

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD-ARTESLA

MAY 12 2009

FORM APPROVED
OMB No. 1004-0135
Expires July 31, 1996

RM

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		5. Lease Serial No. NM-94839
2. Name of Operator Cimarex Energy Co. of Colorado		6. If Indian, Allottee or Tribe Name
3a. Address 5215 N. O'Connor blvd. ste 1500 Irving Tx 75039		7. If Unit or CA/Agreement, Name and/or No.
3b. Phone No. (include area code) 972-401-3111		8. Well Name and No. Cottonwood Draw 22 Federal Com No. 1
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) SHL 1250 FSL & 760 FEL 22-25S-26E BHL 660 FSL & 660 FWL		9. API Well No. 30-015-36592
		10. Field and Pool, or Exploratory Area Cottonwood Draw; Morrow Wildcat
		11. County or Parish, State Eddy 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 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 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.)

For Geological reason, Cimarex proposes to move the Cottonwood Draw 22 Federal 1 BHL as shown below.

Previous Location
BHL 660' FSL & 660' FWL
Eddy County, NM

New Location
BHL 1980' FSL & 660' FWL
Eddy County, NM

Follow COA of 9/13/2008

Please see attached revised C-102, preliminary directional survey, alternate drilling plan, and cement additive specs.

14. I hereby certify that the foregoing is true and correct		APPROVED MAY 11 2009 WESLEY W. INGRAM PETROLEUM ENGINEER
Name (Printed/Typed) Scott Haynes	Title Regulatory Analyst	
Signature <i>Scott Haynes</i>	Date February 20, 2009	
THIS SPACE FOR FEDERAL OR STATE OFFICE USE		
Approved by	Title	
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 false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on reverse)

WIP

Revised Drilling Plan
Cottonwood Draw 22 Federal Com No. 1
 Cimarex Energy Co. of Colorado
 SHL 1250 FSL & 760 FEL, BHL 1980 FSL & 660 FWL
 Eddy County, NM

Permitted Casing : (Horizontal Wolfcamp, Mill out of 7" casing)

Hole	Hole Size	Depth	Casing OD	Weight	Thread	Collar	Grade	Mud Wt	Mud Visc	Fluid Loss	Mud Type
Surface	17½"	0' to 315'	New 13¾"	48#	8-R	STC	H-40	8.4-8.6	30-32	May lose	FW spud mud, paper, high visc. sweeps
Intermediate	12¼"	0' to 1789'	New 9¾"	40#	8-R	LTC	J-55	9.7-10	28-29	May lose	Brine water, paper, lime, high visc. sweeps
Pilot Hole	8¾"	0' to 10100'	New 7"	26#	8-R	LTC	P-110	9.2-10.5	36-44	May Lose	DuoVis (viscosity), bulk bar (fluid wt), lime (pH), PolyPac (fluid loss)
Lateral	6¾"	9188' to 13365' ¹³⁷⁶⁸	New 4½"	11.6#	8-R	LTC	P-110				

Surface: 500 sx Class C + 2% CaCl₂ (wt 14.8, yld 1.34)

Intermediate: Lead 600 sx Interfill C + 1/4# Flocele (wt 11.9, yld 2.45), Tail 400 sx Premium Plus Neat + 1% CaCl₂ (wt 14.8, yld 1.33)

Pilot Hole: **Stage 1**

Lead: 250 sx Interfill H + 0.25% HR-7 + 5# Gilsonite + 0.25# Flocele (wt 11.9, yld 2.46)

Tail: 400 sx Super H + 0.5% Halad-344 + 0.4% CFR-3 + 1# Salt + 5# Gilsonite + 0.125# Poly-e-flake + 0.35% HR-7 (wt 13, yld 1.67)

Stage 2 (DV tool 6000')

400 sx Interfill H + 0.125# Poly-e-flake (wt 11.9, yld 2.47)

TOC 1589' (if 75% or greater returns are lost while drilling intermediate casing, TOC for lateral will be 0')

