Form 3160-5
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Hobbs

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010

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.

HOBBS OCD

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

MAY 19 2014

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1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other	5. Lease Serial No. NMNM0392082A
	6. If Indian, Allottee or Tribe Name
	7. If Unit or CA/Agreement, Name and/or No.
	8. Well Name and No. HALLERTAU 4 FEDERAL 5H
2. Name of Operator CIMAREX ENERGY COMPANY OF CO Contact: DEYSI FAVELA E-Mail: dfavela@cimarex.com	9. API Well No. 30-025-41062-00-X1
3a. Address 600 NORTH MARIENFELD STREET, SUITE 600 MIDLAND, TX 79701	3b. Phone No. (include area code) Ph: 432-620-1964
	10. Field and Pool, or Exploratory WC-025 G08 S253235G
4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)* Sec 4 T26S R32E NWNW 330FNL 710FWL	11. County or Parish, and State LEA COUNTY, NM

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

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other Change to Original A PD
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ 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 recomplete 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 shall 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 shall be filed once testing has been completed. Final Abandonment Notices shall 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 Energy respectfully requests changes to the APD:

Directional Plan Change / BHL Move, Csg Change

Approved:
Production Casing 5 1/2" 17#, P-110 LTC/BT&C
BHL 330' FSL & 970' FWL
KOP 10172'
EOC 10919
MD 15136'
TVD 10679'
PH 11200'

SEE ATTACHED FOR CONDITIONS OF APPROVAL

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

Electronic Submission #244210 verified by the BLM Well Information System
For CIMAREX ENERGY COMPANY OF CO, sent to the Hobbs
Committed to AFMSS for processing by JENNIFER MASON on 05/07/2014 (14JAM0058SE)

Name *(Printed/Typed)* DEYSI FAVELA — Title DRILLING TECHNICIAN

Signature (Electronic Submission) — Date 05/02/2014

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

APPROVED

Approved By _____ Title _____ Date MAY 8 2014

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

BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

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.

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

MAY 22 2014

Additional data for EC transaction #244210 that would not fit on the form

32. Additional remarks, continued

Proposed:
Production Casing0 to 8,300 New 5 1/2" 20# LTC L-80
8,300 to 13,445 New 5 1/2" 20# BTC L-80
BHL 330' FSL & 824' FWL
KOP 8332'
EOC 9429'
MD 13445'
TVD 9020'
PH 13500'

Proposed Drilling Plan
After drilling and setting surface and intermediate casing, drill 8 3/4" hole to 13500' and log.
Pump 35 bbls 10.5 ppg spacer, followed by 174 sacks Type H, .5% CFR-3, .3% HR-601, 15.6 ppg, and 1.196 yield from 13500 to 13000. Pump 15.6 viscous pill from 13,000 to 12,150. Pump 35 bbls 10.5 ppg spacer, followed by 279 sacks Type H, .5% CFR-3, .3% HR-601, 15.6 ppg, and 1.196 yield from 12150' to 11350'. Circulate and WOC for 12 hours. Tag cement plug. Pump 17.5 viscous pill from 11350' to 8550'. Pump 35 bbls 8.4 spacer, followed by 352 sacks Type H, .7% CFR-3, .3% HR-601, 17.5 ppg, .948 yield. Kick off plug at 8,300' and drill curve and lateral to TD @ 13,445.

Production Cement
Lead 500 sacks 11 ppg 2.646 yield, 1323 cubic feet, TUNED LIGHT (TM) SYSTEM, 0.50 lbm CFR-3, 0.1250 lbm Poly-E-Flake
Tail will stay the same.

