

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

APPLICATION OF CIMAREX ENERGY CO.
FOR A NON-STANDARD OIL SPACING AND
PRORATION UNIT AND FOR COMPULSORY
POOLING, CHAVES COUNTY, NEW MEXICO.

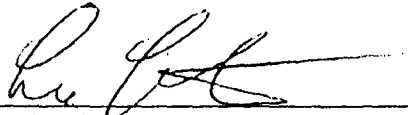
Case No. 14,416

AFFIDAVIT OF LEE CATALANO

COUNTY OF MIDLAND)
) ss.
STATE OF TEXAS)

Lee Catalano, being duly sworn upon his oath, deposes and states:

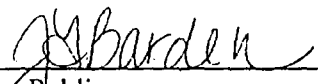
1. I am over the age of 18, and have personal knowledge of the matters stated herein.
2. I am a geologist for Cimarex Energy Co. ("Cimarex").
3. Exhibit A is a structure map on top of the Hueco (Wolfcamp) formation. The formation dips gently to the southeast. Exhibit A also contains production data from existing wells in the pool.
4. Exhibit B is a cross section which shows the productive interval and stratigraphic target for horizontal Abo/Wolfcamp wells in the area.
5. Attached as Exhibit C is the horizontal drilling plan for the subject well. A horizontal wellbore will test a greater reservoir length, increasing the chances for an economic completion.
6. All four quarter-quarter sections in the well unit are prospective in the Abo/Wolfcamp formation, and Cimarex anticipates producing reserves from each quarter-quarter section.



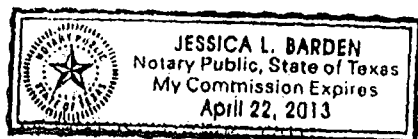
Lee Catalano

SUBSCRIBED AND SWORN TO before me this 6th day of January, 2010 by Lee Catalano.

My Commission Expires: 4/22/2013



Notary Public



Oil Conservation Division
Case No. _____
Exhibit No. 2



North
A

ELEV. 4071
3079
MARSHALL & MARSHALL INCORPORATED
CAMP DALL - WYOMING
NEELIN FEDERAL COM
THIS IS THE
0001 FEB 2007 PM

3007
O
CHARTER ENERGY OF CO
FRANKLIN 18 FEE
THIS IS THE
2007 FEB 2007 PM

ELEV. 4041
3033
CHARTER ENERGY OF CO
CAMP DALL - WYOMING
MIDWAY 17 FEDERAL
THIS IS THE
1997 FEB 2007 PM

ELEV. 4042
3030
O
CHARTER ENERGY OF CO
FRANKLIN 18 FEDERAL COM
THIS IS THE
2007 FEB 2007 PM

South
A'

