

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Carlsbad Field Office
OCD Artesia

FORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018

SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on page 2		5. Lease Serial No. NMLC064200
1. Type of Well <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other		6. If Indian, Allottee or Tribe Name
2. Name of Operator CIMAREX ENERGY COMPANY OF CO Contact: AMITHY E CRAWFORD E-Mail: acrawford@cimarex.com		7. If Unit or CA/Agreement, Name and/or No. NMNM94519
3a. Address 202 S CHEYENNE AVE SUITE 1000 TULSA, OK 74103.4346	3b. Phone No. (include area code) Ph: 432-620-1909	8. Well Name and No. BLACK RIVER FED 1
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 10 T24S R26E SWNW 1330FNL 990FWL		9. API Well No. 30-015-29018-00-S1
		10. Field and Pool or Exploratory Area S CARLSBAD
		11. County or Parish, State EDDY COUNTY, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Hydraulic Fracturing	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input type="checkbox"/> Other
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input checked="" type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplate horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

Cimarex respectfully requests approval to plugback from the morrow, perforate and recomplate into the Cisco Canyon & Wolfcamp. Cimarex also proposes to downhole commingle production from the Cisco Canyon and Wolfcamp zones. Please see attached recompletion procedure for your approval.

The 2016 White City Area Downhole Commingling Field Study included the referenced well for commingling. The Field Study was approved by the BLM on 7/6/2016.

DHC with the NMOCD is pending.

Attachments: C-102s, Procedure, Current and proposed wellbore schematic, oil water and gas analysis & commingling worksheet form.

GC 5-24-18
Accepted for record - NMOCD

RECEIVED
MAY 23 2018
DISTRICT II-ARTESIA O.C.D.

14. I hereby certify that the foregoing is true and correct. Electronic Submission #409325 verified by the BLM Well Information System For CIMAREX ENERGY COMPANY OF CO, sent to the Carlsbad Committed to AFMSS for processing by PRISCILLA PEREZ on 03/29/2018 (18PP1417SE)	
Name (Printed/Typed) AMITHY E CRAWFORD	Title REGULATORY ANALYST
Signature (Electronic Submission)	Date 03/26/2018

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By <u>/s/ Jonathon Shepard</u>	Title <u>PETROLEUM ENGINEER</u>	Date <u>5/16/2018</u>
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.		Office <u>CFO</u>

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make 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.

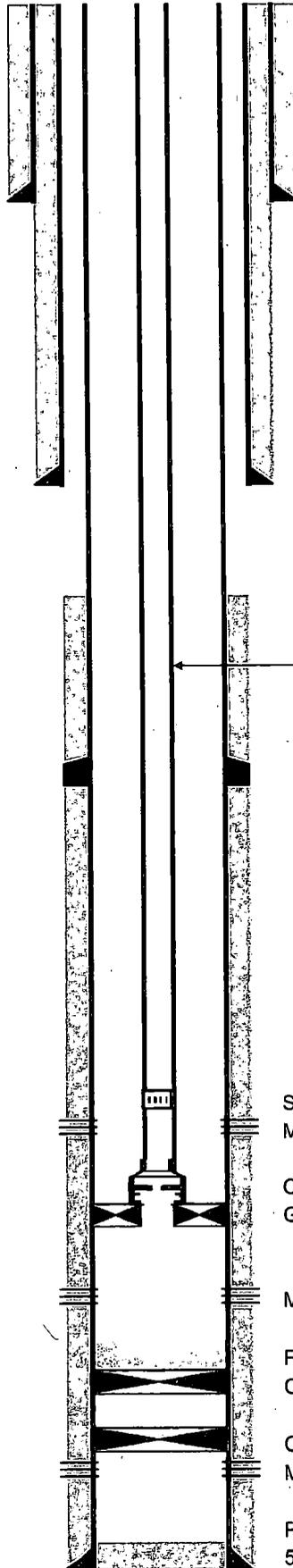
(Instructions on page 2)

