

Cimarex Witherspoon 26-23 State 1H ST01 Rev0 31May16 Proposal
Geodetic Report
 (Non-Def Plan)



OCD – HOBBS
06/01/2016
RECEIVED

Report Date:	May 31, 2016 - 10:48 AM	Survey / DLS Computation:	Minimum Curvature / Lubinski
Client:	Cimarex	Vertical Section Azimuth:	358.250 ° (Grid North)
Field:	NM Lea County (NAD 83)	Vertical Section Origin:	0.000 ft, 0.000 ft
Structure / Slot:	Cimarex Witherspoon 26-23 State 1H / Cimarex Witherspoon 26-23 State 1H	TVD Reference Datum:	Unknown
Well:	Cimarex Witherspoon 26-23 State 1H	TVD Reference Elevation:	3701.400 ft above MSL
Borehole:	ST01	Seabed / Ground Elevation:	3701.400 ft above MSL
UWI / API#:	Unknown / Unknown	Magnetic Declination:	6.932 °
Survey Name:	Cimarex Witherspoon 26-23 State 1H ST01 Rev0 31May16	Total Gravity Field Strength:	998.4730mgm (9.80665 Based)
Survey Date:	May 31, 2016	Gravity Model:	GARM
Tort / AHD / DDI / ERD Ratio:	105.184 ° / 9968.538 ft / 6.273 / 0.806	Total Magnetic Field Strength:	48404.627 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	Magnetic Dip Angle:	60.386 °
Location Lat / Long:	N 32° 26' 36.45447", W 103° 32' 59.02354"	Declination Date:	May 31, 2016
Location Grid N/E Y/X:	N 525948.460 ftUS, E 783072.390 ftUS	Magnetic Declination Model:	HDGM 2016
CRS Grid Convergence Angle:	0.4204 °	North Reference:	Grid North
Grid Scale Factor:	0.99997601	Grid Convergence Used:	0.4204 °
Version / Patch:	2.9.365.0	Total Corr Mag North->Grid North:	6.5111 °
		Local Coord Referenced To:	Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL [330' FSL, 630' FWL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
Build 12" DLS	11845.76	0.00	315.00	11845.76	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
Build & Turn	12208.26	43.50	315.00	12174.43	95.51	92.72	-92.72	12.00	526041.18	782979.67	N 32 26 37.38	W 103 33 0.10
Landing Point	12722.29	91.25	359.58	12375.00	523.41	516.51	-233.58	12.00	526464.96	782838.82	N 32 26 41.58	W 103 33 1.70
Cimarex Witherspoon 26-23 State 1H - PBHL [330' FNL, 400' FWL]	22105.17	91.25	359.58	12170.00	9901.52	9896.90	-302.45	0.00	535845.10	782769.95	N 32 28 14.40	W 103 33 1.71

Survey Type: Non-Def Plan

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

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	22105.169	1/100.000	30.000	30.000		NAL_MWD_HDGM	ST01 / Cimarex Witherspoon 26-23 State 1H ST01 Rev0 31May16

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Report Date: May 31, 2016 - 10:48 AM
 Client: Cimarex
 Field: NM Lea County (NAD 83)
 Structure / Slot: Cimarex Witherspoon 26-23 State 1H / Cimarex Witherspoon 26-23 State 1H
 Well: Cimarex Witherspoon 26-23 State 1H
 Borehole: ST01
 UWI / API#: Unknown / Unknown
 Survey Name: Cimarex Witherspoon 26-23 State 1H ST01 Rev0 31May16
 Survey Date: May 31, 2016
 Tort / AHD / DDI / ERD Ratio: 105.184 ° / 9968.538 ft / 6.273 / 0.806
 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 26' 36.45447", W 103° 32' 59.02354"
 Location Grid N/E Y/X: N 525948.460 ftUS, E 783072.390 ftUS
 CRS Grid Convergence Angle: 0.4204 °
 Grid Scale Factor: 0.99997601
 Version / Patch: 2.9.365.0

