

# Conoco Phillips Company

Arapahoe County, Colorado

Sec. 13-T5S-R65W

State La Plata-1H

Plan A

Plan: Rev A1

## Sperry Drilling Services

### Proposal Report

18 March, 2014

Well Coordinates: 1,649,373.61 N, 3,248,972.26 E (39° 36' 46.79" N, 104° 36' 58.55" W)

Ground Level: 5,897.30 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 State La Plata-1H

24 ft KB @ 5921.30usft (H&P 280)

N

True

API - US Survey Feet - Custom

**HALLIBURTON**

Project: Arapahoe County, Colorado  
Site: Sec. 13-T5S-R65W  
Well: State La Plata-1H  
Wellbore: Plan A  
Plan: Rev A1

Conoco Phillips Company



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	7351.06	0.00	0.00	7351.06	0.00	0.00	0.00	0.00	0.00	
3	8246.16	89.51	270.09	7924.00	0.94	-568.06	10.00	270.09	568.06	
4	17369.45	89.51	270.09	8002.00	16.00	-9691.01	0.00	0.00	9691.02	State La Plata-1H_Rev A1_BHL Tgt

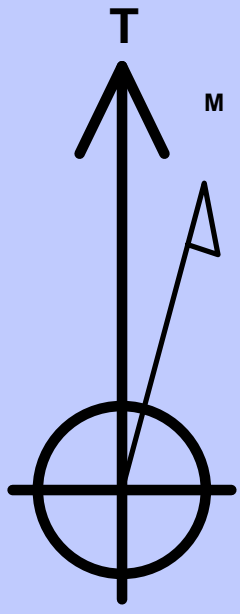
Plan: Rev A1 (State La Plata-1H/Plan A)