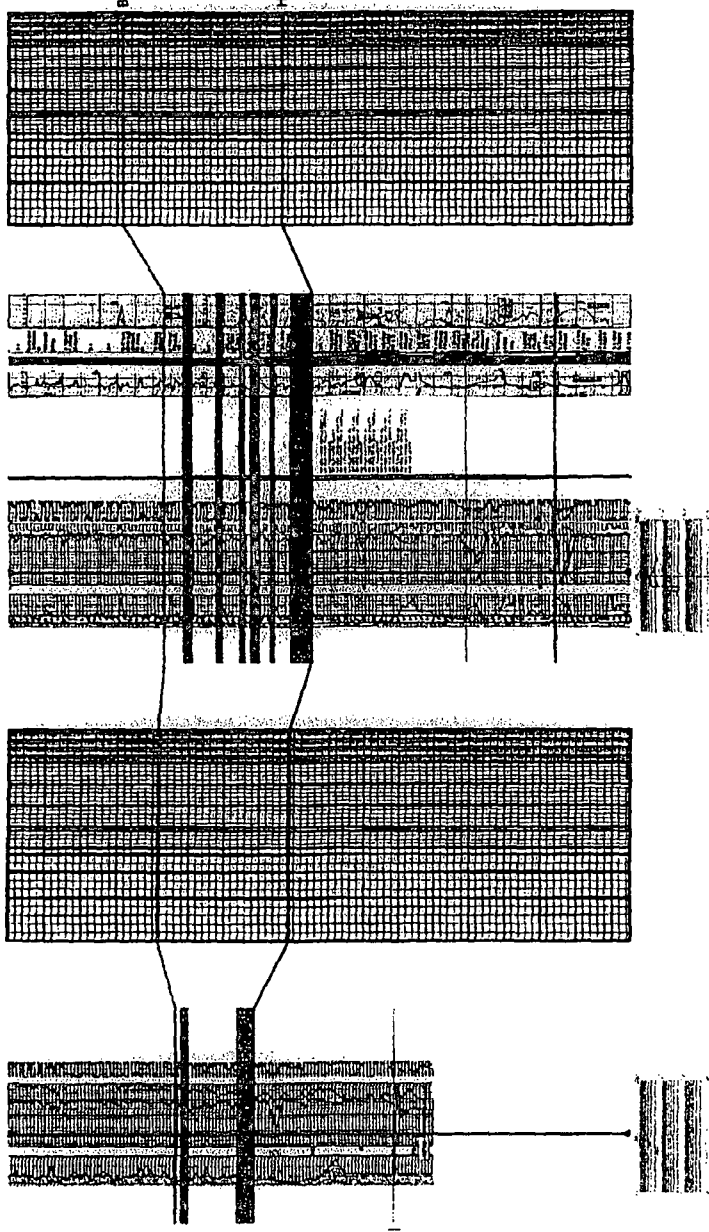


EXHIBIT **B**

CIMAREX ENERGY
Caprock Area
Lower Abso/Wolfcamp
Struct X-Section
Chaves Co., NM
Franklin 18 Lease
By: Lee Coleman January 2, 2007 1:13 PM

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0135
Expires July 31, 1998

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 reverse side

1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other	
2. Name of Operator Cimarex Energy Co. of Colorado	
3a. Address 600 N. Marienfeld St., Ste. 600; Midland, TX 79701	3b. Phone No. (include area code) 432-571-7800
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) SHL 375 FSL & 375 FEL 18-15S-31E BHL 375 FSL & 375 FWL	

5. Lease Serial No.
SHL Fee BHL Fee
6. If Indian, Allottee or Tribe Name
7. If Unit or CA/Agreement, Name and/or No. Pending
8. Well Name and No. Franklin 18 Federal Com No. 4
9. API Well No. 30-005-29090
10. Field and Pool, or Exploratory Area Abo Wildcat
11. County or Parish, State Chaves 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 <u>Change BHL</u>
	☐ 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, included estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat 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 recompleat 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.)

The achieve the preferred orientation for Intersecting fractures, Cimarex has changed the BHL for this well as shown below:

Permitted Location

18-15S-31E
SHL 375 FSL & 375 FEL
BHL 375 FSL & 375 FWL
Chaves County, NM

New Proposed Location

18-15S-31E
SHL 375 FSL & 375 FEL
BHL 330 FNL & 375 FEL
Chaves County, NM

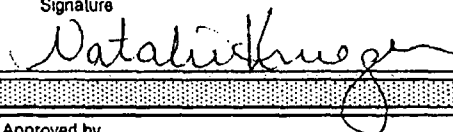
EXHIBIT C

Please see attached revised plat, new preliminary directional plan, and revised drilling plans.

14. I hereby certify that the foregoing is true and correct
Name (Printed/Typed)

Natalie Krueger

Signature



Title

Regulatory

Date

November 19, 2009

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Title

Date

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

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any falso, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on reverse)

DISTRICT I
1626 K. French Dr., Hobbs, NM 88240

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

DISTRICT III
1000 Rio Bravos 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

Form C-102
Revised October 12, 2006

Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 8 Copies

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-005-29090	Pool Code	Pool Name Abo Wildcat
Property Code 37526	Property Name FRANKLIN "18" FEDERAL COM	Well Number 4
OGRID No. 162683	Operator Name CIMAREX ENERGY CO. OF COLORADO	Elevation 4431'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	18	15 S	31 E		375	SOUTH	375	EAST	CHAVES

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
A	18	15 S	31 E		330	NORTH	375	EAST	CHAVES