Lateral: 225 sx Super H (wt 13.2, yld 1.61), **TOC 8988'**

Proposed Alternate Casing Proposal: (Horizontal Wolfcamp, Mill out of 7" casing)

Hole	Hole Size	Depth	Casing OD	Weight	Thread	Collar	Grade	Mud Wt	Mud Visc	Fluid Loss	Mud Type
Surface	17½"	0' to 315'	New 13¾"	48#	8-R	STC	H-40	8.4-8.6	30-32	May lose	FW spud mud, paper, high visc. sweeps
Intermediate	12¼"	0' to 1789'	New 9¾"	40#	8-R	LTC	J-55	9.7-10	28-29	May lose	Brine water, paper, lime, high visc. sweeps
Pilot Hole	8¾"	0' to 10100'	New 7"	26#	8-R	LTC	P-110	9.2-10.5	36-44	May Lose	DuoVis (viscosity), bulk bar (fluid wt), lime (pH), PolyPac (fluid loss)
Lateral	6¾"	9150' to 13388' ¹³⁷⁶⁸	New 4½"	11.6#	8-R	BTC/LTC	P-110				

Surface: 500 sx Class C + 2% CaCl₂ (wt 14.8, yld 1.34)

Intermediate: Lead 600 sx Interfill C + 1/4# Flocele (wt 11.9, yld 2.45), Tail 400 sx Premium Plus Neat + 1% CaCl₂ (wt 14.8, yld 1.33)

Pilot Hole: **Stage 1**

Lead: 250 sx Interfill H + 0.25% HR-7 + 5# Gilsonite + 0.25# Flocele (wt 11.9, yld 2.46)

Tail: 400 sx Super H + 0.5% Halad-344 + 0.4% CFR-3 + 1# Salt + 5# Gilsonite + 0.125# Poly-e-flake + 0.35% HR-7 (wt 13, yld 1.67)

Stage 2 (DV tool 6000')

400 sx Interfill H + 0.125# Poly-e-flake (wt 11.9, yld 2.47)

TOC 1589' (if 75% or greater returns are lost while drilling intermediate casing, TOC for lateral will be 0')

Lateral: 414 sx Versacem H + 0.5% Halad-344 + 0.4% CFR-3 + 1# Salt + 0.2% HR-7 (wt 14.5, yld 1.24), **TOC 8650'**