Created By: Kansa B. Becker      Date: 12:10, March 18 2014

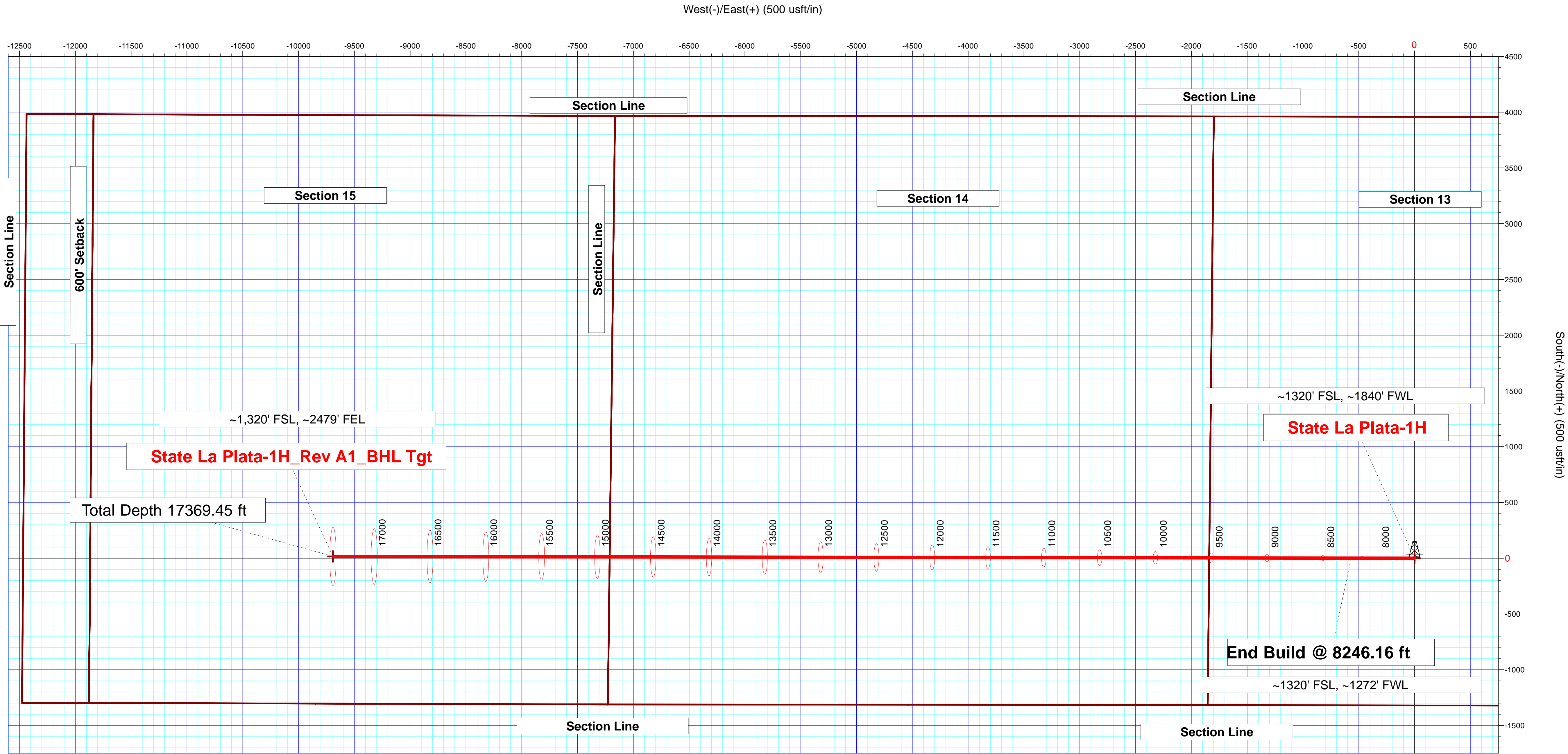