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160		P	

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

BOTTOM HOLE LOCATION Lat - N33°01'20.05" Long - W103°51'14.07" NMSPC - N 735961.787 E 888281.632 (NAD-83) BHL 330 FNL & 375 FEL Proposed Producing Interval EOC 565 FSL & 376 FEL SHL & P.P. Abo 375 FSL & 375 FEL SURFACE LOCATION Lat - N33°00'34.79" Long - W103°51'14.08" NMSPC - N 731387.6 E 888302.0 (NAD-83)	LC-064900 Fee Surface & Minerals	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 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. <u>Zeno Farris</u> 11/19/2009 Signature Date Zeno Farris Printed Name 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. MAY 19 2008 Date Surveyed <u>Gary L. Jones</u> Signature Professional Surveyor 7977 Certificate No. Gary L. Jones BASIN SURVEYS
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Cimarex Energy Co.

Location: Chaves County, NM
Field: (Franklin) Sec 18, T15S, R31E
Facility: Franklin 18 Fed Com No. 4H

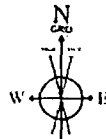
Slot: No. 4H SHL
Well: No. 4H
Wellbore: No. 4H PWB

**BAKER
HUGHES**
INTEQ

Easting (ft)
Scale 1 inch = 500 ft
-900 -800 -700 -600 -500 -400 -300 -200 -100 0 100 200 300 400 500 600

No. 4H PBHL
330 FNL
375 FEL

No. 4H PBHL : 8615.00' TVD, 4574.50' N, 20.37' W

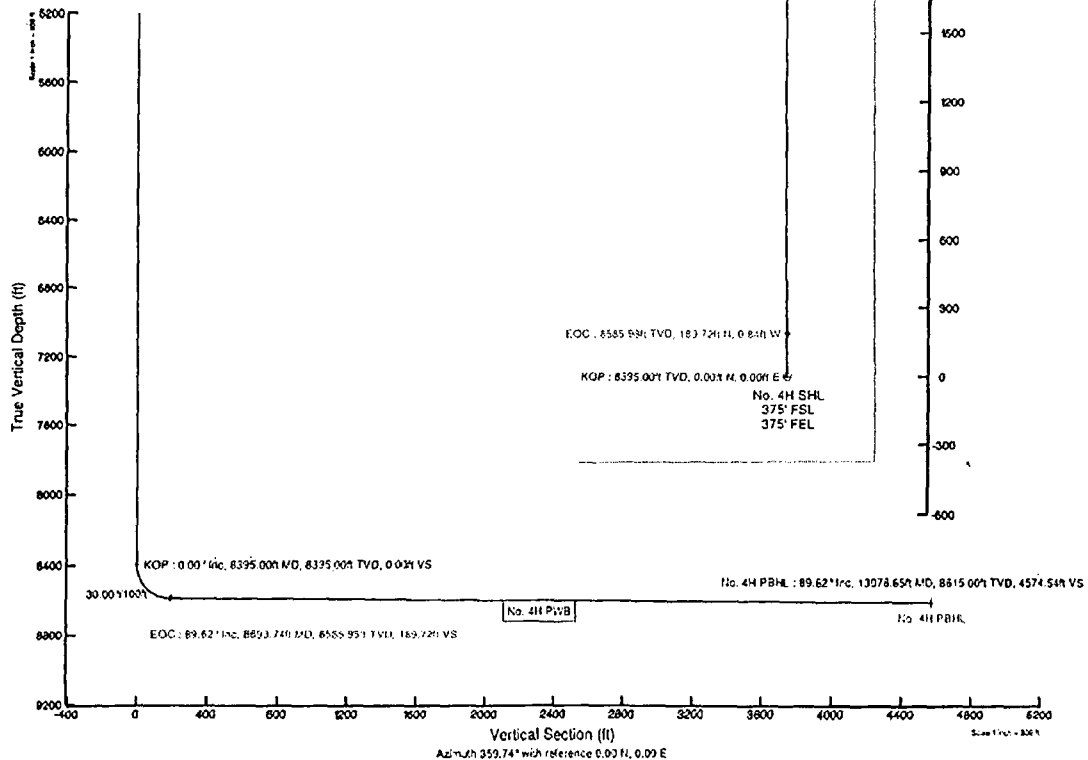


EGGM (1945.0 to 2009.0) Dp: 60.95' Field: 43373.5 n.t.
Magnetic North is 8.18 degrees East of True North (as of 7/25/2008)
Grid North is 0.25 degrees East of True North
To correct azimuth from True to Grid subtract 0.25 degrees
To correct azimuth from Magnetic to Grid add 7.92 degrees
For example, if the Magnetic North Azimuth = 90 degrees, then the Grid North Azimuth = 90 + 7.92 = 97.92