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DISTRICT I
1625 N. French Dr., Hobbs, NM 88240

DISTRICT II
1301 W. Grand Avenue, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102
Revised July 16, 2010

Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-025-41062		Wildcat Bone Spring

Property Code	Property Name	Well Number
	HALLERTAU 4 FEDERAL	5H

OGRID No.	Operator Name	Elevation
162683	CIMAREX ENERGY CO. OF COLORADO	3310'

Surface Location

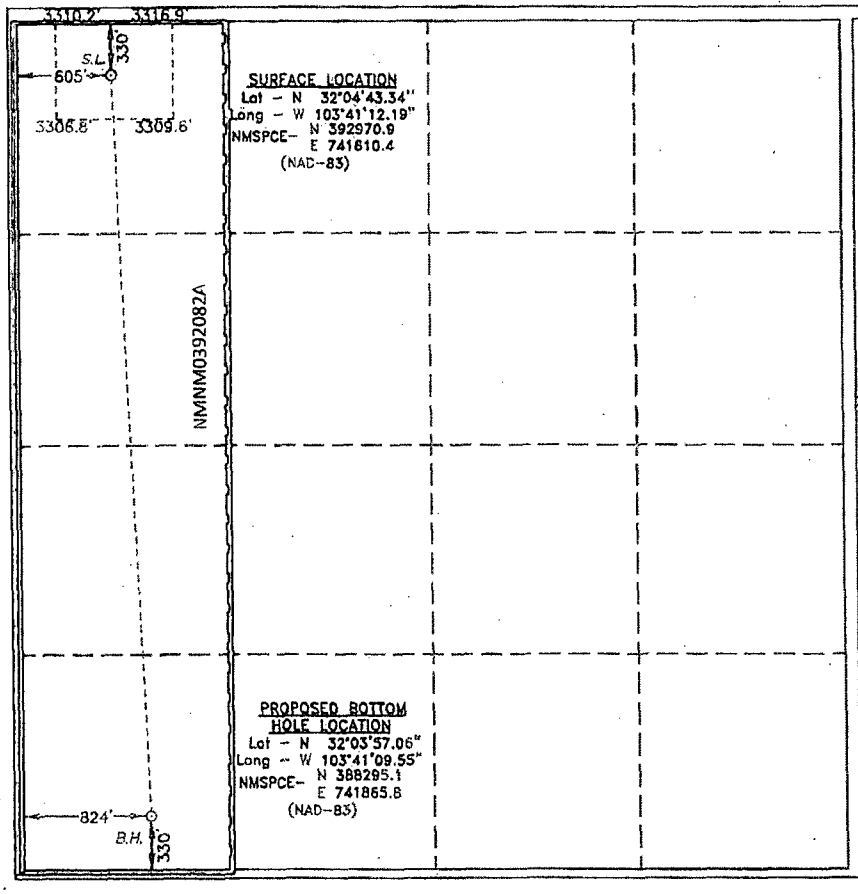
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	4	26 S	32 E		330	NORTH	605	WEST	LEA

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
M	4	26 S	32 E		330	SOUTH	824	WEST	LEA

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160			

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



OPERATOR CERTIFICATION

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.

Signature — Date: 4/29/2014

Deysi Favela
Printed Name

dfavela@cimarex.com
Email Address

SURVEYOR CERTIFICATION

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.

