



Rig TBD

Cimarex

REV 1

PATHFINDER
A Schlumberger Company

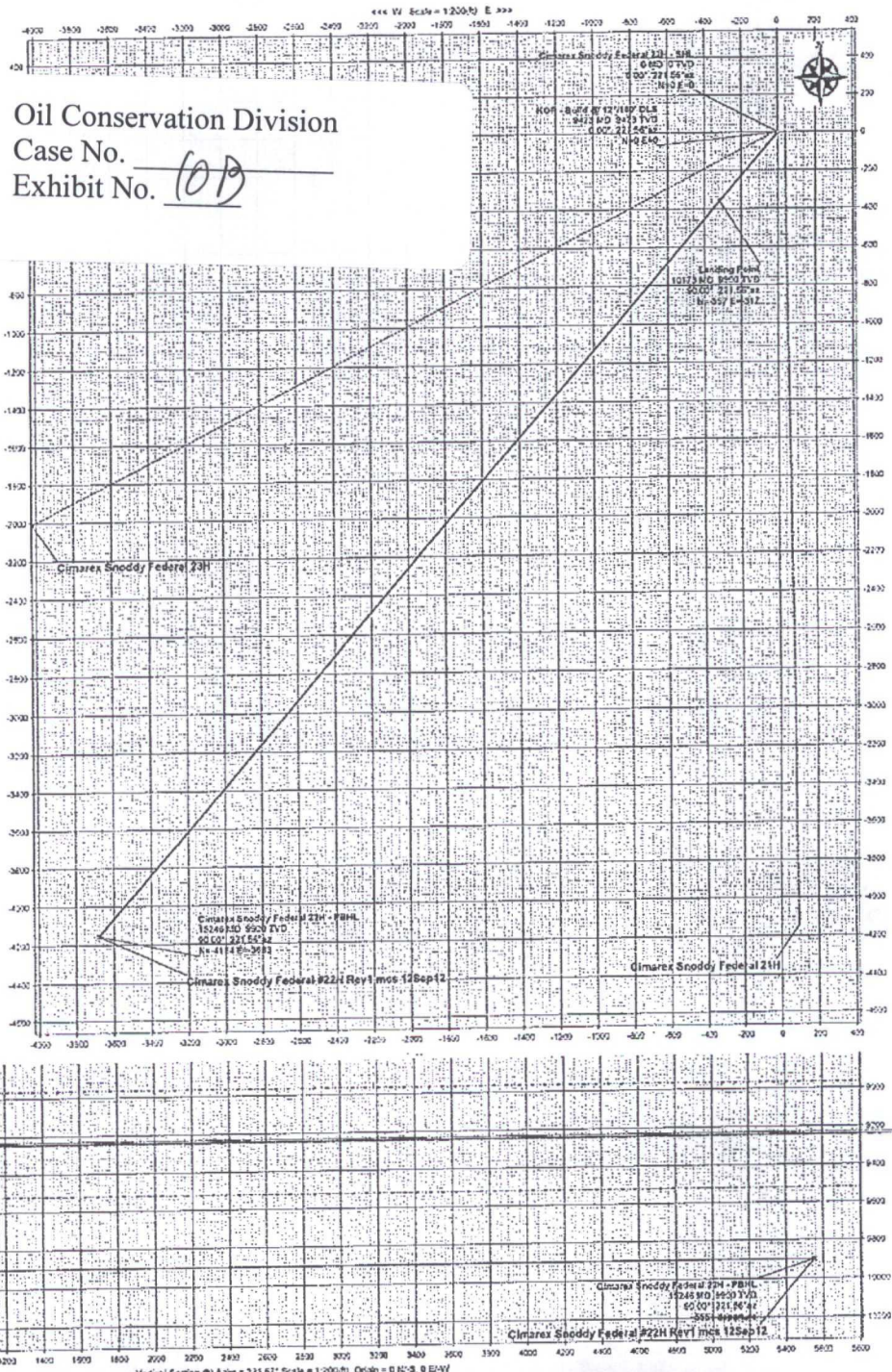
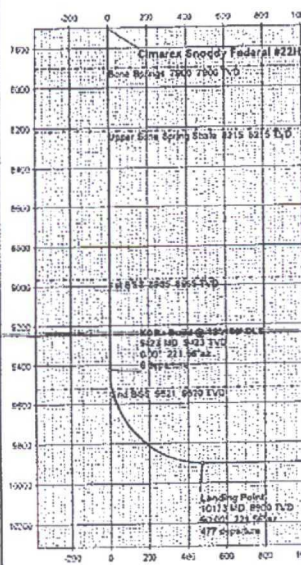
WELL				FIELD				STRUCTURE			
Cimarex Snoddy Federal #22H				Lea County, NM (NAD 83)				Cimarex Snoddy Federal #22H			
Logwell Number	Logwell Date	Logwell Type	Logwell Unit	Surface Location	Logwell Depth	Logwell Interval	Logwell Interval	Logwell Interval	Logwell Interval	Logwell Interval	Logwell Interval
10172.56	03/21/2012	Log	Logwell	Logwell	Logwell	Logwell	Logwell	Logwell	Logwell	Logwell	Logwell