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****



KB - 14.5' above GL

Cimarex Energy Co. of Colorado
Black River 10 Federal Com #1
1330' FNL & 990' FWL
Sec. 10, T-24-S, R-26-E, Eddy Co., NM
S. Gengler .08/27/2013



13-3/8", 48# H-40 csg @ 510'
cmtd w/ 325 sx, 1" to surface

9-5/8", 47 & 53.5# N-80 csg @ 3215'
cmtd w/ 1250 sx, cmt circ

TOC @ N/A; opr est 3808 on form to state

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

DV Tool @ 9492'
cmtd w/ 775 sx

Sliding Sleeve @ 11106'
Morrow perms (11129' - 11141')

On-off Tool w/ 1.78" F Profile nipple @ 11211'
Guiberson Uni VI pkr @ 11217'

Morrow perms (11340' - 11430')

PBTD @ 11463'
CIBP @ 11473'

CIBP @ 11640'
Morrow perms (11482' - 11748')

PBTD @ 11819'
5-1/2" 23# L-80 & S-95 @ 11858' cmtd w/ 560 sx
TD @ 11862'



Cimarex Energy Co. of Colorado

Black River 10 Federal Com #1

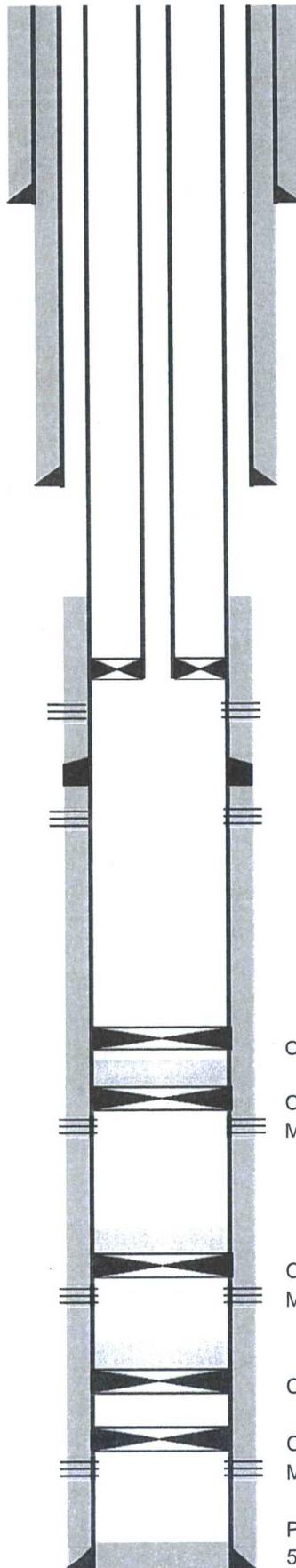
1330' FNL & 990' FWL

Sec. 10, T-24-S, R-26-E, Eddy Co., NM

S.Runyan

02/05/2018

KB - 14.5' above GL



13-3/8", 48# H-40 csg @ 510'
cmtd w/ 325 sx, 1" to surface

9-5/8", 47 & 53.5# N-80 csg @ 3215'
cmtd w/ 1250 sx, cmt circ

TOC est 3808

2 3/8" 4.7# L-80 Tbg @ 8,500'
5-1/2" 23# ASIX packer @ 8,500'

Woficamp Perforations (8,507' - 9,826')

DV Tool @ 9492'
cmtd w/ 775 sx

Ciscamp Perforations (9,872' - 10,071')

CIBP @ 11,000'

CIBP @ 11,079'
Morrow perms (11129' - 11141')

CIBP @ 11,290'
Morrow perms (11340' - 11430')

CIBP @ 11473'

CIBP @ 11640'
Morrow perms (11482' - 11748')

PBTD @ 11819'
5-1/2" 23# L-80 & S-95 @ 11858' cmtd w/ 560 sx
TD @ 11862'

