487	490	surf
*Int	12.25	9-5/8"	40	3188	1300	surf
*Prod	8.75	5-1/2"	17	12045	1800	2020

Casing/Cement Program: Additional Comments

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22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer

²³ I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I further certify that I have complied with 19.15.14.9 (A) NMAC <input checked="" type="checkbox"/> and/or 19.15.14.9 (B) NMAC <input type="checkbox"/> if applicable. Signature: <i>[Signature]</i> Printed name: Terri Stathem Title: Manager Regulatory Compliance E-mail Address: tstathem@cimarex.com Date: 11-9-15	<p style="text-align: center;">OIL CONSERVATION DIVISION</p> Approved By: <i>[Signature]</i> Title: <i>Oil & Gas Supervisor</i> Approved Date: 11/20/15 Expiration Date: Conditions of Approval Attached
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Echols Com 2
Atoka Recompletion Procedure
Michael Karner 9/10/15

Well Data

KB 16'
TD 12,050'
PBSD 11,023'

Casing 13-3/8" 48# H-40 @ 487'. Cmt'd w/ 490 sx, cmt circ
9-5/8" 40# J-55 @ 3,188'. Cmt'd w/ 1,300 sx, cmt circ
5-1/2" 17# N-80 & P-110 @ 12,045'. Cmt'd w/ 1,800 sx. DV @ 7,011'. TOC @ 2,020' by TS

Tubing 2-3/8" 4.7# L-80 8rd, EOT @ 11,393' (345 joints)

Packer 5-1/2" x 2-3/8" Arrowset 1X packer @ 11,409'

Current Prod. Perfs Morrow (11,474' – 11,909')

Proposed RC Perfs Atoka (11,026' – 11,038'), (11,080' – 11,127'), (11,155' – 11,166'), (11,172' – 11,182'), (11,206' – 11,217'), and (11,231' – 11,238')

Contacts

Name	Company or Position if XEC	Email or Alternate Phone	Phone
Shane Hines	Flowco Production Solutions	shane.hines@flowcosolutions.com	830-832-8910
Aldo Mendoza	Basic Energy Services	432-557-2370	432-687-1994
Kim Barton	Production Superintendent	kbarton@cimarex.com	432-620-1952
Paul Stock	Workover Superintendent	pstock@cimarex.com	432-620-1955
Mike Karner	Production Engineer	mkarner@cimarex.com	432-571-7895
Matt	Apollo Wireline		432-563-0891
	Basin Testers LP		432-362-5072
	BLM	575-361-2822	575-234-5972
Mark Dennis	Cameron	575-441-7709	575-397-1325

Procedure

Notify NMOCD 24 – 48 hours prior to starting operations. Contact Cameron company representative 1-2 days prior to starting operations to set up having the wellhead and tubing hanger picked up so that they can be inspected and returned within a few days.