FEBRUARY 5, 2014
Date Surveyed

Signature & Seal of Professional Surveyor

NEW MEXICO — GARY L. JONES — 7977 — REGISTERED PROFESSIONAL SURVEYOR

Certificate No. Gary L. Jones 7977

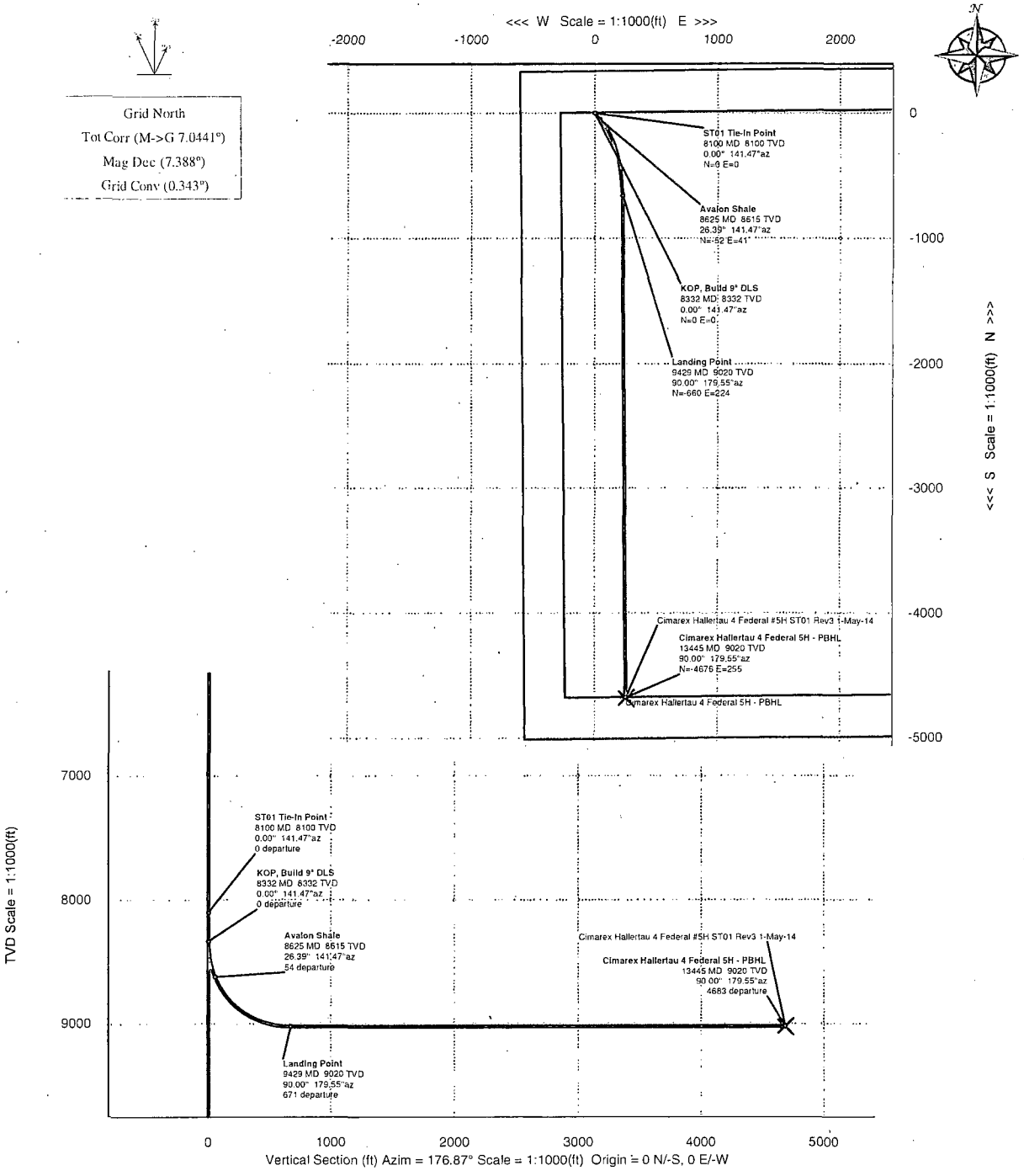
BASIN SURVEYS 25944

Cimarex Energy Co.

PATHFINDER
A Schlumberger Company

WELL	FIELD	STRUCTURE
Cimarex Hallertau 4 Federal #5H	NM Lea County (NAD 83)	Cimarex Hallertau 4 Federal #5

Magnetic Parameters				Surface Location				Miscellaneous	
Model: BGGM 2013	Dip: 59.844°	Date: May 01, 2014		Lat: N 32° 4' 49.344"	Northing: 392978.90 ftUS	Grid Conv: 0.343°		Slot:	Cimarex Hallertau 4 Federal #5H Ref: RKB(3330ft above MSL)
	Mag Dec: 7.388°	FS: 48205.5nT		Lon: W 103° 41' 12.192"	Easting: 741610.45 ftUS	Scale Fact: 0.99995593		Plan	Cimarex Hallertau 4 Federal #5H ST01 Rev3 (May 01, 2014)



Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+) / S(-)	E(+) / W(-)	DLS
ST01 Tie-In Point	8100.00	0.00	141.47	8100.00	0.00	0.00	0.00	
KOP, Build 9° DLS	8332.00	0.00	141.47	8332.00	0.00	0.00	0.00	0.00
Avalon Shale	8625.26	26.39	141.47	8615.00	54.09	-51.91	41.34	9.00
Landing Point	9429.31	90.00	179.55	9020.00	671.23	-660.00	224.00	9.00
Cimarex Hallertau 4 Federal 5H - PBHL	13445.45	90.00	179.55	9020.00	4682.99	-4676.02	255.41	0.00