Downhole Commingling Worksheet

Operator: Cimarex Energy Co. Of Colorado
 Lease/Well Name/API Number/Location: Black River 10 Federal Com 1 /30-015-29018/Sec. 11, T25S R26E

Data	Estimated Combined Production Data	
	Bottom Formation	Upper Formation
Pool name	White City; Penn (Gas)	Purple Sage Wolfcamp Gas
Pool Code	87280	98220
State Form C-102 with dedicated Acres Provided	640 acres	320 acres
Formation Name	Cisco Canyon	Wolfcamp
Top and Bottom of Pay Section (Perforated or open-Hole Interval)	9,872'-10,071'	8,507'-9826'
Method of production	Flowing	Flowing
Bottom Hole Pressure	Within 150% of top perf	Within 150% of top perf
Reservoir Drive mechanism	Gas Drive	Gas Drive
Oil gravity and/or BTU	Oil: 53.5° API Gas: 1142.4 BTU dry / 1122.6 BTU wet @ 14.73 psi	Oil: 51.8° API Gas: 1225.8 BTU dry / 1204.6 BTU wet @ 14.73 psi
Average Sulfur Content (Wt %)	0	0
Oil sample Analysis provided	Yes	Yes
Gas Analysis provided	Yes	Yes
Produce Water Analysis provided	Yes	Yes
H2S present	No	No
Producing, Shut-In or New Zone	New Zone	New Zone
Date and Oil/Gas/Water rates of Last Production (new zones or no production history Operator shall attached production estimated and supporting data)	Date: N/A Expected Rate: 21 BOPD, 526 MCFPD, 133 BWPD	Date: N/A Expected Rate: 79 BOPD, 1,981 MCFD, 500 BWPD
Average decline % (provide back up data)	7% (terminal)	7% (terminal)
Fixed Allocation Percentage	Oil: 33% Gas: 33%	Oil: 67% Gas: 67%

Remarks: Production history for analogs for both zones provided in field study appendix.

Operator Signature: *Amilky Crawford*
 Date: 3/26/2018

- Attached Supporting documents
- State Form C-102 with dedicated Acres Provided
 - Oil sample Analysis provided (Must be current)
 - Gas Analysis provided (Must be current)
 - Produce Water Analysis provided (Must be current)
 - Any additional supporting data (i.e. offset well production and decline curves etc..)
 - *Utilize weighted average.



Objective

Cimarex is seeking approval from the U.S. Bureau of Land Management (BLM) of its proposed *commingling permit* application and the *allocation factors* for the Cisco Canyon and Wolfcamp formations in the recompletion of the **Black River 10 Federal Com 1** well (API: 30-015-29018).

The proposed “allocation factors” have been estimated following BLM’s approved allocation methodology in the *2016 Downhole Commingling Field Study “Cisco Canyon and Wolfcamp (Ciscamp) Commingled Allocation Assessment in White City, Eddy County, NM”* (NMP0220), approved by BLM on July 6, 2016 (**Appendix A**). Based on this approach and the assessment of subsurface data, the recommended initial allocation factors are 67% for the Wolfcamp and 33% for the Cisco Canyon.

The support evidence for this application includes petrophysical assessment and recoverable reserves estimation for each proposed formation (Table 1) and a log section (**Appendix B**).

Proposed Recompletion

Cimarex plans to recomplete the **Black River 10 Federal Com 1** well to the Cisco Canyon and the Wolfcamp formations. This well is located within the BLM approved White City Ciscamp Field Study Area (see Exhibit 6A of the above referenced Field Study) and is currently completed in the Morrow formation. The Morrow in this well has no remaining gas reserves. The company plans to abandon the Morrow zone under a cast-iron bridge plug with cement on top.

The proposed Ciscamp recompletion will be performed with a *multi-stage frac job*. The plan is to commingle Wolfcamp and Cisco Canyon streams downhole immediately after completion to allow faster flowback recovery and more efficient artificial lift. The synergy between both streams has shown to significantly improve liquid unloading in analog wells by maintaining higher and more stable critical gas velocities for a longer period. This in turn minimizes formation damage and increases reserves recovery by extending the life of the well.

