

Conoco Phillips Company

Arapahoe County, Colorado

Sec. 14-T4S-R65W

Prosper Farms 4-65 13-14 1H

Plan A (Pilot)

Plan: Rev A0 (Pilot)

Sperry Drilling Services

Proposal Report

13 December, 2013

Well Coordinates: 1,682,895.51 N, 3,242,064.33 E (39° 42' 18.73" N, 104° 38' 22.76" W)

Ground Level: 5,691.00 usft

Local Coordinate Origin:

Viewing Datum:

TVDs to System:

North Reference:

Unit System:

Geodetic Scale Factor Applied

Version: 5000.1 Build: 70

Centered on Well Prosper Farms 4-65 13-14 1H

KB 24 ft @ 5715.00usft (H&P 280)

N

True

API - US Survey Feet - Custom

HALLIBURTON

Project: Arapahoe County, Colorado
Site: Sec. 14-T4S-R65W
Well: Prosper Farms 4-65 13-14 1H
Wellbore: Plan A (Pilot)
Plan: Rev A0 (Pilot)

Conoco Phillips Company



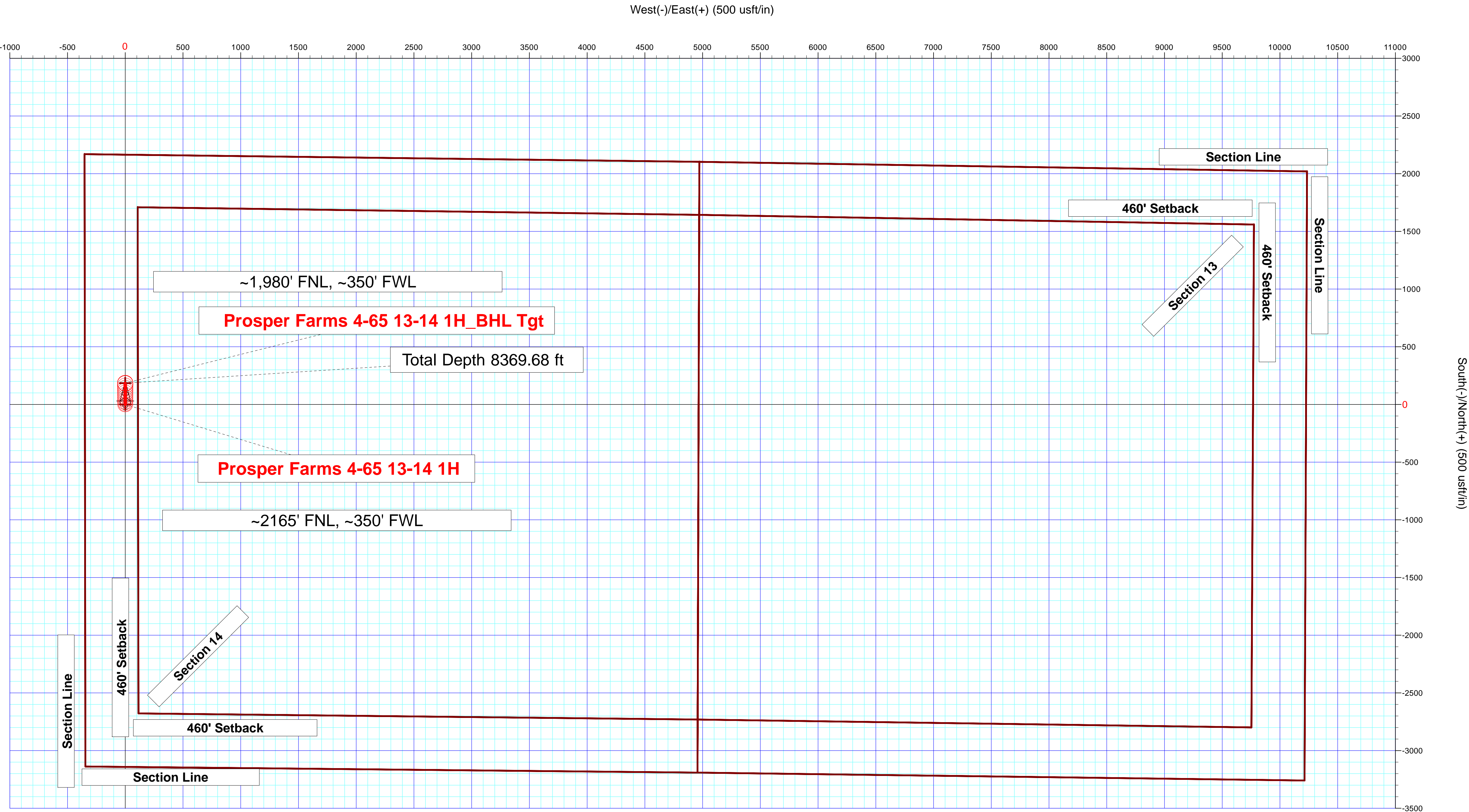
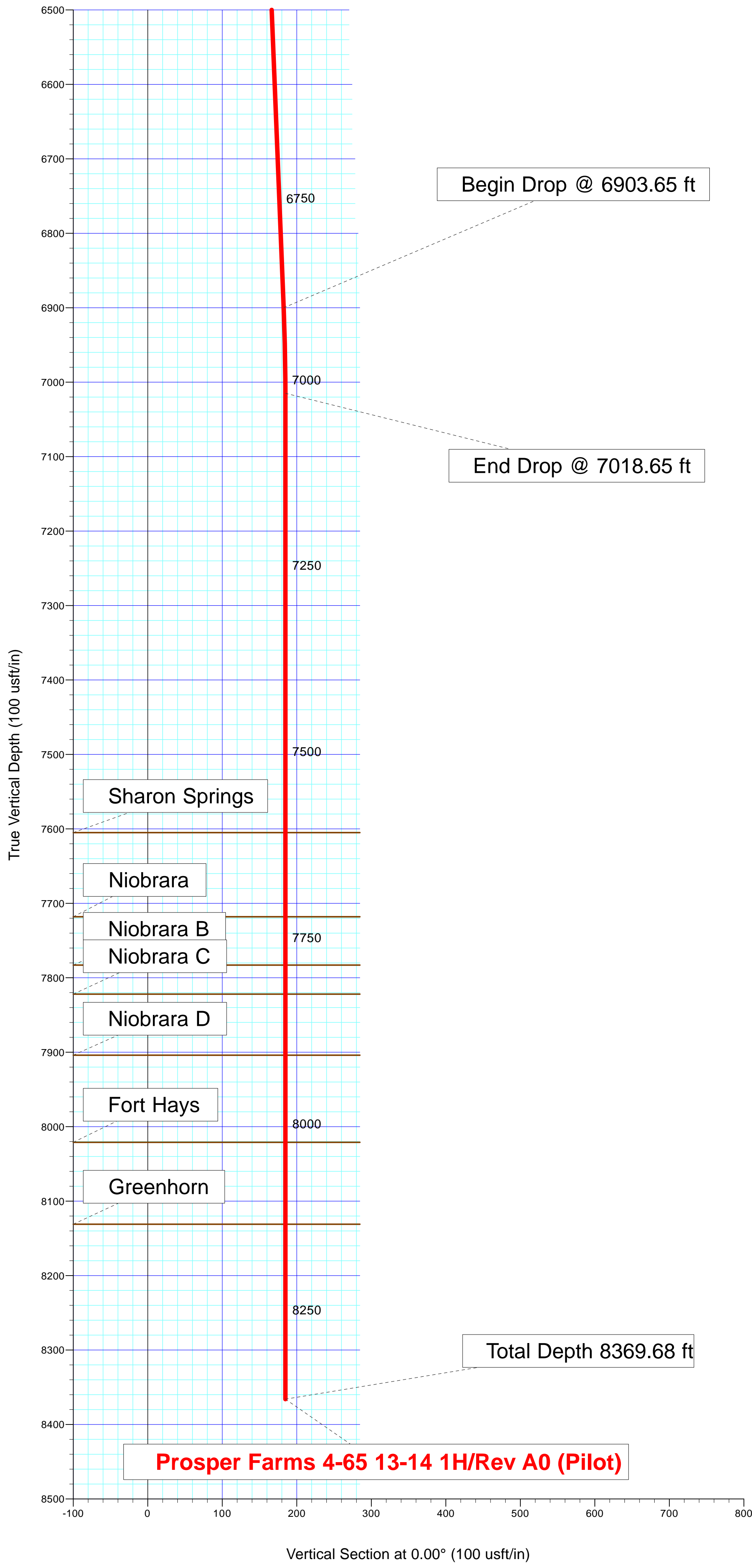
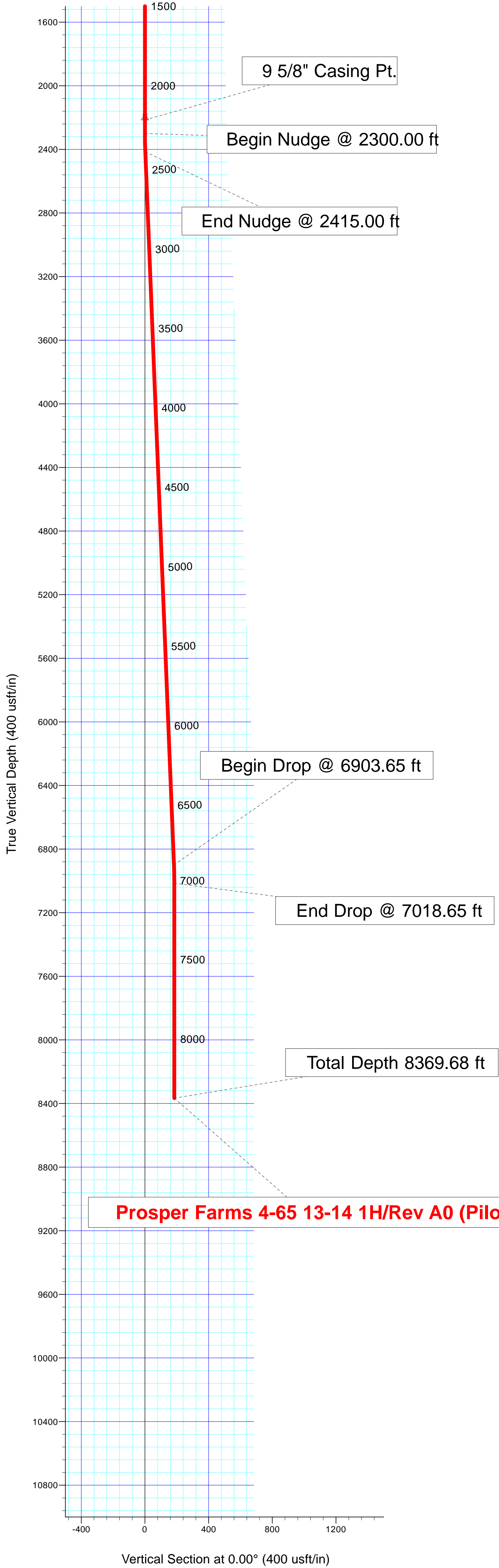
Plan: Rev A0 (Pilot) (Prosper Farms 4-65 13-14 1H/Plan A (Pilot))