PATHFINDER
A Schlumberger Company

Cimarex Hallertau 4 Federal #5H ST01 Rev3 1-May-14 Proposal Report

(Non-Def Plan)

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Report Date:	May 01, 2014 - 10:37 AM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	Cimarex Energy Co.	**Vertical Section Azimuth:**	176.874 ° (Grid North)
Field:	NM Lea County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Cimarex Hallertau 4 Federal #5H / Cimarex Hallertau 4 Federal #5H	**TVD Reference Datum:**	RKB
Well:	Cimarex Hallertau 4 Federal #5H	**TVD Reference Elevation:**	3330.000 ft above MSL
Borehole:	ST01	**Seabed / Ground Elevation:**	3310.000 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	7.388 °
Survey Name:	Cimarex Hallertau 4 Federal #5H ST01 Rev3 1-May-14	**Total Field Strength:**	48205.500 nT
Survey Date:	September 19, 2012	**Magnetic Dip Angle:**	59.944 °
Tort / AHD / DDI / ERD Ratio:	98.620 ° / 4731.158 ft / 5.842 / 0.525	**Declination Date:**	May 01, 2014
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Declination Model:**	BGGM 2013
Location Lat / Long:	N 32° 4' 43.34428", W 103° 41' 12.19165"	**North Reference:**	Grid North
Location Grid N/E Y/X:	N 392970.900 ftUS, E 741610.400 ftUS	**Grid Convergence Used:**	0.3434 °
CRS Grid Convergence Angle:	0.3434 °	**Total Corr Mag North->Grid North:**	7.0441 °
Grid Scale Factor:	0.99995503	**Local Coord Referenced To:**	Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)
ST01 Tie-In Point	8100.00	0.00	141.47	8100.00	0.00	0.00	0.00	392970.90	741610.40	N 32 4 43.34	W 103 41 12.19	0.00	0.00	N/A
	8200.00	0.00	141.47	8200.00	0.00	0.00	0.00	392970.90	741610.40	N 32 4 43.34	W 103 41 12.19	0.00	0.00	0.00
	8300.00	0.00	141.47	8300.00	0.00	0.00	0.00	392970.90	741610.40	N 32 4 43.34	W 103 41 12.19	0.00	0.00	0.00
KOP, Build 9° DLS	8332.00	0.00	141.47	8332.00	0.00	0.00	0.00	392970.90	741610.40	N 32 4 43.34	W 103 41 12.19	0.00	0.00	0.00
	8400.00	6.12	141.47	8399.87	2.96	-2.84	2.26	392968.06	741612.66	N 32 4 43.32	W 103 41 12.17	3.63	141.47	9.00
	8500.00	15.12	141.47	8498.06	17.96	-17.24	13.73	392953.66	741624.13	N 32 4 43.17	W 103 41 12.03	22.04	141.47	9.00
	8600.00	24.12	141.47	8592.15	45.31	-43.48	34.62	392927.42	741645.02	N 32 4 42.91	W 103 41 11.79	55.58	141.47	9.00
Avalon Shale	*8625.26*	*26.39*	*141.47*	*8615.00*	*54.09*	*-51.91*	*41.34*	*392918.99*	*741651.73*	*N 32 4 42.83*	*W 103 41 11.71*	*66.36*	*141.47*	*9.00*
	8700.00	33.12	141.47	8679.85	84.31	-80.91	64.43	392889.99	741674.83	N 32 4 42.54	W 103 41 11.45	103.43	141.47	9.00