A proposed recompletion and workover procedure is included in **Appendix C**.



Production Operations – Carlsbad Region, Permian Basin
Black River 10 Federal Com 1 - Cisco Canyon and Wolfcamp
 (Ciscamp) Proposed Commingling Allocation Factors. Eddy County, NM

Proposed Initial Production Allocation Factors

Based on BLM’s approved Allocation Methodology and Cimarex’s assessment, the “Initial Allocation Factors” for the New Completion Zones in subject well are estimated as follows:

$$\text{Wolfcamp \% Alloc. Factor} = \frac{\text{WC RGIP} - \text{WC Prev. Cum Gas}}{\text{Total RGIP}}$$

$$\text{Cisco Canyon \% Alloc. Factor} = \frac{\text{CC RGIP} - \text{CC Prev. Cum Gas}}{\text{Total RGIP}}$$

The Recoverable Gas in Place (RGIP) for subject well is **1,654 MMCF** from the Wolfcamp and **817 MMCF** from the Cisco Canyon, for a total of **2,462 MMCF of gas** (see Table 1). In this case, the proposed commingling intervals have never produced in this well (no prior cumulative production), therefore Remaining RGIP (RRGIP) is equal to RGIP for both formations.

The resulting proposed allocation factors are calculated as follows:

$$\text{Wolfcamp \% Alloc. Factor} = \frac{1,645 \text{ MMCF}}{2,462 \text{ MMCF}} = 67\%$$

$$\text{Cisco Canyon \% Alloc. Factor} = \frac{817 \text{ MMCF}}{2,462 \text{ MMCF}} = 33\%$$

The RGIP for each zone is estimated using the Hydrocarbon Pore Volume (HCPV) assessment as shown in Table 1. The implemented net pay cut-offs are Average Porosity (PHI) > 6-10% and Average Sw < 25-35%. *Total estimated oil reserves are 81 MBO.*

Table 1: Summary of Reservoir Properties, Estimated Reserves and Resulting Allocation Factors

Black River 10 Fed Com 1

Proposed RC Zone(S)	Avg. Depth, ft	Est. Reservoir Pressure, psi	Net Pay, h (ft)	Avg. PHI	Avg. Sw	HCPV (1-Sw)*PHI*h	OGIP, MMCF	Est. Recovery Factor	RGIP @RF, MMCF	Zone Prod. Start Date	Prev. Cum. Gas to Date, MMCF	Remaining RGIP (RRGIP), MMCF	Initial Alloc. Factors, % (based on RRGIP Ratio)
Wolfcamp Total :	9,258	4,027	246	11.3%	22%	21.7	1,935	85%	1,645			1,645	67%
Cisco Canyon :	10,039	4,367	81	14.6%	13%	10.3	961	85%	817			817	33%
Total:			326			32.0	2,896	85%	2,462		-	2,462	100%

In this well, the spacing for both formations is the same, as well as, public interests: 33.6% working interest and 27.1% net revenue interest. Both formations are sweet.

Enclosed with this report are the C-107A, Downhole Commingling Worksheet, current and proposed wellbore diagrams, current gas, oil, and water analyses C-102, 3160-5.