Oil Conservation Division
Case No. _____
Exhibit No. 100

Legend

Well Path	Well Path
Well Path	Well Path
Well Path	Well Path
Well Path	Well Path

Grid North
Tot Corr (M-G 7.3143°)
Mag Dec (7.639°)
Grid Conv (0.324°)



Critical Points													
Comments	Survey MD	Inc	Azim	TVD	SSTVD	VS	NS	EW	Longitude	Latitude	Easting	Northing	DLS Tool Face
SHL	0.00	0.00	221.56	0.00	-3555.00	0.00	0.00	0.00	W 103 43 48.915 N	32 32 57.099	727163.40	564053.70	221.56
Delaware Sands	5235.00	0.00	221.56	5235.00	1680.00	0.00	0.00	0.00	W 103 43 48.915 N	32 32 57.099	727163.40	564053.70	0.00
Bone Springs	7900.00	0.00	221.56	7900.00	4345.00	0.00	0.00	0.00	W 103 43 48.915 N	32 32 57.099	727163.40	564053.70	0.00
Upper Bone Spring Shale	8215.00	0.00	221.56	8215.00	4660.00	0.00	0.00	0.00	W 103 43 48.915 N	32 32 57.099	727163.40	564053.70	0.00
1st BSS	8965.00	0.00	221.56	8965.00	5410.00	0.00	0.00	0.00	W 103 43 48.915 N	32 32 57.099	727163.40	564053.70	0.00
KOP - Build @ 12°/100' DLS	9422.50	0.00	221.56	9422.50	5867.50	0.00	0.00	0.00	W 103 43 48.915 N	32 32 57.099	727163.40	564053.70	0.00
2nd BSS	9520.69	11.78	221.56	9520.00	5965.00	10.06	-7.53	-6.67	W 103 43 48.993 N	32 32 57.025	727156.73	564045.17	12.00
Landing Point	10172.56	90.00	221.56	9900.00	6345.00	477.50	-357.32	-316.74	W 103 43 52.639 N	32 32 53.581	726846.67	563666.40	60.00
PBHL	15246.35	90.00	221.56	9900.00	6345.00	5551.29	-4154.02	-3682.53	W 103 44 32.205 N	32 32 16.201	723481.06	558899.90	0.00

Drawn By: [Name]
Checked By: [Name]
Approved By: [Name]
Date: [Date]



Cimarex Snoddy Federal #22H Rev1 mcs 12Sep12 Proposal Geodetic Report
(Def Plan)

PATHFINDER
A Schlumberger Company

Report: September 12, 2012 - 01:22 PM
Client: Cimarex
Field: NM Lea County (NAD 83)
Structure / Slot: Cimarex Snoddy Federal #22H / Cimarex Snoddy Federal #22H
Well: Cimarex Snoddy Federal #22H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Snoddy Federal #22H Rev1 mcs 12Sep12
Survey Date: August 26, 2012
Tort / AHD / DDI / ERD Ratio: 90.004 * / 5551.299 ft / 5.886 / 0.561
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 32' 57.09897", W 103° 43' 48.91497"
Location Grid N/E Y/X: N 564053.700 ftUS, E 727163.400 ftUS
CRS Grid Convergence Angle: 0.3245 °
Grid Scale Factor: 0.99994864