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 358.250 ° (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: Unknown
 TVD Reference Elevation: 3701.400 ft above MSL
 Seabed / Ground Elevation: 3701.400 ft above MSL
 Magnetic Declination: 6.932 °
 Total Gravity Field Strength: 998.4730mgn (9.80665 Based)
 Gravity Model: GARM
 Total Magnetic Field Strength: 48404.627 nT
 Magnetic Dip Angle: 60.386 °
 Declination Date: May 31, 2016
 Magnetic Declination Model: HDGM 2016
 North Reference: Grid North
 Grid Convergence Used: 0.4204 °
 Total Corr Mag North->Grid North: 6.5111 °
 Local Coord Referenced To: Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL [330' FSL, 630' FWL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
Build 12" DLS	11845.76	0.00	315.00	11845.76	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
Build & Turn	12208.26	43.50	315.00	12174.43	95.51	92.72	-92.72	12.00	526041.18	782979.67	N 32 26 37.38	W 103 33 0.10
Landing Point	12722.29	91.25	359.58	12375.00	523.41	516.51	-233.58	12.00	526464.96	782838.82	N 32 26 41.58	W 103 33 1.70
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Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma
 Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	22105.169	1/100.000	30.000	30.000		NAL_MWD_HDGM	ST01 / Cimarex Witherspoon 26-23 State 1H ST01 Rev0 31May16

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Client:	Cimarex	Vertical Section Azimuth:	358.250 ° (Grid North)
Field:	NM Lea County (NAD 83)	Vertical Section Origin:	0.000 ft, 0.000 ft
Structure / Slot:	Cimarex Witherspoon 26-23 State 1H / Cimarex Witherspoon 26-23 State 1H	TVD Reference Datum:	Unknown
Well:	Cimarex Witherspoon 26-23 State 1H	TVD Reference Elevation:	3701.400 ft above MSL
Borehole:	ST01	Seabed / Ground Elevation:	3701.400 ft above MSL
UWI / API#:	Unknown / Unknown	Magnetic Declination:	6.932 °
Survey Name:	Cimarex Witherspoon 26-23 State 1H ST01 Rev0 31May16	Total Gravity Field Strength:	998.4730mgn (9.80665 Based)
Survey Date:	May 31, 2016	Gravity Model:	GARM
Tort / AHD / DDI / ERD Ratio:	105.184 ° / 9968.538 ft / 6.273 / 0.806	Total Magnetic Field Strength:	48404.627 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	Magnetic Dip Angle:	60.386 °
Location Lat / Long:	N 32° 26' 36.45447", W 103° 32' 59.02354"	Declination Date:	May 31, 2016
Location Grid N/E Y/X:	N 525948.460 fUS, E 783072.390 fUS	Magnetic Declination Model:	HDGM 2016
CRS Grid Convergence Angle:	0.4204 °	North Reference:	Grid North
Grid Scale Factor:	0.99997601	Grid Convergence Used:	0.4204 °
Version / Patch:	2.9.365.0	Total Corr Mag North->Grid North:	6.5111 °
		Local Coord Referenced To:	Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL [330° FSL, 630° FWL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	100.00	0.00	315.00	100.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	200.00	0.00	315.00	200.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	300.00	0.00	315.00	300.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	400.00	0.00	315.00	400.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	500.00	0.00	315.00	500.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	600.00	0.00	315.00	600.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	700.00	0.00	315.00	700.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	800.00	0.00	315.00	800.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	900.00	0.00	315.00	900.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	1000.00	0.00	315.00	1000.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	1100.00	0.00	315.00	1100.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	1200.00	0.00	315.00	1200.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	1300.00	0.00	315.00	1300.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	1400.00	0.00	315.00	1400.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	1500.00	0.00	315.00	1500.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	1600.00	0.00	315.00	1600.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	1700.00	0.00	315.00	1700.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	1800.00	0.00	315.00	1800.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	1900.00	0.00	315.00	1900.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	2000.00	0.00	315.00	2000.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	2100.00	0.00	315.00	2100.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	2200.00	0.00	315.00	2200.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	2300.00	0.00	315.00	2300.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	2400.00	0.00	315.00	2400.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	2500.00	0.00	315.00	2500.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	2600.00	0.00	315.00	2600.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	2700.00	0.00	315.00	2700.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	2800.00	0.00	315.00	2800.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	2900.00	0.00	315.00	2900.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	3000.00	0.00	315.00	3000.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	3100.00	0.00	315.00	3100.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	3200.00	0.00	315.00	3200.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	3300.00	0.00	315.00	3300.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
3400.00	0.00	315.00	3400.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
3500.00	0.00	315.00	3500.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
3600.00	0.00	315.00	3600.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
3700.00	0.00	315.00	3700.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
3800.00	0.00	315.00	3800.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
3900.00	0.00	315.00	3900.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
4000.00	0.00	315.00	4000.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
4100.00	0.00	315.00	4100.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
4200.00	0.00	315.00	4200.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
4300.00	0.00	315.00	4300.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
4400.00	0.00	315.00	4400.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
4500.00	0.00	315.00	4500.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
4600.00	0.00	315.00	4600.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
4700.00	0.00	315.00	4700.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
4800.00	0.00	315.00	4800.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
4900.00	0.00	315.00	4900.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
5000.00	0.00	315.00	5000.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
5100.00	0.00	315.00	5100.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
5200.00	0.00	315.00	5200.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
5300.00	0.00	315.00	5300.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
5400.00	0.00	315.00	5400.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
5500.00	0.00	315.00	5500.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
5600.00	0.00	315.00	5600.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
5700.00	0.00	315.00	5700.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
5800.00	0.00	315.00	5800.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
5900.00	0.00	315.00	5900.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
6000.00	0.00	315.00	6000.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
6100.00	0.00	315.00	6100.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
6200.00	0.00	315.00	6200.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
6300.00	0.00	315.00	6300.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
6400.00	0.00	315.00	6400.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
6500.00	0.00	315.00	6500.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
6600.00	0.00	315.00	6600.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
6700.00	0.00	315.00	6700.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
6800.00	0.00	315.00	6800.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
6900.00	0.00	315.00	6900.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
7000.00	0.00	315.00	7000.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
7100.00	0.00	315.00	7100.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
7200.00	0.00	315.00	7200.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
7300.00	0.00	315.00	7300.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
7400.00	0.00	315.00	7400.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	
7500.00	0.00	315.00	7500.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02	