CONFIDENTIAL. February 5, 2018
 Production Operations – Carlsbad Region, Permian Basin
Black River 10 Federal Com 1 - Cisco Canyon and Wolfcamp
(Ciscamp) Proposed Commingling Allocation Factors. Eddy County, NM

Appendix A: 2016 Downhole Commingling Field Study for the White City Area



United States Department of the Interior

BUREAU OF LAND MANAGEMENT
 Pecos District
 Carlsbad Field Office
 620 E. Greene
 Carlsbad, New Mexico 88220-6292
www.blm.gov/nm



3180 (P0220)

July 6, 2017

Reference:
 White City Area
 2016 Downhole Commingling Field Study
 Eddy County, New Mexico

Cimarex Energy Co. of Colorado
 600 N. Marienfeld Street, Suite 600
 Midland, TX 79701

Gentlemen:

In reference to your 2016 Downhole Commingling Field Study for the White City Area; it is hereby approved, with the following conditions of approval:

1. All future NOI Sundries submitted to request approval to downhole commingle (DHC) the Lower Penn, Upper Penn and the Wolfcamp formation shall reference this Study and be mentioned in Exhibit 6A. A copy of this study does not need to be attached to the Sundry.
2. All future NOI Sundries submitted to request approval to DHC shall reference NMOCD approval order.
3. All future NOI Sundries submitted to request approval to DHC shall include the BLM's DHC worksheet.
4. All DHC approvals are subject to like approval by NMOCD.
5. The BLM may require an updated evaluation of the field study be done in the future.

Please contact Edward G. Fernandez, Petroleum Engineer at 575-234-2520 if you have any questions.

Sincerely,

Edward G. Fernandez
 for Cody R. Layton
 Assistant Field Manager
 Lands and Minerals

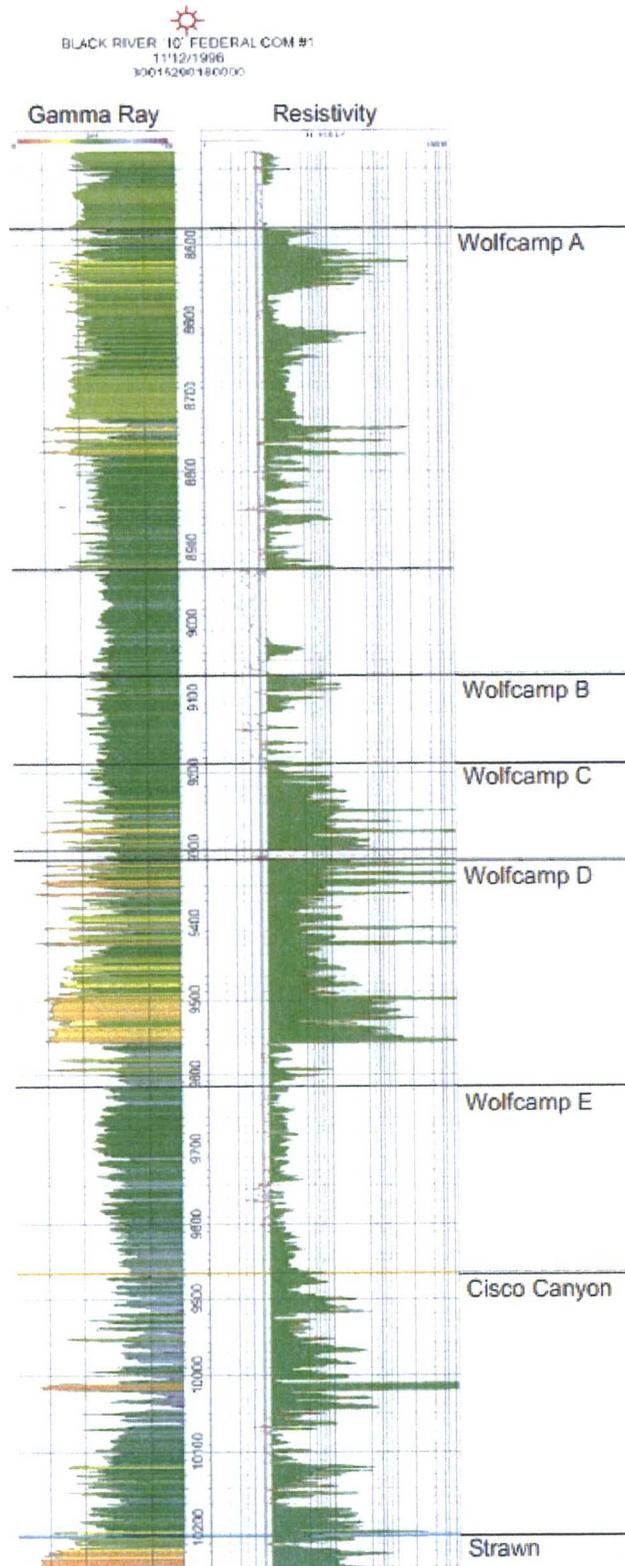
Enclosure
 cc: NMP0220 (CFO I&E)