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 221.674 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: Drillsite Elevation
TVD Reference Elevation: 3555.000 ft above MSL
Seabed / Ground Elevation: 3555.000 ft above MSL
Magnetic Declination: 7.639 °
Total Gravity Field Strength: 999.1774 mgn (9.8 based)
Total Magnetic Field Strength: 48666.739 nT
Magnetic Dip Angle: 60.397 °
Declination Date: August 26, 2012
Magnetic Declination Model: BGM 2012
North Reference: Grid North
Grid Convergence Used: 0.3245 °

Total Corr Mag North->Grid North: 7.3143 °

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 ° ' ")
Cimarex Snoddy Federal 22H - SHL	0.00	0.00	221.56	0.00	0.00	0.00	0.00	N/A	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	100.00	0.00	221.56	100.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	200.00	0.00	221.56	200.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	300.00	0.00	221.56	300.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	400.00	0.00	221.56	400.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	500.00	0.00	221.56	500.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	600.00	0.00	221.56	600.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	700.00	0.00	221.56	700.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	800.00	0.00	221.56	800.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	900.00	0.00	221.56	900.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	1000.00	0.00	221.56	1000.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	1100.00	0.00	221.56	1100.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	1200.00	0.00	221.56	1200.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	1300.00	0.00	221.56	1300.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	1400.00	0.00	221.56	1400.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	1500.00	0.00	221.56	1500.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	1600.00	0.00	221.56	1600.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	1700.00	0.00	221.56	1700.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	1800.00	0.00	221.56	1800.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	1900.00	0.00	221.56	1900.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	2000.00	0.00	221.56	2000.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	2100.00	0.00	221.56	2100.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	2200.00	0.00	221.56	2200.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	2300.00	0.00	221.56	2300.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	2400.00	0.00	221.56	2400.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	2500.00	0.00	221.56	2500.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	2600.00	0.00	221.56	2600.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	2700.00	0.00	221.56	2700.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	2800.00	0.00	221.56	2800.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	2900.00	0.00	221.56	2900.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	3000.00	0.00	221.56	3000.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	3100.00	0.00	221.56	3100.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	3200.00	0.00	221.56	3200.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	3300.00	0.00	221.56	3300.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	3400.00	0.00	221.56	3400.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	3500.00	0.00	221.56	3500.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	3600.00	0.00	221.56	3600.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	3700.00	0.00	221.56	3700.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	3800.00	0.00	221.56	3800.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	3900.00	0.00	221.56	3900.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	4000.00	0.00	221.56	4000.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	4100.00	0.00	221.56	4100.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	4200.00	0.00	221.56	4200.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	4300.00	0.00	221.56	4300.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	4400.00	0.00	221.56	4400.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	4500.00	0.00	221.56	4500.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	4600.00	0.00	221.56	4600.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	4700.00	0.00	221.56	4700.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	4800.00	0.00	221.56	4800.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	4900.00	0.00	221.56	4900.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	5000.00	0.00	221.56	5000.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	5100.00	0.00	221.56	5100.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	5200.00	0.00	221.56	5200.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
Delaware Sands	5235.00	0.00	221.56	5235.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	5300.00	0.00	221.56	5300.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	5400.00	0.00	221.56	5400.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	5500.00	0.00	221.56	5500.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	5600.00	0.00	221.56	5600.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	5700.00	0.00	221.56	5700.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	5800.00	0.00	221.56	5800.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	5900.00	0.00	221.56	5900.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	6000.00	0.00	221.56	6000.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	6100.00	0.00	221.56	6100.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	6200.00	0.00	221.56	6200.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	6300.00	0.00	221.56	6300.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	6400.00	0.00	221.56	6400.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	6500.00	0.00	221.56	6500.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	6600.00	0.00	221.56	6600.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	6700.00	0.00	221.56	6700.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	6800.00	0.00	221.56	6800.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	6900.00	0.00	221.56	6900.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	7000.00	0.00	221.56	7000.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	7100.00	0.00	221.56	7100.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	7200.00	0.00	221.56	7200.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91

