

HOBBS OGD

NOV 07 2011

DISTRICT I

1625 H. 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

RECEIVED

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102

Revised July 10, 2010

Submit one copy to appropriate
District Office

OIL CONSERVATION DIVISION

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-025-40356	Pool Code 96403	Pool Name Test; Bone Spring, Wildcat
Property Code 38859	Property Name WITHERSPOON "21" STATE	Well Number 4H
OCRIQ No. 162683	Operator Name CIMAREX ENERGY CO. OF COLORADO	Elevation 3680'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	21	21 S	33 E		330	NORTH	350	EAST	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
P	21	21 S	33 E		330	SOUTH	350	EAST	LEA

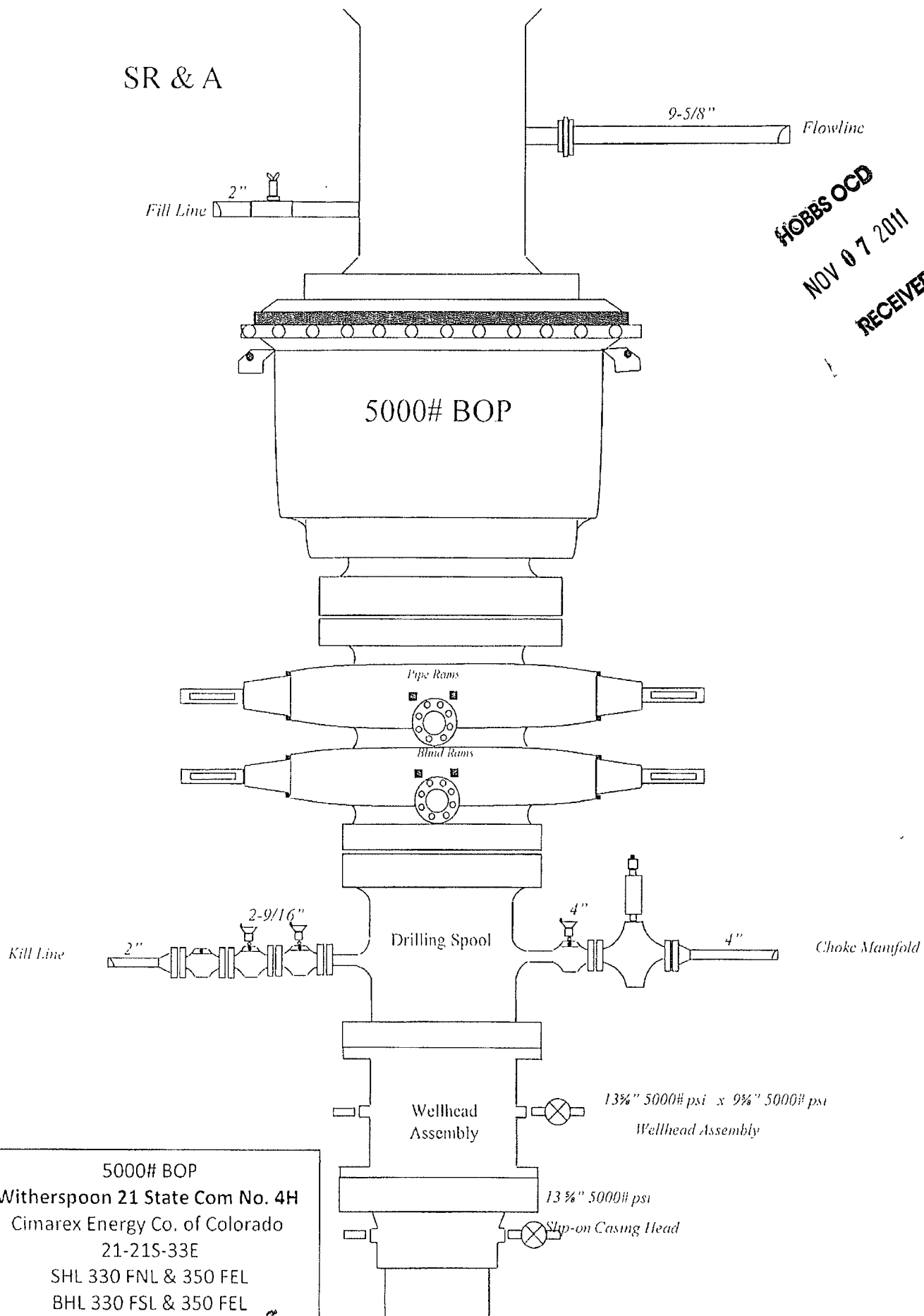
Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160			