CONFIDENTIAL. February 5, 2018

Production Operations – Carlsbad Region, Permian Basin
Black River 10 Federal Com 1 - Cisco Canyon and Wolfcamp
(Ciscamp) Proposed Commingling Allocation Factors. Eddy County, NM

Appendix B: Log section from top of Wolfcamp to top of Strawn – Black River Federal Com 1



Appendix C: Recompletion Procedure – Black River 10 Federal Com 1

Well Data

KB	14.5'
TD	11,862'
PBTD	11,463'
Casing	13-3/8" 48# H-40 @ 510'. Cmt'd w/ 325 sx, cmt to sfc 9-5/8" 47#/53.5# N-80 @ 3,215'. Cmt'd w/ 1,250 sx, cmt circ 5-1/2" 23# L-80/S-95 @ 11,734'. Cmt'd w/ 560 sxs,
Tubing	2-3/8" 4.7# L-80 8rd, EOT @ 11,217'
Proposed RC Perfs	Wolfcamp (8507,' – 9,826') & Cisco Canyon (9,872' – 10,071')

PROCEDURE

1. Pull test anchors, replace as necessary before rig arrival.
2. MIRU pulling unit, rental flare, and choke manifold.
3. Hold safety meeting and perform JSA, discuss risks.
4. Kill well with FSW as needed. Observe all pressures on well and note detail in report.
 - a. **NOTE: Treat all water throughout job with biocide.**
 - b. Tate Lair 432-556-2447
5. MIRU WSU.
6. ND WH and flowline, NU 5,000 psi hydraulic BOPs.
7. PU tubing, release 5-1/2" Guiberson Uni Vi packer @ 11,217'.
8. POOH w/2-3/8" tubing & packer. Lay down packer and tubing.
9. MIRU WL and 5-1/2" 23# CIBP.
10. Set CIBP @ +/- 11,290'.
11. Mix 25' class H cement.
12. PU RIH with dump bailor on WL and dump bail cement on top of CIBP.
13. PU 2nd CIBP and set @ +/- 11,079'.
14. Mix 25' class H cement.
15. PU RIH with dump bailor on WL and dump bail cement on top of CIBP.
16. PU 3rd CIBP and set @ +/- 11,000'.
17. RDMO WL company.



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Production Operations – Carlsbad Region, Permian Basin
Black River 10 Federal Com 1 - Cisco Canyon and Wolfcamp
(Ciscamp) Proposed Commingling Allocation Factors. Eddy County, NM

18. MIRU pump truck and pressure test CIBP, Cmt, and casing to 8,500 psi on a chart for thirty minutes observing leak-off.
 - a. Leak-off can be no more than 10%.
 - b. Report pressure back to Midland office.
 - c. If pressure test is successful proceed with Ciscamp completion.
19. ND 5k BOPs.
20. NU two 10k frac valves and flow cross.
21. MIRU water transfer with frac tanks to contain water pumped from frac ponds.
 - a. Test frac valves and flow cross prior to fracing to 10,000 psi.
22. MIRU WL with full lubricator for perforating the Ciscamp formation.
23. RIH with 5-1/2" gauge ring/JB to +/- 10,200'.
24. Perforate according to detailed perforation cluster sheet provided in separate document.
25. Perforate and frac the Ciscamp according to stimulation design in separate document.
 - a. 10K CBP will be set in between each stage.