Cimarex Energy Co. of Colorado

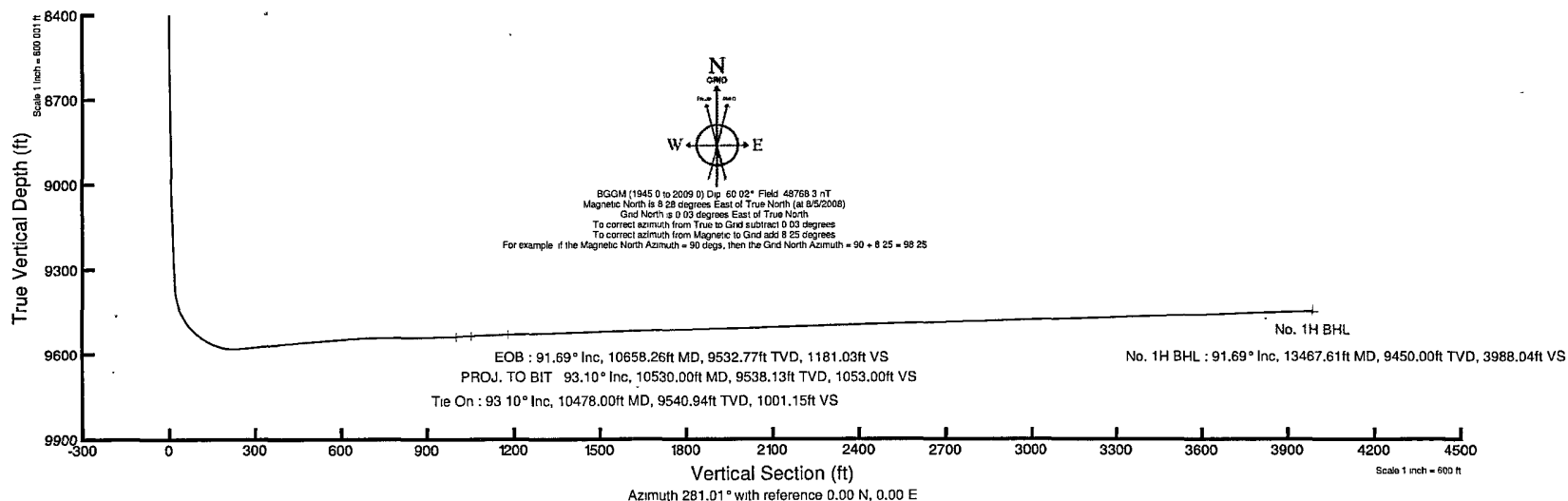
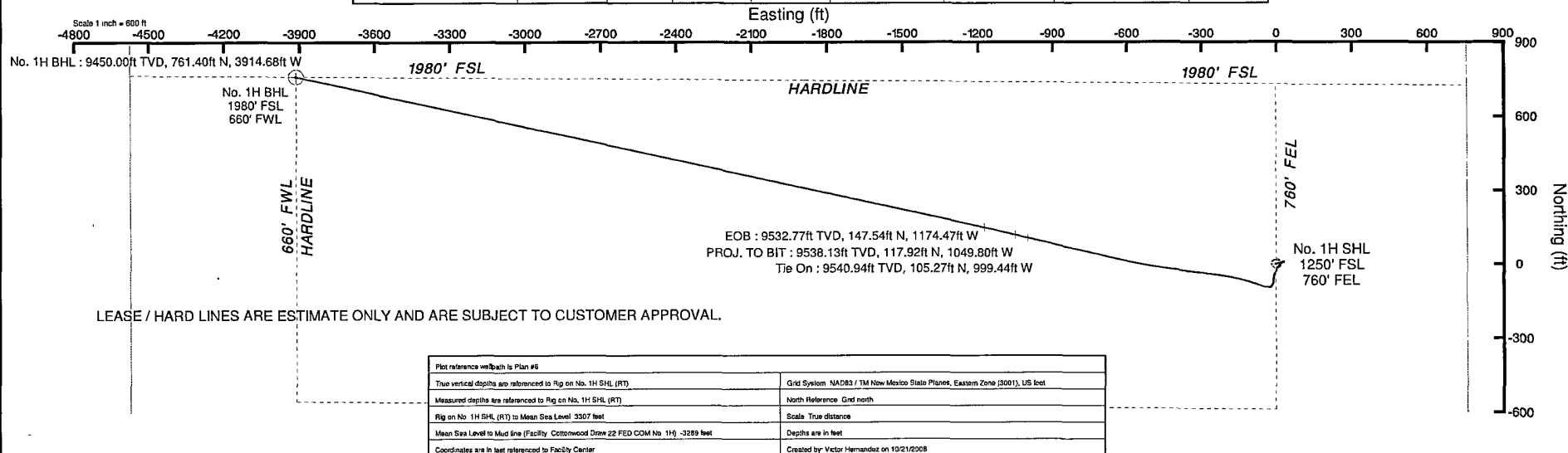
Location: Eddy County, NM
Field: (Cottonwood) Sec 22, T25S, R26E
Facility: Cottonwood Draw 22 FED COM No. 1H

Slot: No. 1H SHL
Well: No. 1H
Wellbore: No. 1H PWB



Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	10478.00	93.100	284.100	9540.94	105.27	-999.44	6.52	1001.15
PROJ. TO BIT	10530.00	93.100	284.100	9538.13	117.92	-1049.80	0.00	1053.00
EOB	10658.26	91.688	282.627	9532.77	147.54	-1174.47	1.59	1181.03
No. 1H BHL	13467.61	91.688	282.627	9450.00	761.40	-3914.68	0.00	3988.04