	8738.92	36.62	141.47	8711.77	102.44	-98.32	78.29	392872.59	741688.68	N 32 4 42.37	W 103 41 11.29	125.68	141.47	9.00
	8740.50	36.62	141.47	8713.04	103.21	-99.06	78.87	392871.85	741689.27	N 32 4 42.36	W 103 41 11.28	126.62	141.47	0.00
	8800.00	40.60	147.22	8759.54	134.53	-129.24	100.43	392841.66	741710.82	N 32 4 42.06	W 103 41 11.03	163.67	142.15	9.00
	8900.00	47.80	154.99	8831.23	197.31	-190.29	133.77	392780.61	741744.17	N 32 4 41.45	W 103 41 10.65	232.61	144.89	9.00
	9000.00	55.42	161.13	8893.32	271.45	-262.96	162.81	392707.95	741773.20	N 32 4 40.73	W 103 41 10.32	309.29	148.24	9.00
	9100.00	63.29	166.21	8944.29	355.14	-345.46	186.82	392625.45	741797.21	N 32 4 39.91	W 103 41 10.04	392.74	151.60	9.00
	9200.00	71.31	170.63	8982.66	446.30	-435.76	205.21	392535.16	741815.60	N 32 4 39.02	W 103 41 9.84	481.66	154.78	9.00
	9300.00	79.43	174.64	9008.10	542.70	-531.62	217.54	392439.30	741827.93	N 32 4 38.07	W 103 41 9.70	574.41	157.75	9.00
	9400.00	87.60	178.45	9019.39	641.95	-630.70	223.49	392340.23	741833.88	N 32 4 37.09	W 103 41 9.64	669.13	160.49	9.00
Landing Point	9429.31	90.00	179.55	9020.00	671.23	-660.00	224.00	392310.93	741834.39	N 32 4 36.80	W 103 41 9.63	696.98	161.25	9.00
	9500.00	90.00	179.55	9020.00	741.85	-730.69	224.56	392240.25	741834.94	N 32 4 36.10	W 103 41 9.63	764.41	162.92	0.00
	9600.00	90.00	179.55	9020.00	841.74	-830.68	225.34	392140.26	741835.73	N 32 4 35.11	W 103 41 9.63	860.71	164.82	0.00
	9700.00	90.00	179.55	9020.00	941.63	-930.68	226.13	392040.26	741836.51	N 32 4 34.12	W 103 41 9.63	957.76	166.34	0.00
	9800.00	90.00	179.55	9020.00	1041.52	-1030.68	226.91	391940.27	741837.30	N 32 4 33.13	W 103 41 9.63	1055.36	167.58	0.00
	9900.00	90.00	179.55	9020.00	1141.41	-1130.67	227.69	391840.28	741838.08	N 32 4 32.14	W 103 41 9.62	1153.37	168.61	0.00
	10000.00	90.00	179.55	9020.00	1241.30	-1230.67	228.48	391740.29	741838.87	N 32 4 31.15	W 103 41 9.62	1251.70	169.48	0.00
	10100.00	90.00	179.55	9020.00	1341.19	-1330.67	229.26	391640.29	741839.65	N 32 4 30.16	W 103 41 9.62	1350.27	170.22	0.00
	10200.00	90.00	179.55	9020.00	1441.08	-1430.67	230.05	391540.30	741840.44	N 32 4 29.17	W 103 41 9.62	1449.04	170.87	0.00
	10300.00	90.00	179.55	9020.00	1540.97	-1530.66	230.83	391440.31	741841.22	N 32 4 28.18	W 103 41 9.62	1547.97	171.42	0.00
	10400.00	90.00	179.55	9020.00	1640.86	-1630.66	231.62	391340.32	741842.01	N 32 4 27.19	W 103 41 9.61	1647.03	171.92	0.00
	10500.00	90.00	179.55	9020.00	1740.76	-1730.66	232.40	391240.33	741842.79	N 32 4 26.21	W 103 41 9.61	1746.19	172.35	0.00