POST FRAC

26. RDMO frac crew.
27. MIRU 2" CTU with sufficient tubing to wash down to PBD +/- 10,200' (CIBP)
28. MU 2.88" OD coil connector and perform pull test to 20k.
 - a. Note Check weight indicator versus hydraulics and note any discrepancy
29. Fill coil and flush with 2% KCL to ensure tubing is clean
30. MU recommended BHA listed below
 - a. Coil Connector
 - b. Dual BPV
 - c. Dual Hydraulic Double Acting Jars
 - d. Hydraulic Disconnect
 - e. Dual Circulating Sub
 - f. PD Motor
 - g. 4.625" OD Blade Mill
31. Verify coil company has mechanical means on location to splice coil together if coil parts across gooseneck while TOH.
32. Function test motor and mill on the surface.

33. NU BOPs and MU Injector head. Test BOPs and all lines to 4800 psi high and 500 psi low.
34. Break circulation and RIH to first plug depth.
35. D/O composite plugs one at a time.
36. Pumping sweeps:
 - a. After each plug is tagged
 - b. After each plug is drilled out
 - c. After every 60 bbls of fluid is pumped
37. Note weights, trip speeds, pump rates, flowrates, pressures, and viscosities on Drill_IT reports while verifying return rates every 15 minutes.
38. Continue washing/milling to PBDT +/- 10,200'.
39. When clean out is complete and decision is made to POOH, pump a sweep and circulate double bottoms up.
 - a. Ensure clean returns before POOH.
40. POOH with motor, mill, and CT.
41. LD tools, close well BOP, and RD CTU.
 - a. DO NOT ND BOPs.
42. MIRU pulling unit.
43. MIRU WL unit with 5K lubricator.
44. Call Globe for AS1X (resettable) packer, on/off tool, and BHA
 - a. John Williams 432-553-0195
 - b. Daniel Ruiz 432-528-3919
45. Pickup 5-1/2" 23# AS1X packer with 1.875" X-Nipple
 - a. 2-3/8 L-80 10' PUP Joint
 - b. 2-3/8" collar with WLEG and pump out plug pinned to 3,000 psi
 - c. 2-3/8" 8rd EUE XN profile nipple w/1.791" No-Go
 - d. Wireline set 5-1/2" 23# AS1X packer
 - e. On/off tool with 2.00" X-Nipple
46. RIH and set packer @ +/- 8,500'.
47. POOH with setting tools and RDMO Wireline.
48. PU ON/OFF stinger and 2-3/8" tubing. RIH w/tbg & gas lift valves (GLV design attached).
49. With tubing above packer pump 133 bbls of corrosion inhibited biocide treated packer fluid down the tubing and displace with 33 bbls fresh water. (Annular capacity – 133 bbls & Tubing capacity – 33 bbls).



CONFIDENTIAL. February 5, 2018

**Production Operations – Carlsbad Region, Permian Basin
Black River 10 Federal Com 1 - Cisco Canyon and Wolfcamp
(Ciscamp) Proposed Commingling Allocation Factors. Eddy County, NM**

50. Engage on/off tool. Set down 15 pts to ensure packer is set.
51. Space out tubing, PU and land tubing in 10k lbs tension.
52. ND BOP and NU wellhead.
53. RU kill truck and pressure up to break pump-out plug.
54. RD WSU.
55. Open well to frac tanks and turn well over to flowback.
56. When the well begins to make gas SWI. Notify Midland and turn production into the facility.
57. Report daily production and pressures to Midland office for 10 days.
58. Run production log for allocation purposes after recovering load. Run additional production logs if actual production varies significantly from expected performance

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 & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-29018	² Pool Code 98220	³ Pool Name Purple Sage Woflcamp (Gas)
⁴ Property Code 29006	⁵ Property Name Black River 10 Federal Com	
⁷ OGRID No. 162683	⁸ Operator Name Cimarex Energy Co. of Colorado	⁶ Well Number 1
		⁹ Elevation 3354'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	10	24S	26E		1330'	North	990'	West	Eddy