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

SURFACE LOCATION Lat - N 32° 28' 14.66" Long - W 103° 34' 12.48" NMSPCE- N 53° 58' 17.6" E 77° 57' 08.3" (NAD-83) PROPOSED BOTTOM HOLE LOCATION Lat - N 32° 27' 28.85" Long - W 103° 34' 12.40" NMSPCE- N 53° 11' 07.6" E 77° 57' 40.9" (NAD-83) No Potash Leases VB-2082 VB-2083	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: <i>Terri Statheim</i> Date: _____ Printed Name: Terri Statheim Email Address: tstatheim@cimarex.com
	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. SEPTEMBER 11 2011 Date Plotted: _____ Signature: <i>[Signature]</i> Professional Surveyor 7977 Certificate No. 25035 Basin Surveys 25035

DEC 08 2011

SR & A



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5000# BOP

Witherspoon 21 State Com No. 4H

Cimarex Energy Co. of Colorado

21-21S-33E

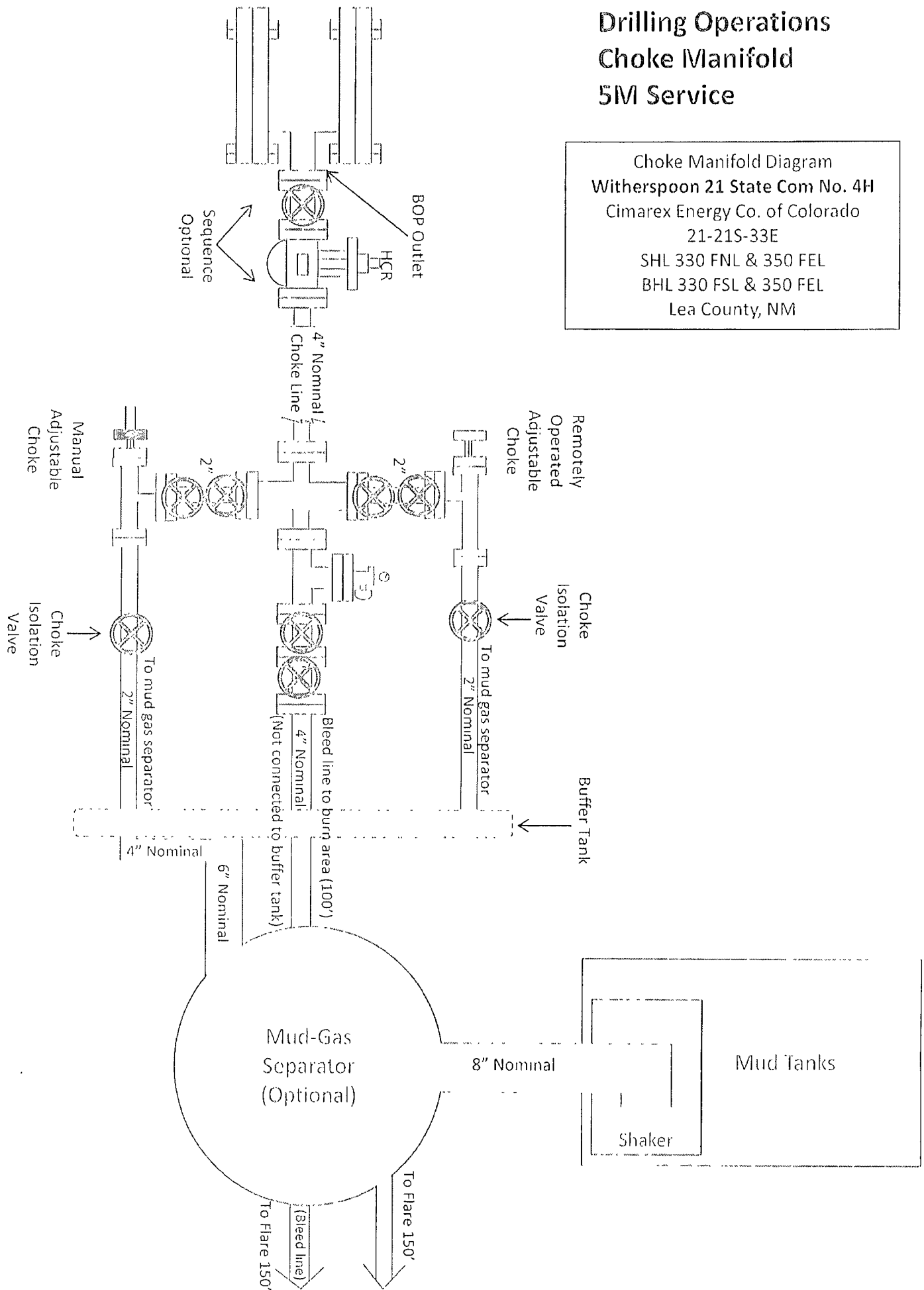
SHL 330 FNL & 350 FEL

BHL 330 FSL & 350 FEL

Lea County NM

Drilling Operations
Choke Manifold
5M Service

Choke Manifold Diagram
Witherspoon 21 State Com No. 4H
Cimarex Energy Co. of Colorado
21-21S-33E
SHL 330 FNL & 350 FEL
BHL 330 FSL & 350 FEL
Lea County, NM



30-025-40356



Cimarex Energy Co.

Location: Lea County, NM
Field: (Witherspoon) Sec 21, T21S, R33E
Facility: Witherspoon 21 State Com

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



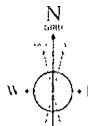
Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (%/100ft)	VS (ft)
Tie On	0.00	0.000	179.521	0.00	0.00	0.00	0.00	0.00
Est. KOP	9388.52	0.000	179.521	9388.52	0.00	0.00	0.00	0.00
End of Curve	9838.52	90.000	179.521	9675.00	-286.47	2.39	20.00	286.48
No. 4H PBHL	14172.34	90.000	179.521	9675.00	-4620.14	38.60	0.00	4620.30