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 ° ' '')
	7300.00	0.00	221.56	7300.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	7400.00	0.00	221.56	7400.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	7500.00	0.00	221.56	7500.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	7600.00	0.00	221.56	7600.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	7700.00	0.00	221.56	7700.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	7800.00	0.00	221.56	7800.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
Bone Springs	7900.00	0.00	221.56	7900.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	8000.00	0.00	221.56	8000.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	8100.00	0.00	221.56	8100.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	8200.00	0.00	221.56	8200.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
Upper Bone Spring Shale	8215.00	0.00	221.56	8215.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	8300.00	0.00	221.56	8300.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	8400.00	0.00	221.56	8400.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	8500.00	0.00	221.56	8500.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	8600.00	0.00	221.56	8600.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	8700.00	0.00	221.56	8700.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	8800.00	0.00	221.56	8800.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	8900.00	0.00	221.56	8900.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
1st BSS	8965.00	0.00	221.56	8965.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	9000.00	0.00	221.56	9000.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	9100.00	0.00	221.56	9100.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	9200.00	0.00	221.56	9200.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	9300.00	0.00	221.56	9300.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	9400.00	0.00	221.56	9400.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
KOP - Build @ 12"/100' DLS	9422.50	0.00	221.56	9422.50	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
	9500.00	9.30	221.56	9499.66	6.28	-4.70	-4.16	12.00	564049.00	727159.24	N 32 32 57.05	W 103 43 48.96
2nd BSS	9520.69	11.78	221.56	9520.00	10.06	-7.53	-6.67	12.00	564046.17	727156.73	N 32 32 57.02	W 103 43 48.99
	9600.00	21.30	221.56	9595.94	32.61	-24.40	-21.63	12.00	564029.30	727141.77	N 32 32 56.86	W 103 43 49.17
	9700.00	33.30	221.56	9684.64	78.39	-58.66	-52.00	12.00	563995.04	727111.40	N 32 32 56.52	W 103 43 49.53
	9800.00	45.30	221.56	9761.89	141.61	-105.97	-93.93	12.00	563947.74	727069.47	N 32 32 56.06	W 103 43 50.02
	9900.00	57.30	221.56	9824.30	219.51	-164.26	-145.61	12.00	563889.45	727017.80	N 32 32 55.48	W 103 43 50.63
	10000.00	69.29	221.56	9869.16	308.68	-230.99	-204.76	12.00	563822.72	726958.65	N 32 32 54.82	W 103 43 51.32
	10100.00	81.29	221.56	9894.50	405.22	-303.24	-268.80	12.00	563750.48	726894.61	N 32 32 54.11	W 103 43 52.08
Landing Point	10172.56	90.00	221.56	9900.00	477.50	-357.32	-316.74	12.00	563696.40	726846.67	N 32 32 53.58	W 103 43 52.64
	10200.00	90.00	221.56	9900.00	504.94	-377.86	-334.95	0.00	563675.86	726828.47	N 32 32 53.38	W 103 43 52.85
	10300.00	90.00	221.56	9900.00	604.94	-452.69	-401.28	0.00	563601.03	726762.14	N 32 32 52.64	W 103 43 53.63
	10400.00	90.00	221.56	9900.00	704.94	-527.52	-467.62	0.00	563526.20	726695.81	N 32 32 51.91	W 103 43 54.41
	10500.00	90.00	221.56	9900.00	804.94	-602.36	-533.95	0.00	563451.38	726629.48	N 32 32 51.17	W 103 43 55.19
	10600.00	90.00	221.56	9900.00	904.94	-677.19	-600.29	0.00	563376.55	726563.15	N 32 32 50.43	W 103 43 55.97
	10700.00	90.00	221.56	9900.00	1004.94	-752.02	-666.62	0.00	563301.72	726496.82	N 32 32 49.70	W 103 43 56.75
	10800.00	90.00	221.56	9900.00	1104.94	-826.85	-732.95	0.00	563226.89	726430.48	N 32 32 48.96	W 103 43 57.53
	10900.00	90.00	221.56	9900.00	1204.94	-901.68	-799.29	0.00	563152.07	726364.15	N 32 32 48.22	W 103 43 58.31
	11000.00	90.00	221.56	9900.00	1304.94	-976.51	-865.62	0.00	563077.24	726297.82	N 32 32 47.49	W 103 43 59.09
	11100.00	90.00	221.56	9900.00	1404.94	-1051.34	-931.96	0.00	563002.41	726231.49	N 32 32 46.75	W 103 43 59.87
	11200.00	90.00	221.56	9900.00	1504.94	-1126.17	-998.29	0.00	562927.59	726165.16	N 32 32 46.01	W 103 44 0.65
	11300.00	90.00	221.56	9900.00	1604.94	-1201.00	-1064.63	0.00	562852.76	726098.83	N 32 32 45.28	W 103 44 1.43