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	7600.00	0.00	315.00	7600.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	7700.00	0.00	315.00	7700.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	7800.00	0.00	315.00	7800.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	7900.00	0.00	315.00	7900.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	8000.00	0.00	315.00	8000.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	8100.00	0.00	315.00	8100.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	8200.00	0.00	315.00	8200.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	8300.00	0.00	315.00	8300.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	8400.00	0.00	315.00	8400.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	8500.00	0.00	315.00	8500.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	8600.00	0.00	315.00	8600.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	8700.00	0.00	315.00	8700.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	8800.00	0.00	315.00	8800.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	8900.00	0.00	315.00	8900.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	9000.00	0.00	315.00	9000.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	9100.00	0.00	315.00	9100.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	9200.00	0.00	315.00	9200.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	9300.00	0.00	315.00	9300.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	9400.00	0.00	315.00	9400.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	9500.00	0.00	315.00	9500.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	9600.00	0.00	315.00	9600.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	9700.00	0.00	315.00	9700.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	9800.00	0.00	315.00	9800.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	9900.00	0.00	315.00	9900.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	10000.00	0.00	315.00	10000.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	10100.00	0.00	315.00	10100.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	10200.00	0.00	315.00	10200.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	10300.00	0.00	315.00	10300.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	10400.00	0.00	315.00	10400.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	10500.00	0.00	315.00	10500.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	10600.00	0.00	315.00	10600.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	10700.00	0.00	315.00	10700.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	10800.00	0.00	315.00	10800.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	10900.00	0.00	315.00	10900.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	11000.00	0.00	315.00	11000.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	11100.00	0.00	315.00	11100.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	11200.00	0.00	315.00	11200.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	11300.00	0.00	315.00	11300.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	11400.00	0.00	315.00	11400.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	11500.00	0.00	315.00	11500.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	11600.00	0.00	315.00	11600.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	11700.00	0.00	315.00	11700.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	11800.00	0.00	315.00	11800.00	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
Build 12" DLS	11845.76	0.00	315.00	11845.76	0.00	0.00	0.00	0.00	525948.46	783072.39	N 32 26 36.45	W 103 32 59.02