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INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co. of Colorado	Slot	No. 1H SHL
Area	Eddy County, NM	Well	No. 1H
Field	(Cottonwood) Sec 22, T25S, R26E	Wellbore	No. 1H PWB
Facility	Cottonwood Draw 22 FED COM No. 1H		

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	0.999909	Report Generated	10/21/2008 at 3:25:40 PM
Convergence at slot	0.03° East	Database/Source file	WA_Midland/No._1H_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	559574.40	404301.30	32°06'41.363"N	104°16'27.952"W
Facility Reference Pt			559574.40	404301.30	32°06'41.363"N	104°16'27.952"W
Field Reference Pt			559574.40	404301.30	32°06'41.363"N	104°16'27.952"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No. 1H SHL (RT) to Facility Vertical Datum	18.00ft
Horizontal Reference Pt	Facility Center	Rig on No. 1H SHL (RT) to Mean Sea Level	3307.00ft
Vertical Reference Pt	Rig on No. 1H SHL (RT)	Facility Vertical Datum to Mud Line (Facility)	0.00ft
MD Reference Pt	Rig on No. 1H SHL (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	281.01°



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INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co. of Colorado	Slot	No. 1H SHL
Area	Eddy County, NM	Well	No. 1H
Field	(Cottonwood) Sec 22, T25S, R26E	Wellbore	No. 1H PWB
Facility	Cottonwood Draw 22 FED COM No. 1H		

WELLPATH DATA (162 stations)								
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
0.00	0.000	198.310	0.00	0.00	0.00	0.00	0.00	
100.00	0.450	198.310	100.00	0.05	-0.37	-0.12	0.45	
200.00	0.680	198.170	199.99	0.17	-1.31	-0.43	0.23	
300.00	0.580	228.890	299.99	0.56	-2.21	-1.00	0.35	
400.00	0.570	238.990	399.98	1.24	-2.80	-1.81	0.10	
500.00	0.580	266.320	499.98	2.10	-3.08	-2.74	0.27	
600.00	0.630	280.210	599.97	3.14	-3.02	-3.78	0.15	
700.00	0.580	290.930	699.97	4.19	-2.74	-4.80	0.12	
800.00	0.440	305.260	799.96	5.03	-2.34	-5.58	0.19	
900.00	0.400	297.770	899.96	5.72	-1.95	-6.21	0.07	
1000.00	0.120	317.840	999.96	6.14	-1.71	-6.59	0.29	
1100.00	0.840	71.060	1099.96	5.59	-1.40	-5.96	0.89	
1200.00	1.830	74.260	1199.93	3.52	-0.73	-3.73	0.99	
1300.00	1.620	77.740	1299.88	0.80	0.01	-0.81	0.23	
1400.00	2.350	82.670	1399.82	-2.44	-0.57	-2.60	0.75	
1500.00	3.370	81.170	1499.70	-7.16	1.28	7.54	1.02	
1600.00	3.790	77.740	1599.50	-12.96	2.43	13.67	0.47	
1700.00	3.190	79.430	1699.31	-18.58	3.65	19.64	0.61	
1800.00	1.860	82.670	1799.22	-22.71	4.36	23.98	1.34	
1900.00	0.660	86.920	1899.19	-24.81	4.60	26.17	1.20	
2000.00	0.580	83.990	1999.18	-25.85	4.69	27.25	0.09	
2100.00	0.420	75.390	2099.18	-26.66	4.83	28.10	0.18	
2200.00	0.330	45.000	2199.18	-27.16	5.13	28.66	0.21	
2300.00	0.430	3.920	2299.18	-27.27	5.70	28.89	0.28	
2400.00	0.280	349.990	2399.17	-27.14	6.32	28.87	0.17	
2500.00	0.360	329.300	2499.17	-26.84	6.83	28.67	0.14	
2600.00	0.300	310.430	2599.17	-26.40	7.27	28.31	0.12	
2700.00	0.190	282.900	2699.17	-26.01	7.48	27.95	0.16	
2800.00	0.250	256.810	2799.17	-25.64	7.46	27.58	0.12	
2900.00	0.200	281.100	2899.17	-25.27	7.45	27.19	0.11	