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (RUS)	Easting (RUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	11400.00	90.00	221.56	9900.00	1704.94	-1275.84	-1130.96	0.00	562777.93	726032.50	N 32 32 44.54	W 103 44 2.21
	11500.00	90.00	221.56	9900.00	1804.94	-1350.67	-1197.30	0.00	562703.11	725966.16	N 32 32 43.80	W 103 44 2.99
	11600.00	90.00	221.56	9900.00	1904.94	-1425.50	-1263.63	0.00	562628.28	725899.83	N 32 32 43.06	W 103 44 3.77
	11700.00	90.00	221.56	9900.00	2004.94	-1500.33	-1329.97	0.00	562553.45	725833.50	N 32 32 42.33	W 103 44 4.55
	11800.00	90.00	221.56	9900.00	2104.94	-1575.16	-1396.31	0.00	562478.63	725767.17	N 32 32 41.59	W 103 44 5.33
	11900.00	90.00	221.56	9900.00	2204.94	-1649.99	-1462.64	0.00	562403.80	725700.84	N 32 32 40.85	W 103 44 6.11
	12000.00	90.00	221.56	9900.00	2304.94	-1724.82	-1528.98	0.00	562328.97	725634.50	N 32 32 40.12	W 103 44 6.89
	12100.00	90.00	221.56	9900.00	2404.94	-1799.65	-1595.31	0.00	562254.15	725568.17	N 32 32 39.38	W 103 44 7.67
	12200.00	90.00	221.56	9900.00	2504.94	-1874.48	-1661.65	0.00	562179.32	725501.84	N 32 32 38.64	W 103 44 8.45
	12300.00	90.00	221.56	9900.00	2604.94	-1949.31	-1727.99	0.00	562104.50	725435.51	N 32 32 37.91	W 103 44 9.23
	12400.00	90.00	221.56	9900.00	2704.94	-2024.14	-1794.32	0.00	562029.67	725369.17	N 32 32 37.17	W 103 44 10.01
	12500.00	90.00	221.56	9900.00	2804.94	-2098.97	-1860.66	0.00	561954.84	725302.84	N 32 32 36.43	W 103 44 10.79
	12600.00	90.00	221.56	9900.00	2904.94	-2173.80	-1926.99	0.00	561880.02	725236.51	N 32 32 35.70	W 103 44 11.57
	12700.00	90.00	221.56	9900.00	3004.94	-2248.63	-1993.33	0.00	561805.19	725170.17	N 32 32 34.96	W 103 44 12.35
	12800.00	90.00	221.56	9900.00	3104.94	-2323.46	-2059.67	0.00	561730.37	725103.84	N 32 32 34.22	W 103 44 13.13
	12900.00	90.00	221.56	9900.00	3204.94	-2398.29	-2126.01	0.00	561655.54	725037.51	N 32 32 33.49	W 103 44 13.91
	13000.00	90.00	221.56	9900.00	3304.94	-2473.11	-2192.34	0.00	561580.72	724971.17	N 32 32 32.75	W 103 44 14.69
	13100.00	90.00	221.56	9900.00	3404.94	-2547.94	-2258.68	0.00	561505.89	724904.84	N 32 32 32.01	W 103 44 15.47
	13200.00	90.00	221.56	9900.00	3504.94	-2622.77	-2325.02	0.00	561431.07	724838.51	N 32 32 31.28	W 103 44 16.25
	13300.00	90.00	221.56	9900.00	3604.94	-2697.60	-2391.35	0.00	561356.24	724772.17	N 32 32 30.54	W 103 44 17.03