Well Reference and Data	
True vertical depth is referenced to Mean Sea Level (MSL)	Grid System: NAD83 (2011) New Mexico State Plane, Eastern Zone (NAD83, UTM)
Measured depth is referenced to Mean Sea Level (MSL)	North Arrow: True North
Log depth is referenced to Mean Sea Level (MSL)	Log Depth: True Depth
Mean Sea Level is the reference for the datum	Created by: Baker Hughes INTEQ on 11/11/2011

Well Profile Data

Depth (ft)	MD (ft)	Log (ft)	AS (ft)	TVD (ft)	LOGAL (ft)	LOGAL (ft)	DLS (ft)	VS (ft)
True On	0.00	0.000	359.745	0.00	0.00	0.00	0.00	0.00
KOP	8395.00	0.000	359.745	8395.00	0.00	0.00	0.00	0.00
EOC	8893.74	88.621	359.745	8865.93	199.72	0.84	32.00	189.72
No. 4H PBHL	13078.65	89.621	359.745	8915.00	4574.50	-20.37	0.00	4574.50





Planned Wellpath Report

Prelim_2

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INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 4H SHL
Area	Chaves County, NM	Well	No. 4H
Field	(Franklin) Sec 18, T15S, R31E	Wellbore	No. 4H PWB
Facility	Franklin 18 Fed Com No. 4H		

REPORT SETUP INFORMATION			
Projection System	NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet	Software System	WellArchitect® 2.0
North Reference	Grid	User	Victor Hernandez
Scale	0.999934	Report Generated	11/18/2009 at 5:00:10 PM
Convergence at slot	0.26° East	Database/Source file	WA_Midland/No. 4H_PWB.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[USft]	Northing[USft]	Latitude	Longitude
Slot Location	0.00	0.00	688302.00	731387.60	33°00'34.792"N	103°51'14.077"W
Facility Reference Pt			688302.00	731387.60	33°00'34.792"N	103°51'14.077"W
Field Reference Pt			688326.60	735962.00	33°01'20.052"N	103°51'13.544"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Rig on No. 4H SHL (RT) to Facility Vertical Datum	18.00ft
Horizontal Reference Pt	Facility Center	Rig on No. 4H SHL (RT) to Mean Sea Level	4449.00ft
Vertical Reference Pt	Rig on No. 4H SHL (RT)	Facility Vertical Datum to Mud Line (Facility)	0.00ft
MD Reference Pt	Rig on No. 4H SHL (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	359.74°



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION			
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Facility	Franklin 18 Fed Com No. 4H		