Created By: Kansa B. Becker Date: 17:41, December 13 2013

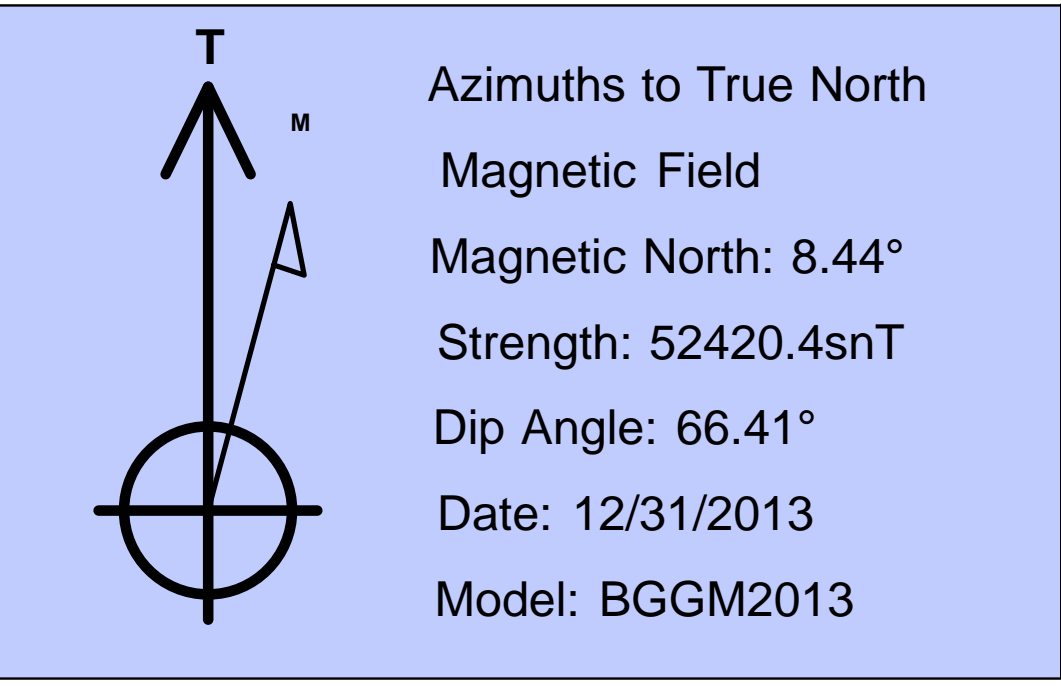
Checked: _____ Date: _____

Reviewed: _____ Date: _____

Approved: _____ Date: _____



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2300.00	0.00	0.00	2300.00	0.00	0.00	0.00	0.00	0.00	
3	2415.00	2.30	0.00	2414.97	2.31	0.00	2.00	0.00	2.31	
4	6903.65	2.30	0.00	6900.00	182.45	0.00	0.00	0.00	182.45	
5	7018.65	0.00	0.00	7014.97	184.75	0.00	2.00	180.00	184.75	
6	8369.68	0.00	0.00	8366.00	184.75	0.00	0.00	0.00	184.75	



Plan Report for Prosper Farms 4-65 13-14 1H - Rev A0 (Pilot)