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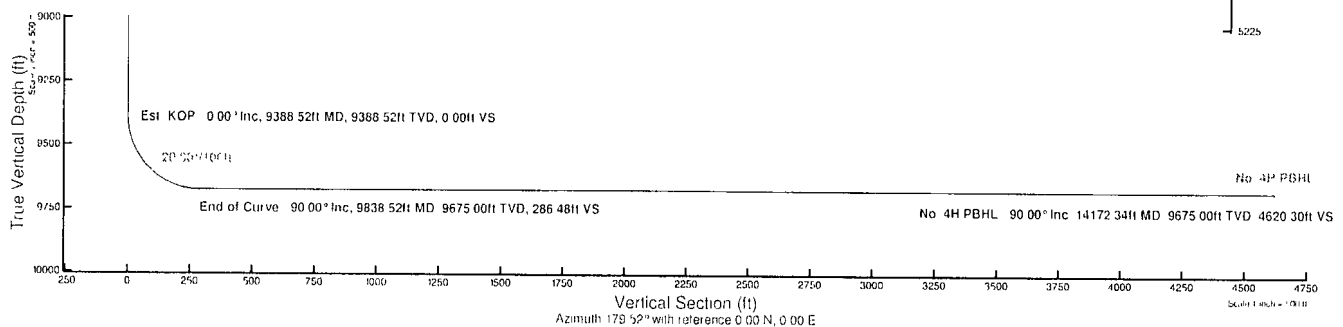
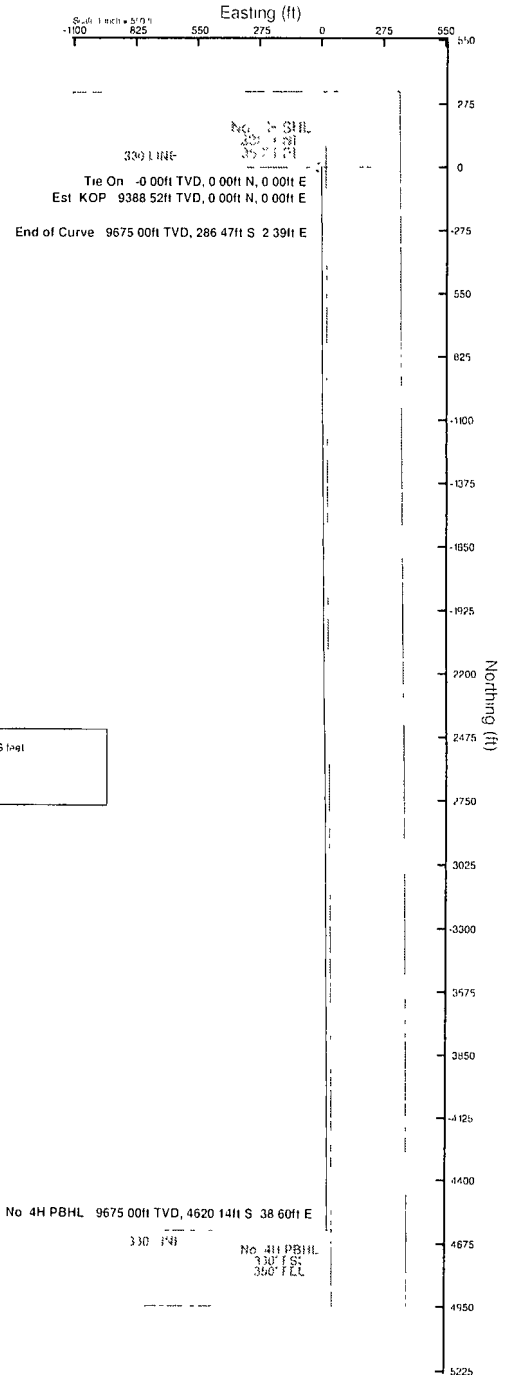


BRGM (1945) to 7012.0) Dpt: 58.54" Field: 17537.4 nT
Magnetic North is 8.55 degrees East of True North (at 11/4/2011)
Grid North is 0.11 degrees East of True North
To correct azimuth from True to Grid subtract 0.11 degrees
To correct azimuth from Magnetic to Grid add 8.14 degrees
For example if the Magnetic North Azimuth = 90.00 degrees then the Grid North Azimuth = 90.00 - 8.14 = 81.86

Plot relations & wellbore Profile 1

True vertical depths are referenced to Ray on No. 1H SHL (KB)
Measured depths are referenced to Ray on No. 1H SHL (KR)
Ray on No. 1H SHL (KB) to Mean Sea Level: 3680 feet
Mean Sea Level to Mud line (At Slot No. 1H SHL): 0 feet
Coordinates are in feet referenced to Slot

Grid System: NAD83 / TM New Mexico SP Eastern Zone (3001) US feet
North Reference: Grid north
Scale: True distance
Depths are in feet
Created by: culljunk on 11/13/2011





Planned Wellpath Report

Prelim_1

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 4H SHL
Area	Lea County, NM	Well	No. 4H
Field	(Witherspoon) Sec 21, T21S, R33E	Wellbore	No. 4H PWB
Facility	Witherspoon 21 State Com		