	11900.00	6.51	315.00	11899.88	2.24	2.18	-2.18	12.00	525960.64	783070.21	N 32 26 36.48	W 103 32 59.05
	12000.00	18.51	315.00	11997.33	17.99	17.46	-17.46	12.00	525965.92	783054.93	N 32 26 36.63	W 103 32 59.23
	12100.00	30.51	315.00	12088.15	48.15	46.74	-46.74	12.00	525995.20	783025.65	N 32 26 36.92	W 103 32 59.56
Build & Turn	12200.00	42.51	315.00	12168.38	91.40	88.74	-88.74	12.00	526037.19	782983.66	N 32 26 37.34	W 103 33 0.05
	12208.26	43.50	315.00	12174.43	95.51	92.72	-92.72	12.00	526041.18	782979.67	N 32 26 37.38	W 103 33 0.10
	12300.00	50.75	326.34	12236.91	148.82	144.77	-134.87	12.00	526093.23	782937.53	N 32 26 37.90	W 103 33 0.58
	12400.00	59.66	336.16	12294.01	221.94	216.73	-173.91	12.00	526165.19	782898.48	N 32 26 38.61	W 103 33 1.03
	12500.00	69.17	344.29	12337.21	307.59	301.50	-204.11	12.00	526249.95	782866.28	N 32 26 39.45	W 103 33 1.38
	12600.00	79.01	351.44	12364.63	402.03	395.36	-224.14	12.00	526343.81	782848.25	N 32 26 40.38	W 103 33 1.61
Landing Point	12700.00	89.02	358.11	12375.05	501.12	494.23	-233.13	12.00	526442.67	782839.26	N 32 26 41.36	W 103 33 1.70
	12722.29	91.25	359.58	12375.00	523.41	516.51	-233.58	12.00	526464.96	782838.82	N 32 26 41.58	W 103 33 1.70
	12800.00	91.25	359.58	12373.30	601.07	594.20	-234.15	0.00	526542.64	782838.24	N 32 26 42.35	W 103 33 1.70
	12900.00	91.25	359.58	12371.12	701.02	694.17	-234.89	0.00	526642.62	782837.51	N 32 26 43.34	W 103 33 1.70
	13000.00	91.25	359.58	12368.93	800.97	794.15	-235.62	0.00	526742.59	782836.78	N 32 26 44.33	W 103 33 1.70
	13100.00	91.25	359.58	12366.75	900.92	894.12	-236.35	0.00	526842.56	782836.04	N 32 26 45.32	W 103 33 1.70
	13200.00	91.25	359.58	12364.56	1000.87	994.09	-237.09	0.00	526942.53	782835.31	N 32 26 46.31	W 103 33 1.70
	13300.00	91.25	359.58	12362.38	1100.82	1094.07	-237.82	0.00	527042.50	782834.57	N 32 26 47.30	W 103 33 1.70
	13400.00	91.25	359.58	12360.19	1200.77	1194.04	-238.56	0.00	527142.47	782833.84	N 32 26 48.29	W 103 33 1.70
	13500.00	91.25	359.58	12358.01	1300.72	1294.01	-239.29	0.00	527242.44	782833.11	N 32 26 49.28	W 103 33 1.70
	13600.00	91.25	359.58	12355.82	1400.67	1393.99	-240.02	0.00	527342.41	782832.37	N 32 26 50.26	W 103 33 1.71
	13700.00	91.25	359.58	12353.64	1500.62	1493.96	-240.76	0.00	527442.38	782831.64	N 32 26 51.25	W 103 33 1.71
	13800.00	91.25	359.58	12351.45	1600.57	1593.93	-241.49	0.00	527542.35	782830.91	N 32 26 52.24	W 103 33 1.71
	13900.00	91.25	359.58	12349.27	1700.52	1693.91	-242.22	0.00	527642.32	782830.17	N 32 26 53.23	W 103 33 1.71
	14000.00	91.25	359.58	12347.08	1800.47	1793.88	-242.96	0.00	527742.29	782829.44	N 32 26 54.22	W 103 33 1.71
	14100.00	91.25	359.58	12344.90	1900.41	1893.85	-243.69	0.00	527842.27	782828.70	N 32 26 55.21	W 103 33 1.71
	14200.00	91.25	359.58	12342.72	2000.36	1993.83	-244.43	0.00	527942.24	782827.97	N 32 26 56.20	W 103 33 1.71
	14300.00	91.25	359.58	12340.53	2100.31	2093.80	-245.16	0.00	528042.21	782827.24	N 32 26 57.19	W 103 33 1.71
	14400.00	91.25	359.58	12338.35	2200.26	2193.77	-245.89	0.00	528142.18	782826.50	N 32 26 58.18	W 103 33 1.71
	14500.00	91.25	359.58	12336.16	2300.21	2293.75	-246.63	0.00	528242.15	782825.77	N 32 26 59.17	W 103 33 1.71
	14600.00	91.25	359.58	12333.98	2400.16	2393.72	-247.36	0.00	528342.12	782825.03	N 32 27 0.16	W 103 33 1.71
	14700.00	91.25	359.58	12331.79	2500.11	2493.70	-248.10	0.00	528442.09	782824.30	N 32 27 1.15	W 103 33 1.71
	14800.00	91.25	359.58	12329.61	2600.06	2593.67	-248.83	0.00	528542.06	782823.57	N 32 27 2.14	W 103 33 1.71
	14900.00	91.25	359.58	12327.42	2700.01	2693.64	-249.56	0.00	528642.03	782822.83	N 32 27 3.12	W 103 33 1.71
	15000.00	91.25	359.58	12325.24	2799.96	2793.62	-					