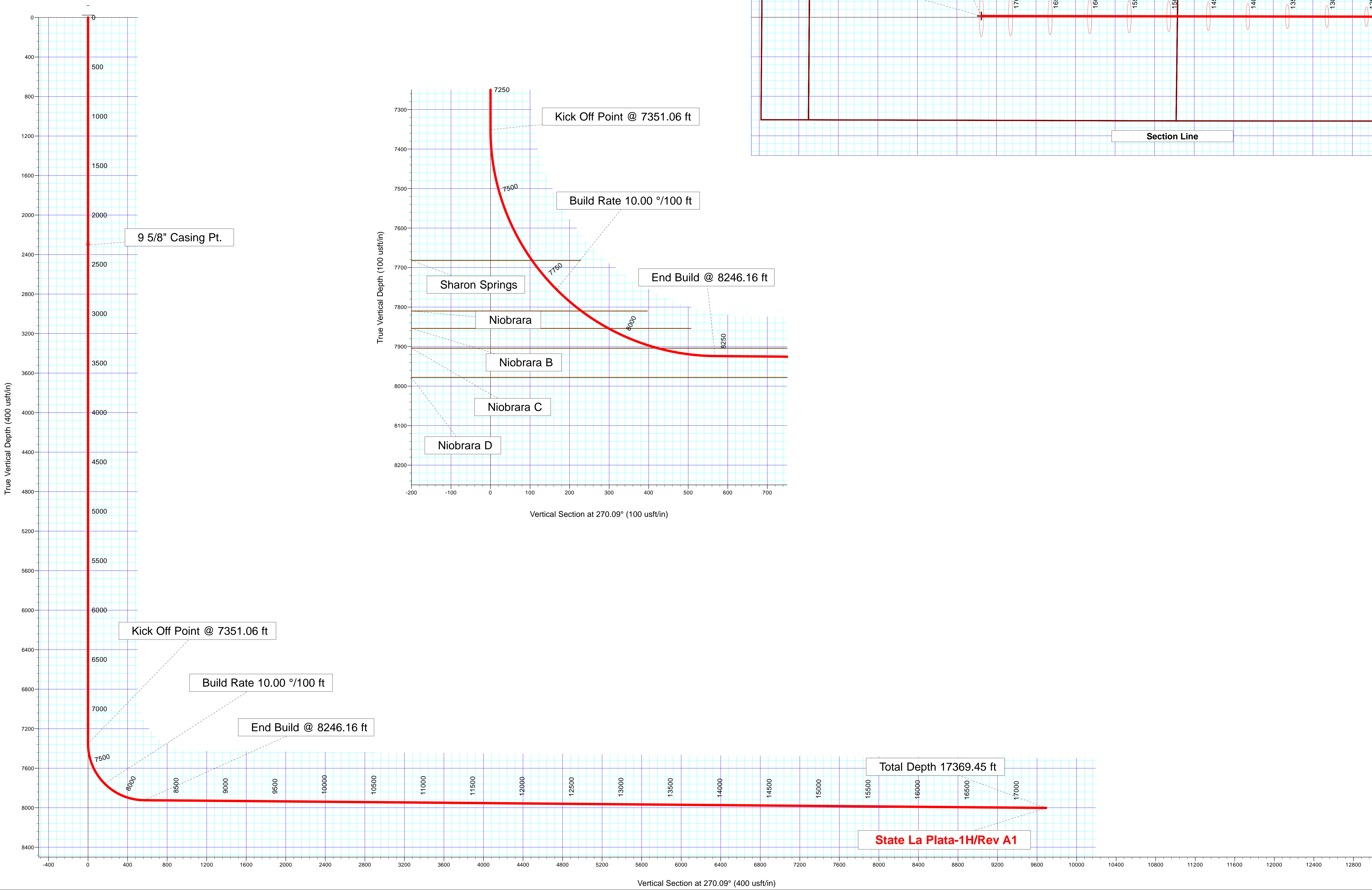
Checked: \_\_\_\_\_      Date: \_\_\_\_\_