REPORT SETUP INFORMATION			
Projection System	NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet	Software System	WellArchitect® 3.0.0
North Reference	Grid	User	Calphik
Scale	0.999973	Report Generated	11/4/2011 at 10:20:24 AM
Convergence at slot	0.41° East	Database/Source file	WA_Midland/No. 4H_PWB.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	535687.53	776519.75	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W
Facility Reference Pt			0.00	0.00	30°59'18.404"N	106°03'38.987"W
Field Reference Pt			0.00	0.00	30°59'18.404"N	106°03'38.987"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Rig on No. 4H SHL (KB) to GL	3680.00ft
Horizontal Reference Pt	Slot	Rig on No. 4H SHL (KB) to Mean Sea Level	3680.00ft
Vertical Reference Pt	Rig on No. 4H SHL (KB)	Rig on No. 4H SHL (KB) to Mud Line at Slot (No. 4H SHL)	3680.00ft
MD Reference Pt	Rig on No. 4H SHL (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	179.52°



Planned Wellpath Report

Prelim_1
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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 4H SHL
Area	Lea County, NM	Well	No. 4H
Field	(Witherspoon) Sec 21, T21S, R33E	Wellbore	No. 4H PWB
Facility	Witherspoon 21 State Com		

WELLPATH DATA (148 stations) † = interpolated/extrapolated station												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [1/100ft]	Comments
0.00	0.000	179.521	0.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	Tie On
100.00	0.000	179.521	100.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
200.00	0.000	179.521	200.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
300.00	0.000	179.521	300.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
400.00	0.000	179.521	400.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
500.00	0.000	179.521	500.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
600.00	0.000	179.521	600.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
700.00	0.000	179.521	700.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
800.00	0.000	179.521	800.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
900.00	0.000	179.521	900.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
1000.00	0.000	179.521	1000.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
1100.00	0.000	179.521	1100.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
1200.00	0.000	179.521	1200.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
1300.00	0.000	179.521	1300.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
1400.00	0.000	179.521	1400.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
1500.00	0.000	179.521	1500.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
1600.00	0.000	179.521	1600.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
1700.00	0.000	179.521	1700.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
1800.00	0.000	179.521	1800.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
1900.00	0.000	179.521	1900.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
2000.00	0.000	179.521	2000.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
2100.00	0.000	179.521	2100.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
2200.00	0.000	179.521	2200.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
2300.00	0.000	179.521	2300.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
2400.00	0.000	179.521	2400.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
2500.00	0.000	179.521	2500.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
2600.00	0.000	179.521	2600.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
2700.00	0.000	179.521	2700.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
2800.00	0.000	179.521	2800.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
2900.00	0.000	179.521	2900.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
3000.00	0.000	179.521	3000.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
3100.00	0.000	179.521	3100.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
3200.00	0.000	179.521	3200.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
3300.00	0.000	179.521	3300.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
3400.00	0.000	179.521	3400.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
3500.00	0.000	179.521	3500.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
3600.00	0.000	179.521	3600.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
3700.00	0.000	179.521	3700.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
3800.00	0.000	179.521	3800.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
3900.00	0.000	179.521	3900.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
4000.00	0.000	179.521	4000.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
4100.00	0.000	179.521	4100.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
4200.00	0.000	179.521	4200.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
4300.00	0.000	179.521	4300.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
4400.00	0.000	179.521	4400.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	



Planned Wellpath Report

Prelim_1
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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 4H SHL
Area	Lea County, NM	Well	No. 4H
Field	(Witherspoon) Sec 21, T21S, R33E	Wellbore	No. 4H PWB
Facility	Witherspoon 21 State Com		