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

¹² Dedicated Acres 320	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
--------------------------------------	-------------------------------	----------------------------------	-------------------------

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

¹⁶ 	¹⁷ OPERATOR CERTIFICATION <i>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</i>		
	<u>Amithy Crawford</u> 3/26/18 Signature Date		
	<u>Amithy Crawford</u> Printed Name <u>acrawford@cimarex.com</u> E-mail Address		
¹⁸ SURVEYOR CERTIFICATION <i>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</i>			Date of Survey Signature and Seal of Professional Surveyor:
			Certificate Number

BUREAU OF LAND MANAGEMENT

Carlsbad Field Office
620 East Greene Street
Carlsbad, New Mexico 88220
575-234-5972

Permanent Abandonment of Production Zone Conditions of Approval

Failure to comply with the following Conditions of Approval may result in a Notice of Incidents of Noncompliance (INC) in accordance with 43 CFR 3163.1.

1. Plug back operations shall commence within **ninety (90)** days from this approval. **If you are unable to plug back the well by the 90th day provide this office, prior to the 90th day, with the reason for not meeting the deadline and a date when we can expect the well to be plugged back. Failure to do so will result in enforcement action.**
2. **Notification:** Contact the appropriate BLM office at least 24 hours prior to the commencing of any plug back operations. For wells in Eddy County, call 575-361-2822. For wells in Lea County, call 575-393-3612
3. **Blowout Preventers:** A blowout preventer (BOP), as appropriate, shall be installed before commencing any plugging operation. The BOP must be installed and maintained as per API and manufacturer recommendations. The minimum BOP requirement is a 2M system for a well not deeper than 9,090 feet; a 3M system for a well not deeper than 13,636 feet; and a 5M system for a well not deeper than 22,727 feet.
4. **Mud Requirement:** Mud shall be placed between all plugs. Minimum consistency of plugging mud shall be obtained by mixing at the rate of 25 sacks (50 pounds each) of gel per 100 barrels of brine water. Minimum nine (9) pounds per gallon.
5. **Cement Requirement:** Sufficient cement shall be used to bring any required plug to the specified depth and length. Any given cement volumes on the proposed plugging procedure are merely estimates and are not final. Unless specific approval is received, no plug except the surface plug shall be less than 25 sacks of cement. Any plug that requires a tag will have a minimum WOC time of 4 hours.
In lieu of a cement plug across perforations in a cased hole (not for any other plugs), a bridge plug set within 50 feet to 100 feet above the perforations shall be capped with 25 sacks of cement. **Before pumping cement on top of CIBP, tag will be required to verify depth. Based on depth, a tag of the cement may be deemed necessary.** Unless otherwise specified in the approved procedure, the cement plug shall consist of either Neat Class "C", for up to 7,500 feet of depth or Neat Class "H", for deeper than 7,500 feet plugs.
6. **Subsequent Plug back Reporting:** Within 30 days after plug back work is completed, file one original and three copies of the Subsequent Report, Form 3160-5 to BLM. The report should give in detail the manner in which the plug back work was carried out, the extent (by depths) of cement plugs placed, and the size and location (by depths) of casing left in the well. **Show date work was completed.** If plugging back to a new zone submit a Completion Report, form 3160-4 with the Subsequent Report.
7. **Trash:** All trash, junk and other waste material shall be contained in trash cages or bins to prevent scattering and will be removed and deposited in an approved sanitary landfill. Burial on site is not permitted.
8. **If well location is within the Timing Limitation Stipulation Area for Lesser Prairie-Chicken:** From March 1st through June 15th annually, abandonment activities will be allowed except between the hours from 3:00 am and 9:00 am. Normal vehicle use on existing roads will not be restricted.

Additional Engineering Conditions:

On top of CIBP at 11,290' and 11,079', 35 feet of cement is needed.