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)
	10600.00	90.00	179.55	9020.00	1840.65	-1830.65	233.18	391140.33	741843.57	N 32 4 25.22	W 103 41 9.61	1845.44	172.74	0.00
	10700.00	90.00	179.55	9020.00	1940.54	-1930.65	233.97	391040.34	741844.36	N 32 4 24.23	W 103 41 9.61	1944.78	173.09	0.00
	10800.00	90.00	179.55	9020.00	2040.43	-2030.65	234.75	390940.35	741845.14	N 32 4 23.24	W 103 41 9.60	2044.17	173.41	0.00
	10900.00	90.00	179.55	9020.00	2140.32	-2130.64	235.53	390840.36	741845.92	N 32 4 22.25	W 103 41 9.60	2143.62	173.69	0.00
	11000.00	90.00	179.55	9020.00	2240.21	-2230.64	236.32	390740.36	741846.70	N 32 4 21.26	W 103 41 9.60	2243.12	173.95	0.00
	11100.00	90.00	179.55	9020.00	2340.10	-2330.64	237.10	390640.37	741847.49	N 32 4 20.27	W 103 41 9.60	2342.67	174.19	0.00
	11200.00	90.00	179.55	9020.00	2439.99	-2430.63	237.88	390540.38	741848.27	N 32 4 19.28	W 103 41 9.60	2442.25	174.41	0.00
	11300.00	90.00	179.55	9020.00	2539.88	-2530.63	238.66	390440.39	741849.05	N 32 4 18.29	W 103 41 9.59	2541.86	174.61	0.00
	11400.00	90.00	179.55	9020.00	2639.77	-2630.63	239.45	390340.40	741849.83	N 32 4 17.30	W 103 41 9.59	2641.50	174.80	0.00
	11500.00	90.00	179.55	9020.00	2739.66	-2730.63	240.23	390240.40	741850.62	N 32 4 16.31	W 103 41 9.59	2741.17	174.97	0.00
	11600.00	90.00	179.55	9020.00	2839.55	-2830.62	241.01	390140.41	741851.40	N 32 4 15.32	W 103 41 9.59	2840.86	175.13	0.00
	11700.00	90.00	179.55	9020.00	2939.44	-2930.62	241.79	390040.42	741852.18	N 32 4 14.33	W 103 41 9.59	2940.58	175.28	0.00
	11800.00	90.00	179.55	9020.00	3039.34	-3030.62	242.57	389940.43	741852.96	N 32 4 13.34	W 103 41 9.58	3040.31	175.42	0.00
	11900.00	90.00	179.55	9020.00	3139.23	-3130.61	243.36	389840.43	741853.74	N 32 4 12.35	W 103 41 9.58	3140.06	175.56	0.00
	12000.00	90.00	179.55	9020.00	3239.12	-3230.61	244.14	389740.44	741854.53	N 32 4 11.36	W 103 41 9.58	3239.82	175.68	0.00
	12100.00	90.00	179.55	9020.00	3339.01	-3330.61	244.92	389640.45	741855.31	N 32 4 10.37	W 103 41 9.58	3339.60	175.79	0.00
	12200.00	90.00	179.55	9020.00	3438.90	-3430.60	245.70	389540.46	741856.09	N 32 4 9.38	W 103 41 9.58	3439.39	175.90	0.00
	12300.00	90.00	179.55	9020.00	3538.79	-3530.60	246.48	389440.46	741856.87	N 32 4 8.39	W 103 41 9.57	3539.19	176.01	0.00
	12400.00	90.00	179.55	9020.00	3638.68	-3630.60	247.26	389340.47	741857.65	N 32 4 7.40	W 103 41 9.57	3639.01	176.10	0.00
	12500.00	90.00	179.55	9020.00	3738.57	-3730.59	248.04	389240.48	741858.43	N 32 4 6.41	W 103 41 9.57	3738.83	176.20	0.00
	12600.00	90.00	179.55	9020.00	3838.46	-3830.59	248.82	389140.49	741859.21	N 32 4 5.43	W 103 41 9.57	3838.66	176.28	0.00
	12700.00	90.00	179.55	9020.00	3938.35	-3930.59	249.60	389040.50	741859.99	N 32 4 4.44	W 103 41 9.56	3938.51	176.37	0.00
	12800.00	90.00	179.55	9020.00	4038.24	-4030.59	250.38	388940.50	741860.77	N 32 4 3.45	W 103 41 9.56	4038.36	176.45	0.00
	12900.00	90.00	179.55	9020.00	4138.13	-4130.58	251.16	388840.51	741861.55	N 32 4 2.46	W 103 41 9.56	4138.21	176.52	0.00
	13000.00	90.00	179.55	9020.00	4238.02	-4230.58	251.94	388740.52	741862.33	N 32 4 1.47	W 103 41 9.56	4238.07	176.59	0.00
	13100.00	90.00	179.55	9020.00	4337.91	-4330.58	252.72	388640.53	741863.11	N 32 4 0.48	W 103 41 9.56	4337.94	176.66	0.00
	13200.00	90.00	179.55	9020.00	4437.81	-4430.57	253.50	388540.53	741863.89	N 32 3 59.49	W 103 41 9.55	4437.82	176.73	0.00
	13300.00	90.00	179.55	9020.00	4537.70	-4530.57	254.28	388440.54	741864.67	N 32 3 58.50	W 103 41 9.55	4537.70	176.79	0.00
	13400.00	90.00	179.55	9020.00	4637.59	-4630.57	255.06	388340.55	741865.45	N 32 3 57.51	W 103 41 9.55	4637.59	176.85	0.00
Cimarex Hallertau 4 Federal 5H - PBHL	13445.45	90.00	179.55	9020.00	4682.99	-4676.02	255.41	388295.10	741865.80	N 32 3 57.06	W 103 41 9.55	4682.99	176.87	0.00