WELLPATH DATA (148 stations) † = interpolated/extrapolated station												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4500.00†	0.000	179.521	4500.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
4600.00†	0.000	179.521	4600.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
4700.00†	0.000	179.521	4700.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
4800.00†	0.000	179.521	4800.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
4900.00†	0.000	179.521	4900.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
5000.00†	0.000	179.521	5000.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
5100.00†	0.000	179.521	5100.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
5200.00†	0.000	179.521	5200.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
5250.00†	0.000	179.521	5250.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	Delaware
5300.00†	0.000	179.521	5300.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
5400.00†	0.000	179.521	5400.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
5500.00†	0.000	179.521	5500.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
5600.00†	0.000	179.521	5600.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
5700.00†	0.000	179.521	5700.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
5800.00†	0.000	179.521	5800.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
5900.00†	0.000	179.521	5900.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
6000.00†	0.000	179.521	6000.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
6100.00†	0.000	179.521	6100.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
6200.00†	0.000	179.521	6200.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
6300.00†	0.000	179.521	6300.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
6400.00†	0.000	179.521	6400.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
6500.00†	0.000	179.521	6500.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
6600.00†	0.000	179.521	6600.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
6700.00†	0.000	179.521	6700.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
6800.00†	0.000	179.521	6800.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
6900.00†	0.000	179.521	6900.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
7000.00†	0.000	179.521	7000.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
7100.00†	0.000	179.521	7100.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
7200.00†	0.000	179.521	7200.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
7300.00†	0.000	179.521	7300.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
7400.00†	0.000	179.521	7400.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
7500.00†	0.000	179.521	7500.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
7600.00†	0.000	179.521	7600.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
7700.00†	0.000	179.521	7700.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
7800.00†	0.000	179.521	7800.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
7900.00†	0.000	179.521	7900.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
8000.00†	0.000	179.521	8000.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
8100.00†	0.000	179.521	8100.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
8200.00†	0.000	179.521	8200.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
8300.00†	0.000	179.521	8300.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
8400.00†	0.000	179.521	8400.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
8500.00†	0.000	179.521	8500.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
8575.00†	0.000	179.521	8575.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	Basal Brushy Canyon
8600.00†	0.000	179.521	8600.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
8700.00†	0.000	179.521	8700.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 4H SHL
Area	Lea County, NM	Well	No. 4H
Field	(Witherspoon) Sec 21, T21S, R33E	Wellbore	No. 4H PWB
Facility	Witherspoon 21 State Com		