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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co. of Colorado	Slot	No. 1H SHL
Area	Eddy County, NM	Well	No. 1H
Field	(Cottonwood) Sec 22, T25S, R26E	Wellbore	No. 1H PWB
Facility	Cottonwood Draw 22 FED COM No. 1H		

WELLPATH DATA (162 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
3000.00	0.210	244.420	2999.17	-24.95	7.40	26.86	0.13	
3100.00	0.350	232.880	3099.17	-24.60	7.14	26.45	0.15	
3200.00	0.460	247.160	3199.16	-24.06	6.80	25.83	0.15	
3300.00	0.510	238.150	3299.16	-23.40	6.41	25.09	0.09	
3400.00	0.700	231.830	3399.15	-22.68	5.80	24.23	0.20	
3500.00	0.700	242.180	3499.15	-21.80	5.13	23.21	0.13	
3600.00	0.720	237.010	3599.14	-20.87	4.51	22.14	0.07	
3700.00	0.740	237.750	3699.13	-19.95	3.82	21.07	0.02	
3800.00	0.750	234.390	3799.12	-19.03	3.09	19.99	0.04	
3900.00	0.910	228.120	3899.11	-18.10	2.18	18.87	0.18	
4000.00	0.840	230.720	3999.10	-17.15	1.19	17.71	0.08	
4100.00	0.680	223.850	4099.09	-16.36	0.30	16.73	0.18	
4200.00	0.710	222.780	4199.08	-15.72	-0.59	15.90	0.03	
4300.00	0.750	218.990	4299.08	-15.08	-1.55	15.06	0.06	
4400.00	0.790	222.500	4399.07	-14.42	-2.57	14.19	0.06	
4500.00	0.740	213.490	4499.06	-13.81	-3.61	13.36	0.13	
4600.00	0.690	203.630	4599.05	-13.43	-4.70	12.77	0.13	
4700.00	0.680	209.610	4699.04	-13.11	-5.77	12.23	0.07	
4800.00	0.890	211.560	4799.03	-12.65	-6.95	11.53	0.21	
4900.00	0.980	210.560	4899.02	-12.09	-8.35	10.69	0.09	
5000.00	1.090	207.290	4999.00	-11.54	-9.93	9.82	0.12	
5100.00	1.060	206.310	5098.99	-11.02	-11.60	8.97	0.04	
5200.00	0.910	218.350	5198.97	-10.42	-13.05	8.07	0.25	
5300.00	0.810	221.380	5298.96	-9.69	-14.21	7.11	0.11	
5400.00	0.970	227.200	5398.95	-8.84	-15.31	6.02	0.18	
5500.00	0.770	244.010	5498.94	-7.80	-16.18	4.80	0.32	
5600.00	0.520	249.680	5598.93	-6.88	-16.63	3.77	0.26	
5700.00	0.730	230.860	5698.93	-6.08	-17.19	2.85	0.29	
5800.00	0.890	206.490	5798.92	-5.46	-18.29	2.01	0.38	
5900.00	1.450	197.830	5898.89	-5.11	-20.19	1.28	0.59	



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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co. of Colorado	Slot	No. 1H SHL
Area	Eddy County, NM	Well	No. 1H
Field	(Cottonwood) Sec 22, T25S, R26E	Wellbore	No. 1H PWB
Facility	Cottonwood Draw 22 FED COM No. 1H		