	13400.00	90.00	221.56	9900.00	3704.94	-2772.43	-2457.69	0.00	561281.42	724705.84	N 32 32 29.80	W 103 44 17.81
	13500.00	90.00	221.56	9900.00	3804.94	-2847.26	-2524.03	0.00	561206.59	724639.51	N 32 32 29.07	W 103 44 18.59
	13600.00	90.00	221.56	9900.00	3904.94	-2922.09	-2590.37	0.00	561131.77	724573.17	N 32 32 28.33	W 103 44 19.37
	13700.00	90.00	221.56	9900.00	4004.94	-2996.92	-2656.70	0.00	561056.94	724506.84	N 32 32 27.59	W 103 44 20.15
	13800.00	90.00	221.56	9900.00	4104.94	-3071.74	-2723.04	0.00	560982.12	724440.50	N 32 32 26.86	W 103 44 20.93
	13900.00	90.00	221.56	9900.00	4204.94	-3146.57	-2789.38	0.00	560907.29	724374.17	N 32 32 26.12	W 103 44 21.71
	14000.00	90.00	221.56	9900.00	4304.94	-3221.40	-2855.72	0.00	560832.47	724307.83	N 32 32 25.38	W 103 44 22.49
	14100.00	90.00	221.56	9900.00	4404.94	-3296.23	-2922.06	0.00	560757.65	724241.50	N 32 32 24.65	W 103 44 23.27
	14200.00	90.00	221.56	9900.00	4504.94	-3371.06	-2988.39	0.00	560682.82	724175.17	N 32 32 23.91	W 103 44 24.05
	14300.00	90.00	221.56	9900.00	4604.94	-3445.89	-3054.73	0.00	560608.00	724108.83	N 32 32 23.17	W 103 44 24.83
	14400.00	90.00	221.56	9900.00	4704.93	-3520.71	-3121.07	0.00	560533.17	724042.50	N 32 32 22.44	W 103 44 25.61
	14500.00	90.00	221.56	9900.00	4804.93	-3595.54	-3187.41	0.00	560458.35	723976.16	N 32 32 21.70	W 103 44 26.38
	14600.00	90.00	221.56	9900.00	4904.93	-3670.37	-3253.75	0.00	560383.53	723909.83	N 32 32 20.96	W 103 44 27.16
	14700.00	90.00	221.56	9900.00	5004.93	-3745.20	-3320.09	0.00	560308.70	723843.49	N 32 32 20.23	W 103 44 27.94
	14800.00	90.00	221.56	9900.00	5104.93	-3820.02	-3386.43	0.00	560233.88	723777.15	N 32 32 19.49	W 103 44 28.72
	14900.00	90.00	221.56	9900.00	5204.93	-3894.85	-3452.77	0.00	560159.06	723710.82	N 32 32 18.75	W 103 44 29.50
	15000.00	90.00	221.56	9900.00	5304.93	-3969.68	-3519.10	0.00	560084.23	723644.48	N 32 32 18.02	W 103 44 30.28
	15100.00	90.00	221.56	9900.00	5404.93	-4044.50	-3585.44	0.00	560009.41	723578.15	N 32 32 17.28	W 103 44 31.06
	15200.00	90.00	221.56	9900.00	5504.93	-4119.33	-3651.78	0.00	559934.59	723511.81	N 32 32 16.54	W 103 44 31.84
Cimarex Snoddy Federal 22H - PBHL	15246.35	90.00	221.56	9900.00	5551.29	-4154.02	-3682.53	0.00	559899.90	723481.06	N 32 32 16.20	W 103 44 32.20