WELLPATH DATA (50 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	DLS [°/100ft]	Comments
0.00	0.000	359.745	0.00	0.00	0.00	0.00	688302.00	731387.60	0.00	Tie On
8395.00	0.000	359.745	8395.00	0.00	0.00	0.00	688302.00	731387.60	0.00	KOP
8495.00†	30.000	359.745	8490.49	25.59	25.59	-0.11	688301.89	731413.19	30.00	
8595.00†	60.000	359.745	8560.40	95.49	95.49	-0.43	688301.57	731483.09	30.00	
8695.00†	89.621	359.745	8585.98	189.72	189.72	-0.84	688301.16	731577.31	30.00	EOC
8695.00†	89.621	359.745	8585.99	190.99	190.98	-0.85	688301.15	731578.57	0.00	
8795.00†	89.621	359.745	8586.65	290.98	290.98	-1.30	688300.70	731678.56	0.00	
8895.00†	89.621	359.745	8587.31	390.98	390.98	-1.74	688300.26	731778.55	0.00	
8995.00†	89.621	359.745	8587.98	490.98	490.97	-2.19	688299.81	731878.54	0.00	
9095.00†	89.621	359.745	8588.64	590.98	590.97	-2.63	688299.37	731978.53	0.00	
9195.00†	89.621	359.745	8589.30	690.97	690.97	-3.08	688298.92	732078.52	0.00	
9295.00†	89.621	359.745	8589.96	790.97	790.96	-3.52	688298.48	732178.51	0.00	
9395.00†	89.621	359.745	8590.62	890.97	890.96	-3.97	688298.03	732278.50	0.00	
9495.00†	89.621	359.745	8591.28	990.97	990.96	-4.41	688297.59	732378.49	0.00	
9595.00†	89.621	359.745	8591.95	1090.97	1090.96	-4.86	688297.14	732478.48	0.00	
9695.00†	89.621	359.745	8592.61	1190.96	1190.95	-5.30	688296.70	732578.47	0.00	
9795.00†	89.621	359.745	8593.27	1290.96	1290.95	-5.75	688296.25	732678.46	0.00	
9895.00†	89.621	359.745	8593.93	1390.96	1390.95	-6.19	688295.81	732778.45	0.00	
9995.00†	89.621	359.745	8594.59	1490.96	1490.94	-6.64	688295.36	732878.44	0.00	
10095.00†	89.621	359.745	8595.25	1590.96	1590.94	-7.08	688294.92	732978.43	0.00	
10195.00†	89.621	359.745	8595.92	1690.95	1690.94	-7.53	688294.47	733078.42	0.00	
10295.00†	89.621	359.745	8596.58	1790.95	1790.93	-7.97	688294.03	733178.41	0.00	
10395.00†	89.621	359.745	8597.24	1890.95	1890.93	-8.42	688293.58	733278.40	0.00	
10495.00†	89.621	359.745	8597.90	1990.95	1990.93	-8.87	688293.14	733378.39	0.00	
10595.00†	89.621	359.745	8598.56	2090.94	2090.92	-9.31	688292.69	733478.38	0.00	
10695.00†	89.621	359.745	8599.23	2190.94	2190.92	-9.76	688292.24	733578.37	0.00	
10795.00†	89.621	359.745	8599.89	2290.94	2290.92	-10.20	688291.80	733678.36	0.00	
10895.00†	89.621	359.745	8600.55	2390.94	2390.91	-10.65	688291.35	733778.35	0.00	
10995.00†	89.621	359.745	8601.21	2490.94	2490.91	-11.09	688290.91	733878.34	0.00	
11095.00†	89.621	359.745	8601.87	2590.93	2590.91	-11.54	688290.46	733978.33	0.00	

Drilling Plan Revisions
Franklin 18 Federal Com No. 4
18-15S-31E
SHL 375 FSL & 375 FEL BHL 330 FNL & 375 FEL
Chaves County, NM

Drilling Plan

After drilling and setting surface and intermediate casing, drill to vertical TD 9500' and log. Set 7" casing to 8335' and cross over to 2½" 2000 psi IJ fiberglass tubing underneath to 9500' and cement in place. Drill out of the bottom of the 7" with a 6½" bit and through cement and fiberglass tubing to KOP @ 8395' and kick off to drill the lateral. The fiberglass tubing effectively circulates cement to surface and plugs back the open hole.

Drill to lateral TD (13079' MD, 8615' TVD). Run 4½" PEAK liner from RSB packer @ 8295' to TD @ 13079.' Run 4½" LTC from TD to EOC and BTC from liner hanger to EOC. Frac through PEAK completion liner.

Casing Plan

String	Hole Size	Depth	Casing OD	Weight	Collar	Grade
Surface	17½"	0' to 340'	New 13¾"	48#	STC	H-40
Intermediate	12¾"	0' to 3950'	New 9¾"	40#	LTC	J/K-55
Production	8¾"	0' to 8335'	New 7"	26#	LTC	P-110
Fiberglass	8¾"	8335' to 9500'	New 2½"	2.18#		IJ
Lateral Pt 1	6¾"	8295' to 8694'	New 4½"	11.6#	BTC	P-110
Lateral Pt 2	6¾"	8694' to 13079'	New 4½"	11.6#	LTC	P-110

Cementing Plan

Surface Lead: 400 sx Premium Plus + 2% CaCl₂ (wt 14.8, yld 1.35)
Tail: 400 sx Premium Plus + 2% CaCl₂ (wt 14.8, yld 1.35)
TOC Surface

Intermediate Lead: 950 sx Econocem + 3% Salt + 2% CaCl₂ + 3 lbm/sk Gilsonite (wt 11.7, yld 2.06)
Tail: 215 sks Premium Plus + 1% CaCl₂ (wt 14.8, yld 1.34)
TOC Surface

Production Lead: 450 sx EconoCem + 3% Salt + 5lbm/sk Gilsonite (yld 1.71)
Tail: 335 sx Halcem (wt 14.8, yld 1.34)
TOC 3750'

Lateral No cement needed. Peak completion assembly.