WELLPATH DATA (148 stations) † = interpolated/extrapolated station												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8750.00†	0.000	179.521	8750.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	Bone Spring
8800.00†	0.000	179.521	8800.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
8900.00†	0.000	179.521	8900.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
9000.00†	0.000	179.521	9000.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
9100.00†	0.000	179.521	9100.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
9200.00†	0.000	179.521	9200.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	
9300.00†	0.000	179.521	9300.00	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	Upper Bone Spring Shale
9388.52	0.000	179.521	9388.52	0.00	0.00	0.00	776708.30	535817.60	32°28'14.564"N	103°34'12.462"W	0.00	Est. KOP
9400.00†	2.296	179.521	9400.00	0.23	-0.23	0.00	776708.30	535817.37	32°28'14.562"N	103°34'12.462"W	20.00	
9500.00†	22.296	179.521	9497.21	21.42	-21.42	0.18	776708.48	535796.18	32°28'14.352"N	103°34'12.461"W	20.00	
9600.00†	42.296	179.521	9581.31	74.58	-74.57	0.62	776708.92	535743.03	32°28'13.826"N	103°34'12.461"W	20.00	
9700.00†	62.296	179.521	9642.16	153.29	-153.29	1.28	776709.58	535664.32	32°28'13.047"N	103°34'12.459"W	20.00	
9800.00†	82.296	179.521	9672.41	248.07	-248.07	2.07	776710.37	535569.54	32°28'12.109"N	103°34'12.458"W	20.00	
9838.52	90.000	179.521	9675.00	286.48	-286.47	2.39	776710.69	535531.14	32°28'11.729"N	103°34'12.458"W	20.00	End of Curve
9900.00†	90.000	179.521	9675.00	347.96	-347.95	2.91	776711.21	535469.66	32°28'11.121"N	103°34'12.457"W	0.00	
10000.00†	90.000	179.521	9675.00	447.96	-447.94	3.74	776712.04	535369.67	32°28'10.131"N	103°34'12.455"W	0.00	
10100.00†	90.000	179.521	9675.00	547.96	-547.94	4.58	776712.88	535269.68	32°28'09.142"N	103°34'12.454"W	0.00	
10200.00†	90.000	179.521	9675.00	647.96	-647.94	5.41	776713.71	535169.68	32°28'08.152"N	103°34'12.452"W	0.00	
10300.00†	90.000	179.521	9675.00	747.96	-747.93	6.25	776714.55	535069.69	32°28'07.163"N	103°34'12.451"W	0.00	
10400.00†	90.000	179.521	9675.00	847.96	-847.93	7.08	776715.38	534969.70	32°28'06.173"N	103°34'12.450"W	0.00	
10500.00†	90.000	179.521	9675.00	947.96	-947.92	7.92	776716.22	534869.70	32°28'05.184"N	103°34'12.448"W	0.00	
10600.00†	90.000	179.521	9675.00	1047.96	-1047.92	8.76	776717.06	534769.71	32°28'04.195"N	103°34'12.447"W	0.00	
10700.00†	90.000	179.521	9675.00	1147.96	-1147.92	9.59	776717.89	534669.72	32°28'03.205"N	103°34'12.445"W	0.00	