WELLPATH DATA (162 stations)								
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
6000.00	2.810	198.720	5998.82	-4.63	-23.72	0.10	1.36	
6100.00	3.200	196.350	6098.69	-4.04	-28.72	-1.47	0.41	
6200.00	2.580	192.240	6198.56	-3.73	-33.60	-2.73	0.65	
6300.00	2.410	201.210	6298.46	-3.31	-37.75	-3.97	0.43	
6400.00	1.690	205.580	6398.40	-2.57	-41.04	-5.37	0.74	
6500.00	1.230	203.650	6498.37	-1.96	-43.36	-6.44	0.46	
6600.00	1.140	213.960	6598.34	-1.34	-45.17	-7.42	0.23	
6700.00	1.340	198.200	6698.32	-0.80	-47.10	-8.34	0.39	
6800.00	1.490	199.630	6798.29	-0.46	-49.44	-9.15	0.15	
6900.00	1.330	163.830	6898.26	-0.80	-51.78	-9.26	0.88	
7000.00	1.490	155.210	6998.23	-2.09	-54.07	-8.39	0.27	
7100.00	0.900	177.010	7098.21	-3.04	-56.04	-7.80	0.73	
7200.00	1.410	217.890	7198.19	-2.67	-57.79	-8.52	0.94	
7300.00	1.760	219.960	7298.15	-1.37	-59.94	-10.26	0.35	
7400.00	0.830	213.910	7398.13	-0.35	-61.72	-11.65	0.94	
7500.00	0.410	184.800	7498.12	-0.10	-62.68	-12.09	0.51	
7600.00	0.460	164.450	7598.12	-0.32	-63.42	-12.01	0.16	
7700.00	1.680	166.570	7698.10	-1.11	-65.23	-11.56	1.22	
7800.00	1.720	168.710	7798.05	-2.28	-68.13	-10.93	0.08	
7900.00	1.950	188.680	7898.00	-2.92	-71.28	-10.89	0.68	
8000.00	2.070	182.810	7997.94	-3.25	-74.77	-11.23	0.24	
8100.00	2.150	192.230	8097.88	-3.46	-78.41	-11.72	0.36	
8200.00	1.830	205.000	8197.82	-3.04	-81.69	-12.79	0.54	
8300.00	1.740	209.570	8297.77	-2.17	-84.45	-14.22	0.17	
8400.00	1.540	213.360	8397.73	-1.17	-86.90	-15.70	0.23	
8500.00	1.370	212.410	8497.69	-0.23	-89.03	-17.08	0.17	
8600.00	1.260	207.700	8597.67	0.52	-91.01	-18.24	0.15	
8700.00	1.430	217.100	8697.64	1.39	-92.98	-19.50	0.28	
8800.00	1.510	220.320	8797.61	2.58	-94.98	-21.10	0.11	
8900.00	1.070	258.000	8897.58	4.09	-96.18	-22.87	0.93	



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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co. of Colorado	Slot	No. 1H SHL
Area	Eddy County, NM	Well	No. 1H
Field	(Cottonwood) Sec 22, T25S, R26E	Wellbore	No. 1H PWB
Facility	Cottonwood Draw 22 FED COM No. 1H		