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS ("/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	18200.00	91.25	359.58	12255.32	5998.33	5992.77	-273.79	0.00	531941.07	782788.61	N 32 27 35.77	W 103 33 1.71
	18300.00	91.25	359.58	12253.14	6098.28	6092.74	-274.52	0.00	532041.04	782787.88	N 32 27 36.76	W 103 33 1.71
	18400.00	91.25	359.58	12250.95	6198.23	6192.71	-275.25	0.00	532141.01	782787.14	N 32 27 37.75	W 103 33 1.71
	18500.00	91.25	359.58	12248.77	6298.18	6292.69	-275.99	0.00	532240.98	782786.41	N 32 27 38.74	W 103 33 1.71
	18600.00	91.25	359.58	12246.58	6398.13	6392.66	-276.72	0.00	532340.95	782785.68	N 32 27 39.73	W 103 33 1.71
	18700.00	91.25	359.58	12244.40	6498.08	6492.63	-277.46	0.00	532440.92	782784.94	N 32 27 40.72	W 103 33 1.71
	18800.00	91.25	359.58	12242.21	6598.03	6592.61	-278.19	0.00	532540.89	782784.21	N 32 27 41.71	W 103 33 1.71
	18900.00	91.25	359.58	12240.03	6697.98	6692.58	-278.92	0.00	532640.87	782783.47	N 32 27 42.69	W 103 33 1.71
	19000.00	91.25	359.58	12237.84	6797.93	6792.55	-279.66	0.00	532740.84	782782.74	N 32 27 43.68	W 103 33 1.71
	19100.00	91.25	359.58	12235.66	6897.87	6892.53	-280.39	0.00	532840.81	782782.01	N 32 27 44.67	W 103 33 1.71
	19200.00	91.25	359.58	12233.47	6997.82	6992.50	-281.13	0.00	532940.78	782781.27	N 32 27 45.66	W 103 33 1.71
	19300.00	91.25	359.58	12231.29	7097.77	7092.47	-281.86	0.00	533040.75	782780.54	N 32 27 46.65	W 103 33 1.71
	19400.00	91.25	359.58	12229.10	7197.72	7192.45	-282.59	0.00	533140.72	782780.00	N 32 27 47.64	W 103 33 1.71
	19500.00	91.25	359.58	12226.92	7297.67	7292.42	-283.33	0.00	533240.69	782780.00	N 32 27 48.63	W 103 33 1.71
	19600.00	91.25	359.58	12224.73	7397.62	7392.39	-284.06	0.00	533340.66	782780.00	N 32 27 49.62	W 103 33 1.71
	19700.00	91.25	359.58	12222.55	7497.57	7492.37	-284.79	0.00	533440.63	782780.00	N 32 27 50.61	W 103 33 1.71
	19800.00	91.25	359.58	12220.36	7597.52	7592.34	-285.53	0.00	533540.60	782780.00	N 32 27 51.60	W 103 33 1.71
	19900.00	91.25	359.58	12218.18	7697.47	7692.31	-286.26	0.00	533640.57	782780.00	N 32 27 52.59	W 103 33 1.71
	20000.00	91.25	359.58	12215.99	7797.42	7792.29	-287.00	0.00	533740.54	782780.00	N 32 27 53.58	W 103 33 1.71
	20100.00	91.25	359.58	12213.81	7897.37	7892.26	-287.73	0.00	533840.52	782780.00	N 32 27 54.57	W 103 33 1.71
	20200.00	91.25	359.58	12211.62	7997.32	7992.23	-288.46	0.00	533940.49	782780.00	N 32 27 55.55	W 103 33 1.71