10800.00†	90.000	179.521	9675.00	1247.96	-1247.91	10.43	776718.73	534569.72	32°28'02.216"N	103°34'12.444"W	0.00	
10900.00†	90.000	179.521	9675.00	1347.96	-1347.91	11.26	776719.56	534469.73	32°28'01.226"N	103°34'12.443"W	0.00	
11000.00†	90.000	179.521	9675.00	1447.96	-1447.91	12.10	776720.40	534369.74	32°28'00.237"N	103°34'12.441"W	0.00	
11100.00†	90.000	179.521	9675.00	1547.96	-1547.90	12.93	776721.23	534269.74	32°27'59.247"N	103°34'12.440"W	0.00	
11200.00†	90.000	179.521	9675.00	1647.96	-1647.90	13.77	776722.07	534169.75	32°27'58.258"N	103°34'12.438"W	0.00	
11300.00†	90.000	179.521	9675.00	1747.96	-1747.90	14.60	776722.90	534069.75	32°27'57.268"N	103°34'12.437"W	0.00	
11400.00†	90.000	179.521	9675.00	1847.96	-1847.89	15.44	776723.74	533969.76	32°27'56.279"N	103°34'12.436"W	0.00	
11500.00†	90.000	179.521	9675.00	1947.96	-1947.89	16.27	776724.57	533869.77	32°27'55.289"N	103°34'12.434"W	0.00	
11600.00†	90.000	179.521	9675.00	2047.96	-2047.89	17.11	776725.41	533769.77	32°27'54.300"N	103°34'12.433"W	0.00	
11700.00†	90.000	179.521	9675.00	2147.96	-2147.88	17.95	776726.24	533669.78	32°27'53.310"N	103°34'12.431"W	0.00	
11800.00†	90.000	179.521	9675.00	2247.96	-2247.88	18.78	776727.08	533569.79	32°27'52.321"N	103°34'12.430"W	0.00	
11900.00†	90.000	179.521	9675.00	2347.96	-2347.88	19.62	776727.92	533469.79	32°27'51.331"N	103°34'12.429"W	0.00	
12000.00†	90.000	179.521	9675.00	2447.96	-2447.87	20.45	776728.75	533369.80	32°27'50.342"N	103°34'12.427"W	0.00	
12100.00†	90.000	179.521	9675.00	2547.96	-2547.87	21.29	776729.59	533269.81	32°27'49.352"N	103°34'12.426"W	0.00	
12200.00†	90.000	179.521	9675.00	2647.96	-2647.87	22.12	776730.42	533169.81	32°27'48.363"N	103°34'12.424"W	0.00	
12300.00†	90.000	179.521	9675.00	2747.96	-2747.86	22.96	776731.26	533069.82	32°27'47.373"N	103°34'12.423"W	0.00	
12400.00†	90.000	179.521	9675.00	2847.96	-2847.86	23.79	776732.09	532969.83	32°27'46.384"N	103°34'12.422"W	0.00	
12500.00†	90.000	179.521	9675.00	2947.96	-2947.85	24.63	776732.93	532869.83	32°27'45.394"N	103°34'12.420"W	0.00	
12600.00†	90.000	179.521	9675.00	3047.96	-3047.85	25.46	776733.76	532769.84	32°27'44.405"N	103°34'12.419"W	0.00	
12700.00†	90.000	179.521	9675.00	3147.96	-3147.85	26.30	776734.60	532669.84	32°27'43.416"N	103°34'12.417"W	0.00	
12800.00†	90.000	179.521	9675.00	3247.96	-3247.84	27.14	776735.43	532569.85	32°27'42.426"N	103°34'12.416"W	0.00	
12900.00†	90.000	179.521	9675.00	3347.96	-3347.84	27.97	776736.27	532469.86	32°27'41.437"N	103°34'12.415"W	0.00	