Survey Type: Def Plan

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

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 ° ' ")
Survey Program:												
Description	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type		Borehole / Survey				
	0.000	9400.000		1/100.000	30.000	30.000	SLB_NSG+MSHOT	Original Borehole / Cimarex Snoddy Federal #22H Rev1 mcs				
	9400.000	15246.354		1/100.000	30.000	30.000	SLB_MWD-STD	Original Borehole / Cimarex Snoddy Federal #22H Rev1 mcs				



Cimarex Snoddy Federal #22H Rev1 mcs 12Sep12 Proposal Geodetic Report



(Def Plan)

Report Date: September 12, 2012 - 01:17 PM
 Client: Cimarex
 Field: NM Lea County (NAD 83)
 Structure / Slot: Cimarex Snoddy Federal #22H / Cimarex Snoddy Federal #22H
 Well: Cimarex Snoddy Federal #22H
 Borehole: Original Borehole
 UWI / API#: Unknown / Unknown
 Survey Name: Cimarex Snoddy Federal #22H Rev1 mcs 12Sep12
 Survey Date: August 26, 2012
 Tort / AHD / DDI / ERD Ratio: 90.004 ° / 5551.299 ft / 5.886 / 0.561
 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 32' 57.09897", W 103° 43' 48.91497"
 Location Grid N/E Y/X: N 564053.700 ftUS, E 727163.400 ftUS
 CRS Grid Convergence Angle: 0.3245 °
 Grid Scale Factor: 0.99994864

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 221.674 ° (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: Drillsite Elevation
 TVD Reference Elevation: 3555.000 ft above MSL
 Seabed / Ground Elevation: 3555.000 ft above MSL
 Magnetic Declination: 7.639 °
 Total Gravity Field Strength: 999.1774 mgn (9.8 based)
 Total Magnetic Field Strength: 48666.739 nT
 Magnetic Dip Angle: 60.397 °
 Declination Date: August 26, 2012
 Magnetic Declination Model: BGGM 2012
 North Reference: Grid North
 Grid Convergence Used: 0.3245 °
 Total Corr Mag North->Grid North: 7.3143 °

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 ° ' ")
Cimarex Snoddy Federal 22H - SHL	0.00	0.00	221.56	0.00	0.00	0.00	0.00	N/A	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
Deleware Sands	5235.00	0.00	221.56	5235.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
Bone Springs	7900.00	0.00	221.56	7900.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
Upper Bone Spring Shale	8215.00	0.00	221.56	8215.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
1st BSS	8965.00	0.00	221.56	8965.00	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
KOP - Build @ 12°/100' DLS	9422.50	0.00	221.56	9422.50	0.00	0.00	0.00	0.00	564053.70	727163.40	N 32 32 57.10	W 103 43 48.91
2nd BSS	9520.69	11.78	221.56	9520.00	10.06	-7.53	-6.67	12.00	564046.17	727156.73	N 32 32 57.02	W 103 43 48.99
Landing Point	10172.56	90.00	221.56	9900.00	477.50	-357.32	-316.74	12.00	563696.40	726846.67	N 32 32 53.58	W 103 43 52.64
Cimarex Snoddy Federal 22H - PBHL	15246.35	90.00	221.56	9900.00	5551.29	-4154.02	-3662.53	0.00	559899.90	723481.06	N 32 32 16.20	W 103 44 32.20

Survey Type: Def Plan

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

Description	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	0.000	9400.000	1/100.000	30.000	30.000	SLB_NSG+MSHOT	Original Borehole / Cimarex Snoddy Federal #22H Rev1 mcs

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 ° ° °)
	9400.000		15246.354		1/100.000	30.000	30.000	SLB_MWD-STD				
											Original Borehole / Cimarex Snoddy Federal #22H Rev1 mcs	