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	Toolface Azimuth (°)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,785.00	0.00	0.00	1,785.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills										
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,015.00	0.00	0.00	2,015.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pierre Shale										
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,215.00	0.00	0.00	2,215.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Surface Casing - 9 5/8" Casing Pt.										
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 2300.00 ft										
2,400.00	2.00	0.00	2,399.98	1.75	0.00	1.75	2.00	2.00	0.00	0.00
2,415.00	2.30	0.00	2,414.97	2.31	0.00	2.31	2.00	2.00	0.00	0.00
End Nudge @ 2415.00 ft										
2,500.00	2.30	0.00	2,499.90	5.72	0.00	5.72	0.00	0.00	0.00	0.00
2,600.00	2.30	0.00	2,599.82	9.73	0.00	9.73	0.00	0.00	0.00	0.00
2,700.00	2.30	0.00	2,699.74	13.75	0.00	13.75	0.00	0.00	0.00	0.00
2,800.00	2.30	0.00	2,799.66	17.76	0.00	17.76	0.00	0.00	0.00	0.00
2,900.00	2.30	0.00	2,899.58	21.77	0.00	21.77	0.00	0.00	0.00	0.00
3,000.00	2.30	0.00	2,999.50	25.78	0.00	25.78	0.00	0.00	0.00	0.00
3,100.00	2.30	0.00	3,099.42	29.80	0.00	29.80	0.00	0.00	0.00	0.00
3,200.00	2.30	0.00	3,199.34	33.81	0.00	33.81	0.00	0.00	0.00	0.00
3,300.00	2.30	0.00	3,299.26	37.82	0.00	37.82	0.00	0.00	0.00	0.00
3,400.00	2.30	0.00	3,399.18	41.84	0.00	41.84	0.00	0.00	0.00	0.00
3,500.00	2.30	0.00	3,499.10	45.85	0.00	45.85	0.00	0.00	0.00	0.00
3,600.00	2.30	0.00	3,599.01	49.86	0.00	49.86	0.00	0.00	0.00	0.00
3,700.00	2.30	0.00	3,698.93	53.88	0.00	53.88	0.00	0.00	0.00	0.00
3,800.00	2.30	0.00	3,798.85	57.89	0.00	57.89	0.00	0.00	0.00	0.00
3,900.00	2.30	0.00	3,898.77	61.90	0.00	61.90	0.00	0.00	0.00	0.00
4,000.00	2.30	0.00	3,998.69	65.92	0.00	65.92	0.00	0.00	0.00	0.00
4,100.00	2.30	0.00	4,098.61	69.93	0.00	69.93	0.00	0.00	0.00	0.00
4,200.00	2.30	0.00	4,198.53	73.94	0.00	73.94	0.00	0.00	0.00	0.00
4,300.00	2.30	0.00	4,298.45	77.96	0.00	77.96	0.00	0.00	0.00	0.00
4,400.00	2.30	0.00	4,398.37	81.97	0.00	81.97	0.00	0.00	0.00	0.00
4,500.00	2.30	0.00	4,498.29	85.98	0.00	85.98	0.00	0.00	0.00	0.00
4,600.00	2.30	0.00	4,598.21	90.00	0.00	90.00	0.00	0.00	0.00	0.00
4,700.00	2.30	0.00	4,698.13	94.01	0.00	94.01	0.00	0.00	0.00	0.00
4,800.00	2.30	0.00	4,798.05	98.02	0.00	98.02	0.00	0.00	0.00	0.00

Plan Report for Prosper Farms 4-65 13-14 1H - Rev A0 (Pilot)