Reviewed: \_\_\_\_\_      Date: \_\_\_\_\_

Approved: \_\_\_\_\_      Date: \_\_\_\_\_



Azimuths to True North  
Magnetic Field  
Magnetic North: 8.38°  
Strength: 52323.9snT  
Dip Angle: 66.33°  
Date: 5/19/2014  
Model: BGGM2013



## Plan Report for State La Plata-1H - Rev A1

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
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,896.00	0.00	0.00	1,896.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Fox Hills</b>										
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
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,104.00	0.00	0.00	2,104.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Pierre Shale</b>										
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,304.00	0.00	0.00	2,304.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Surface Casing - 9 5/8" Casing Pt.</b>										
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

## Plan Report for State La Plata-1H - Rev A1

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 (°)
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,900.00	0.00	0.00	6,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7,000.00	0.00	0.00	7,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7,100.00	0.00	0.00	7,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7,200.00	0.00	0.00	7,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7,300.00	0.00	0.00	7,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7,351.06	0.00	0.00	7,351.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Kick Off Point @ 7351.06 ft</b>										
7,400.00	4.89	270.09	7,399.94	0.00	-2.09	2.09	10.00	10.00	0.00	270.09
7,500.00	14.89	270.09	7,498.33	0.03	-19.25	19.25	10.00	10.00	0.00	0.00
7,600.00	24.89	270.09	7,592.24	0.09	-53.23	53.23	10.00	10.00	0.00	0.00
7,700.00	34.89	270.09	7,678.83	0.17	-103.01	103.01	10.00	10.00	0.00	0.00
7,703.88	35.28	270.09	7,682.00	0.17	-105.24	105.24	10.00	10.00	0.00	0.00
<b>Sharon Springs</b>										
7,800.00	44.89	270.09	7,755.45	0.28	-167.07	167.07	10.00	10.00	0.00	0.00
<b>Build Rate 10.00 °/100 ft</b>										
7,883.32	53.23	270.09	7,810.00	0.38	-229.95	229.95	10.00	10.00	0.00	0.00
<b>Niobrara</b>										
7,900.00	54.89	270.09	7,819.79	0.40	-243.45	243.45	10.00	10.00	0.00	0.00
7,964.84	61.38	270.09	7,854.00	0.49	-298.49	298.49	10.00	10.00	0.00	0.00
<b>Niobrara B</b>										
8,000.00	64.89	270.09	7,869.89	0.54	-329.85	329.86	10.00	10.00	0.00	0.00
8,099.16	74.81	270.09	7,904.00	0.70	-422.83	422.83	10.00	10.00	0.00	0.00
<b>Niobrara C</b>										
8,100.00	74.89	270.09	7,904.22	0.70	-423.64	423.64	10.00	10.00	0.00	0.00
8,200.00	84.89	270.09	7,921.74	0.86	-521.96	521.97	10.00	10.00	0.00	0.00
8,246.16	89.51	270.09	7,924.00	0.94	-568.06	568.06	10.00	10.00	0.00	0.00
<b>End Build @ 8246.16 ft</b>										
8,300.00	89.51	270.09	7,924.46	1.03	-621.90	621.90	0.00	0.00	0.00	0.00
8,400.00	89.51	270.09	7,925.31	1.19	-721.89	721.89	0.00	0.00	0.00	0.00
8,500.00	89.51	270.09	7,926.17	1.36	-821.89	821.89	0.00	0.00	0.00	0.00
8,600.00	89.51	270.09	7,927.02	1.52	-921.88	921.88	0.00	0.00	0.00	0.00
8,700.00	89.51	270.09	7,927.88	1.69	-1,021.88	1,021.88	0.00	0.00	0.00	0.00
8,800.00	89.51	270.09	7,928.73	1.85	-1,121.88	1,121.88	0.00	0.00	0.00	0.00
8,900.00	89.51	270.09	7,929.59	2.02	-1,221.87	1,221.87	0.00	0.00	0.00	0.00
9,000.00	89.51	270.09	7,930.44	2.18	-1,321.87	1,321.87	0.00	0.00	0.00	0.00
9,100.00	89.51	270.09	7,931.30	2.35	-1,421.86	1,421.87	0.00	0.00	0.00	0.00
9,200.00	89.51	270.09	7,932.15	2.51	-1,521.86	1,521.86	0.00	0.00	0.00	0.00
9,300.00	89.51	270.09	7,933.01	2.68	-1,621.86	1,621.86	0.00	0.00	0.00	0.00
9,400.00	89.51	270.09	7,933.86	2.84	-1,721.85	1,721.86	0.00	0.00	0.00	0.00
9,500.00	89.51	270.09	7,934.72	3.01	-1,821.85	1,821.85	0.00	0.00	0.00	0.00
9,600.00	89.51	270.09	7,935.57	3.17	-1,921.85	1,921.85	0.00	0.00	0.00	0.00
9,700.00	89.51	270.09	7,936.43	3.34	-2,021.84	2,021.84	0.00	0.00	0.00	0.00