WELLPATH DATA (162 stations)								
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
9000.00	1.320	276.280	8997.56	6.09	-96.25	-24.93	0.45	
9100.00	1.710	273.300	9097.53	8.72	-96.03	-27.56	0.40	
9200.00	1.780	279.900	9197.48	11.75	-95.68	-30.58	0.21	
9300.00	2.210	281.130	9297.42	15.23	-95.04	-34.00	0.43	
9367.00	2.120	281.130	9364.37	17.76	-94.55	-36.49	0.13	
9403.00	11.700	266.400	9400.07	21.97	-94.65	-40.79	26.85	
9435.00	18.000	289.800	9431.01	30.01	-93.18	-48.70	26.81	
9467.00	26.900	290.300	9460.56	42.07	-88.99	-60.16	27.82	
9498.00	34.200	289.600	9487.24	57.62	-83.62	-74.97	23.58	
9527.00	40.900	289.300	9510.22	75.10	-77.74	-91.63	23.11	
9559.00	48.300	287.300	9532.99	97.37	-70.72	-112.95	23.54	
9591.00	57.200	284.800	9552.34	122.72	-63.72	-137.41	28.50	
9622.00	65.800	282.100	9567.12	149.91	-57.41	-163.88	28.77	
9654.00	75.300	279.800	9577.76	180.04	-51.70	-193.47	30.45	
9684.00	85.100	278.100	9582.86	209.55	-47.12	-222.64	33.14	
9719.00	94.700	277.300	9582.92	244.45	-42.43	-257.29	27.52	
9751.00	95.400	277.400	9580.11	276.26	-38.36	-288.90	2.21	
9782.00	95.300	277.200	9577.22	307.06	-34.43	-319.51	0.72	
9814.00	95.500	277.400	9574.20	338.85	-30.39	-351.11	0.88	
9846.00	95.700	277.900	9571.08	370.65	-26.15	-382.68	1.68	
9877.00	96.100	278.200	9567.90	401.44	-21.83	-413.21	1.61	
9908.00	94.900	277.800	9564.92	432.25	-17.53	-443.77	4.08	
9940.00	94.200	278.300	9562.39	464.11	-13.07	-475.35	2.69	
9972.00	94.200	280.800	9560.04	496.01	-7.77	-506.82	7.79	
10003.00	93.800	281.000	9557.88	526.94	-1.93	-537.19	1.44	
10035.00	94.400	281.600	9555.59	558.85	4.33	-568.48	2.65	
10067.00	94.000	282.500	9553.25	590.76	10.99	-599.69	3.07	
10098.00	94.500	283.000	9550.95	621.66	17.81	-629.85	2.28	
10130.00	92.900	283.200	9548.89	653.57	25.05	-660.95	5.04	
10161.00	93.000	283.900	9547.29	684.50	32.31	-691.05	2.28	



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INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co. of Colorado	Slot	No. 1H SHL
Area	Eddy County, NM	Well	No. 1H
Field	(Cottonwood) Sec 22, T25S, R26E	Wellbore	No. 1H PWB
Facility	Cottonwood Draw 22 FED COM No. 1H		

WELLPATH DATA (162 stations) † = interpolated/extrapolated station									
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments	
10193.00	91.500	284.000	9546.03	716.43	40.01	-722.08	4.70		
10224.00	90.800	282.900	9545.41	747.40	47.22	-752.22	4.21		
10256.00	90.800	283.400	9544.96	779.37	54.50	-783.38	1.56		
10288.00	90.300	282.700	9544.66	811.35	61.73	-814.55	2.69		
10319.00	90.200	282.700	9544.52	842.34	68.54	-844.79	0.32		
10351.00	91.200	283.300	9544.13	874.31	75.74	-875.97	3.64		
10382.00	91.500	283.300	9543.40	905.28	82.87	-906.13	0.97		
10414.00	91.000	283.300	9542.70	937.25	90.23	-937.26	1.56		
10446.00	91.100	283.500	9542.12	969.21	97.64	-968.39	0.70		
10478.00	93.100	284.100	9540.94	1001.15	105.27	-999.44	6.52	Tie On	
10530.00	93.100	284.100	9538.13	1053.00	117.92	-1049.80	0.00	PROJ TO BIT	
10578.00†	92.572	283.548	9535.76	1100.88	129.38	-1096.35	1.59		
10658.26	91.688	282.627	9532.77	1181.03	147.54	-1174.47	1.59	EOB	
10678.00†	91.688	282.627	9532.19	1200.76	151.85	-1193.72	0.00		
10778.00†	91.688	282.627	9529.25	1300.67	173.70	-1291.26	0.00		
10878.00†	91.688	282.627	9526.30	1400.59	195.55	-1388.80	0.00		
10978.00†	91.688	282.627	9523.35	1500.51	217.40	-1486.34	0.00		
11078.00†	91.688	282.627	9520.41	1600.42	239.25	-1583.88	0.00		
11178.00†	91.688	282.627	9517.46	1700.34	261.10	-1681.42	0.00		
11278.00†	91.688	282.627	9514.51	1800.26	282.95	-1778.96	0.00		
11378.00†	91.688	282.627	9511.57	1900.17	304.80	-1876.50	0.00		
11478.00†	91.688	282.627	9508.62	2000.09	326.66	-1974.04	0.00		
11578.00†	91.688	282.627	9505.67	2100.01	348.51	-2071.58	0.00		
11678.00†	91.688	282.627	9502.73	2199.92	370.36	-2169.12	0.00		
11778.00†	91.688	282.627	9499.78	2299.84	392.21	-2266.65	0.00		
11878.00†	91.688	282.627	9496.84	2399.76	414.06	-2364.19	0.00		
11978.00†	91.688	282.627	9493.89	2499.67	435.91	-2461.73	0.00		
12078.00†	91.688	282.627	9490.94	2599.59	457.76	-2559.27	0.00		
12178.00†	91.688	282.627	9488.00	2699.51	479.61	-2656.81	0.00		
12278.00†	91.688	282.627	9485.05	2799.42	501.46	-2754.35	0.00		