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 4H SHL
Area	Lea County, NM	Well	No. 4H
Field	(Witherspoon) Sec 21, T21S, R33E	Wellbore	No. 4H PWB
Facility	Witherspoon 21 State Com		

WELLPATH DATA (148 stations) † = interpolated/extrapolated station												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
13000.00†	90.000	179.521	9675.00	3447.96	-3447.84	28.81	776737.11	532369.86	32°27'40.447"N	103°34'12.413"W	0.00	
13100.00†	90.000	179.521	9675.00	3547.96	-3547.83	29.64	776737.94	532269.87	32°27'39.458"N	103°34'12.412"W	0.00	
13200.00†	90.000	179.521	9675.00	3647.96	-3647.83	30.48	776738.78	532169.88	32°27'38.468"N	103°34'12.410"W	0.00	
13300.00†	90.000	179.521	9675.00	3747.96	-3747.83	31.31	776739.61	532069.88	32°27'37.479"N	103°34'12.409"W	0.00	
13400.00†	90.000	179.521	9675.00	3847.96	-3847.82	32.15	776740.45	531969.89	32°27'36.489"N	103°34'12.408"W	0.00	
13500.00†	90.000	179.521	9675.00	3947.96	-3947.82	32.98	776741.28	531869.90	32°27'35.500"N	103°34'12.406"W	0.00	
13600.00†	90.000	179.521	9675.00	4047.96	-4047.82	33.82	776742.12	531769.90	32°27'34.510"N	103°34'12.405"W	0.00	
13700.00†	90.000	179.521	9675.00	4147.96	-4147.81	34.65	776742.95	531669.91	32°27'33.521"N	103°34'12.403"W	0.00	
13800.00†	90.000	179.521	9675.00	4247.96	-4247.81	35.49	776743.79	531569.92	32°27'32.531"N	103°34'12.402"W	0.00	
13900.00†	90.000	179.521	9675.00	4347.96	-4347.81	36.33	776744.62	531469.92	32°27'31.542"N	103°34'12.400"W	0.00	
14000.00†	90.000	179.521	9675.00	4447.96	-4447.80	37.16	776745.46	531369.93	32°27'30.552"N	103°34'12.399"W	0.00	
14100.00†	90.000	179.521	9675.00	4547.96	-4547.80	38.00	776746.30	531269.93	32°27'29.563"N	103°34'12.398"W	0.00	
14172.34	90.000	179.521	9675.00†	4620.30	-4620.14	38.60	776746.90	531197.60	32°27'28.847"N	103°34'12.397"W	0.00	No. 4H PBHL

HOLE & CASING SECTIONS - Ref Wellbore: No. 4H PWB Ref Wellpath: Prelim_1									
String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
12.25in Open Hole	0.00	5200.00	5200.00	0.00	5200.00	0.00	0.00	0.00	0.00
9.625in Casing	0.00	5200.00	5200.00	0.00	5200.00	0.00	0.00	0.00	0.00
7in Open Hole	5200.00	14172.34	8972.34	5200.00	NA	0.00	0.00	NA	NA
5.5in Casing	0.00	14172.34	14172.34	0.00	NA	0.00	0.00	NA	NA

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
1) No. 4H PBHL	14172.34	9675.00	-4620.14	38.60	776746.90	531197.60	32°27'28.847"N	103°34'12.397"W	point

SURVEY PROGRAM - Ref Wellbore: No. 4H PWB Ref Wellpath: Prelim_1				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
3680.00	14172.34	NaviTrak (Standard)		No. 4H PWB