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	Toolface Azimuth (°)
4,900.00	2.30	0.00	4,897.97	102.04	0.00	102.04	0.00	0.00	0.00	0.00
5,000.00	2.30	0.00	4,997.89	106.05	0.00	106.05	0.00	0.00	0.00	0.00
5,100.00	2.30	0.00	5,097.81	110.06	0.00	110.06	0.00	0.00	0.00	0.00
5,200.00	2.30	0.00	5,197.73	114.07	0.00	114.07	0.00	0.00	0.00	0.00
5,300.00	2.30	0.00	5,297.64	118.09	0.00	118.09	0.00	0.00	0.00	0.00
5,400.00	2.30	0.00	5,397.56	122.10	0.00	122.10	0.00	0.00	0.00	0.00
5,500.00	2.30	0.00	5,497.48	126.11	0.00	126.11	0.00	0.00	0.00	0.00
5,600.00	2.30	0.00	5,597.40	130.13	0.00	130.13	0.00	0.00	0.00	0.00
5,700.00	2.30	0.00	5,697.32	134.14	0.00	134.14	0.00	0.00	0.00	0.00
5,800.00	2.30	0.00	5,797.24	138.15	0.00	138.15	0.00	0.00	0.00	0.00
5,900.00	2.30	0.00	5,897.16	142.17	0.00	142.17	0.00	0.00	0.00	0.00
6,000.00	2.30	0.00	5,997.08	146.18	0.00	146.18	0.00	0.00	0.00	0.00
6,100.00	2.30	0.00	6,097.00	150.19	0.00	150.19	0.00	0.00	0.00	0.00
6,200.00	2.30	0.00	6,196.92	154.21	0.00	154.21	0.00	0.00	0.00	0.00
6,300.00	2.30	0.00	6,296.84	158.22	0.00	158.22	0.00	0.00	0.00	0.00
6,400.00	2.30	0.00	6,396.76	162.23	0.00	162.23	0.00	0.00	0.00	0.00
6,500.00	2.30	0.00	6,496.68	166.25	0.00	166.25	0.00	0.00	0.00	0.00
6,600.00	2.30	0.00	6,596.60	170.26	0.00	170.26	0.00	0.00	0.00	0.00
6,700.00	2.30	0.00	6,696.52	174.27	0.00	174.27	0.00	0.00	0.00	0.00
6,800.00	2.30	0.00	6,796.44	178.29	0.00	178.29	0.00	0.00	0.00	0.00
6,900.00	2.30	0.00	6,896.36	182.30	0.00	182.30	0.00	0.00	0.00	0.00
6,903.65	2.30	0.00	6,900.00	182.45	0.00	182.45	0.00	0.00	0.00	0.00
Begin Drop @ 6903.65 ft										
7,000.00	0.37	0.00	6,996.32	184.69	0.00	184.69	2.00	-2.00	0.00	180.00
7,018.65	0.00	0.00	7,014.97	184.75	0.00	184.75	2.00	-2.00	0.00	-180.00
End Drop @ 7018.65 ft										
7,100.00	0.00	0.00	7,096.32	184.75	0.00	184.75	0.00	0.00	0.00	0.00
7,200.00	0.00	0.00	7,196.32	184.75	0.00	184.75	0.00	0.00	0.00	0.00
7,300.00	0.00	0.00	7,296.32	184.75	0.00	184.75	0.00	0.00	0.00	0.00
7,400.00	0.00	0.00	7,396.32	184.75	0.00	184.75	0.00	0.00	0.00	0.00
7,500.00	0.00	0.00	7,496.32	184.75	0.00	184.75	0.00	0.00	0.00	0.00
7,600.00	0.00	0.00	7,596.32	184.75	0.00	184.75	0.00	0.00	0.00	0.00
7,608.68	0.00	0.00	7,605.00	184.75	0.00	184.75	0.00	0.00	0.00	0.00
Sharon Springs										
7,700.00	0.00	0.00	7,696.32	184.75	0.00	184.75	0.00	0.00	0.00	0.00
7,721.68	0.00	0.00	7,718.00	184.75	0.00	184.75	0.00	0.00	0.00	0.00
Niobrara										
7,786.68	0.00	0.00	7,783.00	184.75	0.00	184.75	0.00	0.00	0.00	0.00
Niobrara B										
7,800.00	0.00	0.00	7,796.32	184.75	0.00	184.75	0.00	0.00	0.00	0.00
7,825.68	0.00	0.00	7,822.00	184.75	0.00	184.75	0.00	0.00	0.00	0.00
Niobrara C										
7,900.00	0.00	0.00	7,896.32	184.75	0.00	184.75	0.00	0.00	0.00	0.00
7,907.68	0.00	0.00	7,904.00	184.75	0.00	184.75	0.00	0.00	0.00	0.00
Niobrara D										
8,000.00	0.00	0.00	7,996.32	184.75	0.00	184.75	0.00	0.00	0.00	0.00
8,024.68	0.00	0.00	8,021.00	184.75	0.00	184.75	0.00	0.00	0.00	0.00
Fort Hays										
8,100.00	0.00	0.00	8,096.32	184.75	0.00	184.75	0.00	0.00	0.00	0.00
8,134.68	0.00	0.00	8,131.00	184.75	0.00	184.75	0.00	0.00	0.00	0.00
Greenhorn										
8,200.00	0.00	0.00	8,196.32	184.75	0.00	184.75	0.00	0.00	0.00	0.00
8,300.00	0.00	0.00	8,296.32	184.75	0.00	184.75	0.00	0.00	0.00	0.00
8,369.68	0.00	0.00	8,366.00	184.75	0.00	184.75	0.00	0.00	0.00	0.00
Total Depth 8369.68 ft										