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INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co. of Colorado	Slot	No. 1H SHL
Area	Eddy County, NM	Well	No. 1H
Field	(Cottonwood) Sec 22, T25S, R26E	Wellbore	No. 1H PWB
Facility	Cottonwood Draw 22 FED COM No. 1H		

WELLPATH DATA (162 stations) † = interpolated/extrapolated station								
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
12378.00†	91.688	282.627	9482.10	2899.34	523.31	-2851.89	0.00	
12478.00†	91.688	282.627	9479.16	2999.26	545.16	-2949.43	0.00	
12578.00†	91.688	282.627	9476.21	3099.17	567.01	-3046.97	0.00	
12678.00†	91.688	282.627	9473.26	3199.09	588.86	-3144.51	0.00	
12778.00†	91.688	282.627	9470.32	3299.01	610.71	-3242.05	0.00	
12878.00†	91.688	282.627	9467.37	3398.92	632.57	-3339.58	0.00	
12978.00†	91.688	282.627	9464.43	3498.84	654.42	-3437.12	0.00	
13078.00†	91.688	282.627	9461.48	3598.76	676.27	-3534.66	0.00	
13178.00†	91.688	282.627	9458.53	3698.67	698.12	-3632.20	0.00	
13278.00†	91.688	282.627	9455.59	3798.59	719.97	-3729.74	0.00	
13378.00†	91.688	282.627	9452.64	3898.51	741.82	-3827.28	0.00	
13467.61	91.688	282.627	9450.00†	3988.04	761.40	-3914.68	0.00	No. 1H BHL

HOLE & CASING SECTIONS: Ref Wellbore: No. 1H PWB Ref Wellpath: Plan #6					
String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]



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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co. of Colorado	Slot	No. 1H SHL
Area	Eddy County, NM	Well	No. 1H
Field	(Cottonwood) Sec 22, T25S, R26E	Wellbore	No. 1H PWB
Facility	Cottonwood Draw 22 FED COM No. 1H		

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
1) No. 1H BHL	13467.61	9450.00	761.40	-3914.68	555660.08	405062.63	32°06'48.916"N	104°17'13.461"W	point

SURVEY PROGRAM Ref Wellbore: No. 1H PWB Ref Wellpath: Plan #6				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
18.00	9300.00	Gyrodatta relative depth - Continuous gyro		No. 1 AWB
9300.00	10478.00	NaviTrak (Standard)		No. 1H AWB
10478.00	13467.61	NaviTrak (Standard)		No. 1H PWB