	20300.00	91.25	359.58	12209.44	8097.27	8092.21	-289.20	0.00	534040.46	782780.00	N 32 27 56.54	W 103 33 1.71
	20400.00	91.25	359.58	12207.26	8197.21	8192.18	-289.93	0.00	534140.43	782780.00	N 32 27 57.53	W 103 33 1.71
	20500.00	91.25	359.58	12205.07	8297.16	8292.15	-290.67	0.00	534240.40	782780.00	N 32 27 58.52	W 103 33 1.71
	20600.00	91.25	359.58	12202.89	8397.11	8392.13	-291.40	0.00	534340.37	782780.00	N 32 27 59.51	W 103 33 1.71
	20700.00	91.25	359.58	12200.70	8497.06	8492.10	-292.13	0.00	534440.34	782780.00	N 32 28 0.50	W 103 33 1.71
	20800.00	91.25	359.58	12198.52	8597.01	8592.07	-292.87	0.00	534540.31	782780.00	N 32 28 1.49	W 103 33 1.71
	20900.00	91.25	359.58	12196.33	8696.96	8692.05	-293.60	0.00	534640.28	782780.00	N 32 28 2.48	W 103 33 1.71
	21000.00	91.25	359.58	12194.15	8796.91	8792.02	-294.34	0.00	534740.25	782780.00	N 32 28 3.47	W 103 33 1.71
	21100.00	91.25	359.58	12191.98	8896.86	8891.99	-295.07	0.00	534840.22	782780.00	N 32 28 4.46	W 103 33 1.71
	21200.00	91.25	359.58	12189.78	8996.81	8991.97	-295.80	0.00	534940.19	782780.00	N 32 28 5.45	W 103 33 1.71
	21300.00	91.25	359.58	12187.59	9096.76	9091.94	-296.54	0.00	535040.17	782780.00	N 32 28 6.44	W 103 33 1.71
	21400.00	91.25	359.58	12185.41	9196.71	9191.92	-297.27	0.00	535140.14	782780.00	N 32 28 7.43	W 103 33 1.71
	21500.00	91.25	359.58	12183.22	9296.66	9291.89	-298.01	0.00	535240.11	782780.00	N 32 28 8.41	W 103 33 1.71
	21600.00	91.25	359.58	12181.04	9396.60	9391.85	-298.74	0.00	535340.08	782780.00	N 32 28 9.40	W 103 33 1.71
	21700.00	91.25	359.58	12178.85	9496.55	9491.84	-299.47	0.00	535440.05	782780.00	N 32 28 10.39	W 103 33 1.71
	21800.00	91.25	359.58	12176.67	9596.50	9591.81	-300.21	0.00	535540.02	782780.00	N 32 28 11.38	W 103 33 1.71
	21900.00	91.25	359.58	12174.48	9696.45	9691.78	-300.94	0.00	535639.99	782780.00	N 32 28 12.37	W 103 33 1.71
	22000.00	91.25	359.58	12172.30	9796.40	9791.76	-301.68	0.00	535739.96	782780.00	N 32 28 13.36	W 103 33 1.71
	22100.00	91.25	359.58	12170.11	9896.35	9891.73	-302.41	0.00	535839.93	782780.00	N 32 28 14.35	W 103 33 1.71

Cimarex
Witherspoon 26-
23 State 1H -
PBHL [330' FNL,
400' FWL]

Survey Type: Non-Def Plan

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

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	22105.169	1/100.000	30.000	30.000		NAL_MWD_HDGM	ST01 / Cimarex Witherspoon 26- 23 State 1H ST01 Rev0 31May16