1. Test anchors prior to moving in rig.
2. Move in rig up pulling unit.
3. Kill well as necessary with 4% KCl.
4. Nipple down wellhead, nipple up 5,000 psi blow out preventer stack. Send wellhead with Cameron company representative for inspection and to replace seals in tubing hanger. Call Cameron company representative 1-2 days prior to starting operations to arrange having equipment picked up so that it can be returned within a few days.
5. Release AS-1X pkr @ 11,409' & TOO H w/ 2-3/8" 4.7# L-80 tbg & packer. Stand back tbg. Note: If unable to release packer, plan to set a blanking plug in packer, release from on/off tool, and leave packer in the well rather than fish for the packer. Packer is 65' from top of Morrow perms so it should be left behind, and the CIBP should be set as close to this as possible (CIBP must be set within 100' of top Morrow perforations at 11,474', so must be set below 11,374' but above the packer left in the hole if we are unable to release packer).
6. MIRU wireline and 5k short lubricator
7. RIH with 4.6" gauge ring and junk basket down to +/- 11,500' (OD of CIBP = 4.24").
8. RIH w/ CIBP and set @ +/- 11,424'
9. RIH w/ bailer and bail 35' of cement on top of CIBP – abandoning Morrow perms.
10. WOC 6-8 hours
11. RU pump truck and test casing to 500 psi for 30 minutes with no more than 10% leakoff. Record this test on a circular test chart.
12. TIH w/ 2-3/8" 4.7# L-80 tbg to tag TOC @ +/- 11,389'
13. Circulate one bottoms up of 4%
14. TOO H w/ 2-3/8" 4.7# L-80 tbg to surface and stand back tubing.
15. RIH w/ 4.6" gauge ring and junk basket to tag TOC at +/- 11,389'
Note: Expected reservoir pressure is 4,124 psi. 4% KCl is 8.56 ppg, so a hydrostatic column of 7% KCl will be 9,265', or 1,973' from surface. Make sure that top of fluid tagged is at least this depth so that guns are not shot to surface causing a fishing job.
16. RIH w/ 3-1/8" casing guns and perforate Atoka with 1 SPF and 0° phasing at the following depths: 11,026' – 11,238'
17. Pin 2-3/8" pump out plug for 1,500 – 2,000 psi differential pressure
18. RIH w/ AS-1X packer w/ 1.81" X nipple, 1 10' pup joint 2-3/8" 4.7# L-80 tubing, 1.81" XN nipple and pump, out plug set at +/- 10,976' From downhole up:
 - a. 2-3/8" Pump out plug
 - b. 1.81" XN nipple
 - c. 10' 2-3/8" 4.7# L-80 pup joint
 - d. AS-1X packer w/ 1.81" X nipple
19. RDMO wireline and 5k short lubricator
20. TIH w/ T-2 on-off tool on 2-3/8" 4.7 L-80 tbg and latch into Arrowset packer hydrotest while TIH.
21. Set tubing into tubing hanger and RU tree. Space out tubing with 2-3/8" 4.7# tubing subs to hang tubing with 10klbs compression on packer.
22. MIRU Guardian Tree Saver and Stroke to isolate tree.
23. MIRU Baker Hughes acid

24. Pump out plug
25. Pump staged acid job including 10,000 total gallons of 15% HCl with gel retarder and ball sealers followed by 2121 gallon (50.5 bbl) overflush down 2-3/8" tubing as per design below:

PROCEDURE

Stage	Fluid		Diverting Agents				
	Type	Volume (gal)	Conc. (pda)	Type	Stage (volume)	Cum (lbs)	Cum (b.s.)
1	2% KCl Water	500					
2	15% Gelled HCl Acid	10000		BS, 7/8 in, 1.3 sg,	150		150
3	2% KCl Water	2121					150
Total		12621					150

TREATMENT SCHEDULE

Stage	Surface Treating Pressure (psi)	Rates			Volume				Stage Pump Time hh:mm:ss
		Slurry (bpm)	Clean Fluid (bpm)	Divertor Rate (lb/min)	Slurry		Fluid		
					Stage (bbls)	Cum. (bbls)	Stage (bbls)	Cum. (bbls)	
1	6069	5.0	5.0		11.9	11.9	11.9	11.9	00:02:22
2	5832	5.0	5.0		238.1	250.0	238.1	250.0	00:47:37
3	6069	5.0	5.0		50.5	300.5	50.5	300.5	00:10:06
Total Pump Time:									01:00:05