Plan Report for Prosper Farms 4-65 13-14 1H - Rev A0 (Pilot)

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,300.00	2,300.00	0.00	0.00	Begin Nudge @ 2300.00 ft
2,415.00	2,414.97	2.31	0.00	End Nudge @ 2415.00 ft
6,903.65	6,900.00	182.45	0.00	Begin Drop @ 6903.65 ft
7,018.65	7,014.97	184.75	0.00	End Drop @ 7018.65 ft
8,369.68	8,366.00	184.75	0.00	Total Depth 8369.68 ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (usft)
				+N/_S (usft)	+E/-W (usft)	
Target	Prosper Farms 4-65 13-14 1H_BHL Tgt	0.00	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	2,215.00	Rev A0 (Pilot)	Assumed Vertical - 30
2,215.00	8,369.68	Rev A0 (Pilot)	Inclinometer
			MWD

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
2,215.00	2,215.00	9 5/8" Casing Pt.	9-5/8	13-1/2

Formation Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,785.00	1,785.00	Fox Hills			
2,015.00	2,015.00	Pierre Shale			
2,215.00	2,215.00	Surface Casing			
7,608.68	7,605.00	Sharon Springs			
7,721.68	7,718.00	Niobrara			
7,786.68	7,783.00	Niobrara B			
7,825.68	7,822.00	Niobrara C			
7,907.68	7,904.00	Niobrara D			
8,024.68	8,021.00	Fort Hays			
8,134.68	8,131.00	Greenhorn			

Targets associated with this wellbore

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
Prosper Farms 4-65 13-14 1H_SL	0.00	0.00	0.00	Polygon
Prosper Farms 4-65 13-14 1H_SB	0.00	0.00	0.00	Polygon
Prosper Farms 4-65 13-14 1H_BHL Tgt	8,366.00	184.75	0.00	Point

Plan Report for Prosper Farms 4-65 13-14 1H - Rev A0 (Pilot)

Directional Difficulty Index

Average Dogleg over Survey:	0.05 °/100usft	Maximum Dogleg over Survey:	2.00 °/100usft at 2,415.00 usft
Net Tortosity applicable to Plans:	0.05 °/100usft	Directional Difficulty Index:	3.923

Audit Info

North Reference Sheet for Sec. 14-T4S-R65W - Prosper Farms 4-65 13-14 1H - Plan A (Pilot)

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to True North Reference .
Vertical Depths are relative to KB 24 ft @ 5715.00usft (H&P 280). Northing and Easting are relative to Prosper Farms 4-65 13-14 1H
Coordinate System is US State Plane 1983, Colorado Central Zone using datum North American Datum 1983, ellipsoid GRS 1980
Projection method is Lambert Conformal Conic (2 parallel)
Central Meridian is -105.50°, Longitude Origin:0° 0' 0.000 E°, Latitude Origin:39° 45' 0.000 N°
False Easting: 3,000,000.00usft, False Northing: 1,000,000.00usft, Scale Reduction: 0.99999145

Grid Coordinates of Well: 1,682,895.51 usft N, 3,242,064.33 usft E
Geographical Coordinates of Well: 39° 42' 18.73" N, 104° 38' 22.76" W
Grid Convergence at Surface is: 0.54°

Based upon Minimum Curvature type calculations, at a Measured Depth of 8,369.68usft
the Bottom Hole Displacement is 184.75usft in the Direction of 0.00° (True).
Magnetic Convergence at surface is: -7.90° (31 December 2013, , BGGM2013)