Survey Type: Non-Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma
Survey Program:

Description	MD From (ft)	MD To (ft)	EOU Freq (ft)		Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	0.000	20.000		1/100.000	30.000	30.000	SLB_MWD-POOR-Depth Only	Pilot Borehole / Cimarex Hallertau 4 Federal #5H Pilot Rev0 mcs
	20.000	8100.000		1/100.000	30.000	30.000	SLB_MWD-POOR	Pilot Borehole / Cimarex Hallertau 4 Federal #5H Pilot Rev0 mcs
	8100.000	13445.453		1/100.000	30.000	30.000	SLB_MWD-POOR	ST01 / Cimarex Hallertau 4 Federal #5H ST01 Rev3 1-May-

CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Cimarex Energy Co. of Colorado**
LEASE NO.:	**NMNM-0392082A**
WELL NAME & NO.:	**Hallertau 4 Federal 5H**
SURFACE HOLE FOOTAGE:	**0330' FNL & 0710' FWL**
BOTTOM HOLE FOOTAGE	**0330' FSL & 0970' FWL**
LOCATION:	**Section 04, T. 26 S., R 32 E., NMPM**
COUNTY:	**Lea County, New Mexico**

I. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

☒ **Lea County**
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240,
(575) 393-3612

1. A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Delaware** formation. **As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.**

2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a "Major" violation.**

3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.

4. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well– vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.).

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Wait on cement (WOC) time prior to drilling out for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. IF OPERATOR DOES NOT HAVE THE WELL SPECIFIC CEMENT DETAILS ONSITE PRIOR TO PUMPING THE CEMENT FOR EACH CASING STRING, THE WOC WILL BE 30 HOURS. See individual casing strings for details regarding lead cement slurry requirements.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

Possible water and brine flows in the Salado, Castile, Delaware, and Bone Spring. Possible lost circulation in the Red Beds, Delaware and Bone Springs formations.

1. The **13-3/8** inch surface casing shall be set at approximately **1210** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered, set casing at least 25 feet above the salt.**

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.

c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

d. If cement falls back, remedial cementing will be done prior to drilling out that string.

Intermediate casing shall be kept fluid filled while running into hole to meet minimum collapse requirements.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

   ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above.

Centralizers approved as written.

Pilot hole is approved as written. BLM is to be contacted (575-393-3612) prior to tag of the bottom two plugs. Operator can set one plug from bottom of pilot hole to kick-off point and save the WOC time for tagging the first plug.

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:

   ☒ Cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification. **Excess calculates to 4% - Additional cement may be required.**

4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. **Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** psi.

    a. **For surface casing only:** If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.

4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** intermediate casing shoe shall be **5000 (5M)** psi. **5M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.**

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (18 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

d. The results of the test shall be reported to the appropriate BLM office.

e. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**

f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

E. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

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