26. RU well to production



Current WBD
KB - 18' above GL

Cimarex Energy Co. of Colorado

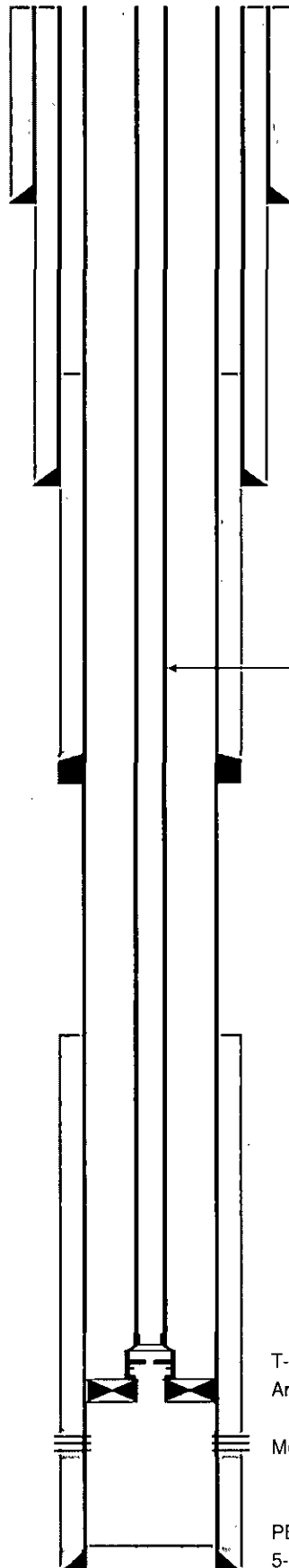
Echols #2

1110' FSL & 990' FWL

Sec. 12, T-23-S, R-26-E, Eddy Co., NM

S. Gengler

05/11/2009



13-3/8", 48# H-40 csg @ 487'
cmt'd w/ 490 sx, cmt circ

TOC @ 2020' by TS

9-5/8", 40# J-55 csg @ 3188'
cmt'd w/ 1300 sx, cmt circ

345 jts 2 3/8" 4.7# L-80 Tbg

DV Tool @ 7011'
cmt'd w/ 800 sx

TOC @ 9200' by CBL

T-2 On-off Tool w/ 1.81" F Profile nipple @ 11402'
Arrowset 1X pkr @ 11409'

Morrow perms (11474' - 11909')

PBTD @ 12023'
5-1/2" 17# N-80 & P-110 @ 12045' cmt'd w/ 1000 sx
TD @ 12050'



Proposed WBD
KB - 18' above GL

Cimarex Energy Co. of Colorado

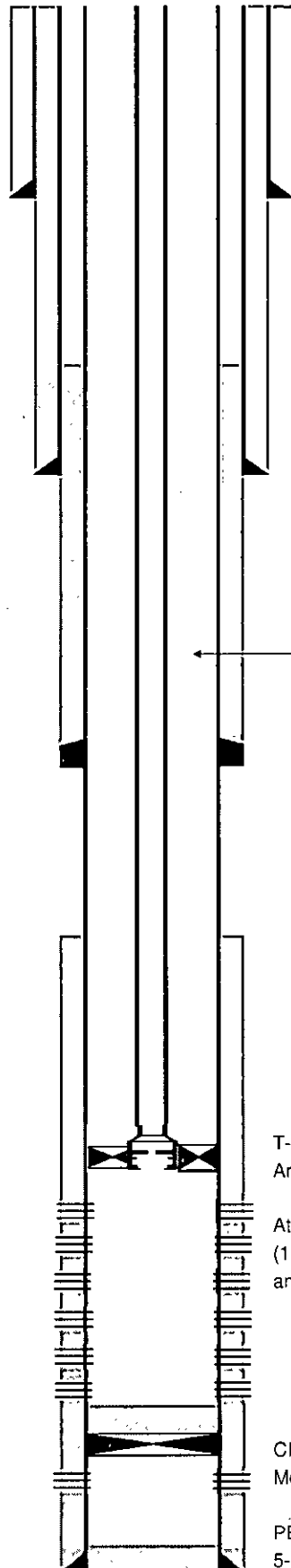
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T-2 On-off Tool w/ 1.81" F Profile nipple @ 10919'
Arrowset 1X pkr @ 10926'

Atoka Perfs (11,026' - 11,038'), (11,080' - 11,127'),
(11,155' - 11,166'), (11,172' - 11,182'), (11,206' - 11,217'),
and (11,231' - 11,238')

CIBP at 11,424' w/ 35' cmt bailed on top
Morrow perfs (11,474' - 11,909')

PBTD @ 12023'
5-1/2" 17# N-80 & P-110 @ 12045' cmt'd w/ 1000 sx
TD @ 12050'