Fresh water zones will be protected by setting 13¾" casing at 340' and cementing to surface. Hydrocarbon zones will be protected by setting 9¾" casing at 3950' and cementing to surface, and by setting 7" casing at 8335' and fiberglass to 9500' and cementing to 3750.'



Planned Wellpath Report

Prelim_2
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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 4H SHL
Area	Chaves County, NM	Well	No. 4H
Field	(Franklin) Sec 18, T15S, R31E	Wellbore	No. 4H PWB
Facility	Franklin 18 Fed Com No. 4H		

WELLPATH DATA (50 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	DLS [°/100ft]	Comments
11195.00†	89.621	359.745	8602.53	2690.93	2690.90	-11.98	688290.02	734078.32	0.00	
11295.00†	89.621	359.745	8603.20	2790.93	2790.90	-12.43	688289.57	734178.31	0.00	
11395.00†	89.621	359.745	8603.86	2890.93	2890.90	-12.87	688289.13	734278.30	0.00	
11495.00†	89.621	359.745	8604.52	2990.92	2990.89	-13.32	688288.68	734378.29	0.00	
11595.00†	89.621	359.745	8605.18	3090.92	3090.89	-13.76	688288.24	734478.28	0.00	
11695.00†	89.621	359.745	8605.84	3190.92	3190.89	-14.21	688287.79	734578.27	0.00	
11795.00†	89.621	359.745	8606.51	3290.92	3290.89	-14.65	688287.35	734678.26	0.00	
11895.00†	89.621	359.745	8607.17	3390.92	3390.88	-15.10	688286.90	734778.25	0.00	
11995.00†	89.621	359.745	8607.83	3490.91	3490.88	-15.54	688286.46	734878.24	0.00	
12095.00†	89.621	359.745	8608.49	3590.91	3590.88	-15.99	688286.01	734978.23	0.00	
12195.00†	89.621	359.745	8609.15	3690.91	3690.87	-16.43	688285.57	735078.22	0.00	
12295.00†	89.621	359.745	8609.81	3790.91	3790.87	-16.88	688285.12	735178.21	0.00	
12395.00†	89.621	359.745	8610.48	3890.90	3890.87	-17.33	688284.68	735278.20	0.00	
12495.00†	89.621	359.745	8611.14	3990.90	3990.86	-17.77	688284.23	735378.19	0.00	
12595.00†	89.621	359.745	8611.80	4090.90	4090.86	-18.22	688283.79	735478.18	0.00	
12695.00†	89.621	359.745	8612.46	4190.90	4190.86	-18.66	688283.34	735578.17	0.00	
12795.00†	89.621	359.745	8613.12	4290.90	4290.85	-19.11	688282.89	735678.16	0.00	
12895.00†	89.621	359.745	8613.78	4390.89	4390.85	-19.55	688282.45	735778.15	0.00	
12995.00†	89.621	359.745	8614.45	4490.89	4490.85	-20.00	688282.00	735878.14	0.00	
13078.65	89.621	359.745	8615.00†	4574.54	4574.50	-20.37	688281.63	735961.79	0.00	No. 4H PWB



Planned Wellpath Report

Prelim_2

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INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 4H SHL
Area	Chaves County, NM	Well	No. 4H
Field	(Franklin) Sec 18, T15S, R31E	Wellbore	No. 4H PWB
Facility	Franklin 18 Fed Com No. 4H		

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
1) No. 4H PBHL	13078.65	8615.00	4574.50	20.37	688281.63	735961.79	33°01'20.052"N	103°51'14.072"W	point

SURVEY PROGRAM Ref Wellbore: No. 4H PWB Ref Wellpath: Prelim_2

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
18.00	13078.65	NaviTrak (Standard)		No. 4H PWB