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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 (°)
9,800.00	89.51	270.09	7,937.28	3.50	-2,121.84	2,121.84	0.00	0.00	0.00	0.00
9,900.00	89.51	270.09	7,938.14	3.67	-2,221.83	2,221.84	0.00	0.00	0.00	0.00
10,000.00	89.51	270.09	7,938.99	3.83	-2,321.83	2,321.83	0.00	0.00	0.00	0.00
10,100.00	89.51	270.09	7,939.85	4.00	-2,421.83	2,421.83	0.00	0.00	0.00	0.00
10,200.00	89.51	270.09	7,940.70	4.16	-2,521.82	2,521.83	0.00	0.00	0.00	0.00
10,300.00	89.51	270.09	7,941.56	4.33	-2,621.82	2,621.82	0.00	0.00	0.00	0.00
10,400.00	89.51	270.09	7,942.41	4.50	-2,721.82	2,721.82	0.00	0.00	0.00	0.00
10,500.00	89.51	270.09	7,943.27	4.66	-2,821.81	2,821.82	0.00	0.00	0.00	0.00
10,600.00	89.51	270.09	7,944.12	4.83	-2,921.81	2,921.81	0.00	0.00	0.00	0.00
10,700.00	89.51	270.09	7,944.98	4.99	-3,021.80	3,021.81	0.00	0.00	0.00	0.00
10,800.00	89.51	270.09	7,945.83	5.16	-3,121.80	3,121.80	0.00	0.00	0.00	0.00
10,900.00	89.51	270.09	7,946.69	5.32	-3,221.80	3,221.80	0.00	0.00	0.00	0.00
11,000.00	89.51	270.09	7,947.54	5.49	-3,321.79	3,321.80	0.00	0.00	0.00	0.00
11,100.00	89.51	270.09	7,948.40	5.65	-3,421.79	3,421.79	0.00	0.00	0.00	0.00
11,200.00	89.51	270.09	7,949.25	5.82	-3,521.79	3,521.79	0.00	0.00	0.00	0.00
11,300.00	89.51	270.09	7,950.11	5.98	-3,621.78	3,621.79	0.00	0.00	0.00	0.00
11,400.00	89.51	270.09	7,950.96	6.15	-3,721.78	3,721.78	0.00	0.00	0.00	0.00
11,500.00	89.51	270.09	7,951.82	6.31	-3,821.77	3,821.78	0.00	0.00	0.00	0.00
11,600.00	89.51	270.09	7,952.67	6.48	-3,921.77	3,921.78	0.00	0.00	0.00	0.00
11,700.00	89.51	270.09	7,953.53	6.64	-4,021.77	4,021.77	0.00	0.00	0.00	0.00
11,800.00	89.51	270.09	7,954.38	6.81	-4,121.76	4,121.77	0.00	0.00	0.00	0.00
11,900.00	89.51	270.09	7,955.24	6.97	-4,221.76	4,221.76	0.00	0.00	0.00	0.00
12,000.00	89.51	270.09	7,956.09	7.14	-4,321.75	4,321.76	0.00	0.00	0.00	0.00
12,100.00	89.51	270.09	7,956.95	7.30	-4,421.75	4,421.76	0.00	0.00	0.00	0.00
12,200.00	89.51	270.09	7,957.80	7.47	-4,521.75	4,521.75	0.00	0.00	0.00	0.00
12,300.00	89.51	270.09	7,958.66	7.63	-4,621.74	4,621.75	0.00	0.00	0.00	0.00
12,400.00	89.51	270.09	7,959.51	7.80	-4,721.74	4,721.75	0.00	0.00	0.00	0.00
12,500.00	89.51	270.09	7,960.37	7.96	-4,821.74	4,821.74	0.00	0.00	0.00	0.00
12,600.00	89.51	270.09	7,961.22	8.13	-4,921.73	4,921.74	0.00	0.00	0.00	0.00
12,700.00	89.51	270.09	7,962.08	8.29	-5,021.73	5,021.74	0.00	0.00	0.00	0.00
12,800.00	89.51	270.09	7,962.93	8.46	-5,121.72	5,121.73	0.00	0.00	0.00	0.00
12,900.00	89.51	270.09	7,963.79	8.62	-5,221.72	5,221.73	0.00	0.00	0.00	0.00
13,000.00	89.51	270.09	7,964.64	8.79	-5,321.72	5,321.72	0.00	0.00	0.00	0.00
13,100.00	89.51	270.09	7,965.50	8.95	-5,421.71	5,421.72	0.00	0.00	0.00	0.00
13,200.00	89.51	270.09	7,966.35	9.12	-5,521.71	5,521.72	0.00	0.00	0.00	0.00
13,300.00	89.51	270.09	7,967.21	9.28	-5,621.71	5,621.71	0.00	0.00	0.00	0.00
13,400.00	89.51	270.09	7,968.06	9.45	-5,721.70	5,721.71	0.00	0.00	0.00	0.00
13,500.00	89.51	270.09	7,968.92	9.61	-5,821.70	5,821.71	0.00	0.00	0.00	0.00
13,600.00	89.51	270.09	7,969.77	9.78	-5,921.69	5,921.70	0.00	0.00	0.00	0.00
13,700.00	89.51	270.09	7,970.63	9.94	-6,021.69	6,021.70	0.00	0.00	0.00	0.00
13,800.00	89.51	270.09	7,971.48	10.11	-6,121.69	6,121.69	0.00	0.00	0.00	0.00
13,900.00	89.51	270.09	7,972.34	10.28	-6,221.68	6,221.69	0.00	0.00	0.00	0.00
14,000.00	89.51	270.09	7,973.19	10.44	-6,321.68	6,321.69	0.00	0.00	0.00	0.00
14,100.00	89.51	270.09	7,974.05	10.61	-6,421.68	6,421.68	0.00	0.00	0.00	0.00
14,200.00	89.51	270.09	7,974.90	10.77	-6,521.67	6,521.68	0.00	0.00	0.00	0.00
14,300.00	89.51	270.09	7,975.76	10.94	-6,621.67	6,621.68	0.00	0.00	0.00	0.00
14,400.00	89.51	270.09	7,976.61	11.10	-6,721.66	6,721.67	0.00	0.00	0.00	0.00
14,500.00	89.51	270.09	7,977.47	11.27	-6,821.66	6,821.67	0.00	0.00	0.00	0.00
14,562.40	89.51	270.09	7,978.00	11.37	-6,884.06	6,884.07	0.00	0.00	0.00	0.00
<b>Niobrara D</b>										
14,600.00	89.51	270.09	7,978.32	11.43	-6,921.66	6,921.67	0.00	0.00	0.00	0.00
14,700.00	89.51	270.09	7,979.18	11.60	-7,021.65	7,021.66	0.00	0.00	0.00	0.00
14,800.00	89.51	270.09	7,980.03	11.76	-7,121.65	7,121.66	0.00	0.00	0.00	0.00
14,900.00	89.51	270.09	7,980.89	11.93	-7,221.64	7,221.65	0.00	0.00	0.00	0.00
15,000.00	89.51	270.09	7,981.74	12.09	-7,321.64	7,321.65	0.00	0.00	0.00	0.00
15,100.00	89.51	270.09	7,982.60	12.26	-7,421.64	7,421.65	0.00	0.00	0.00	0.00
15,200.00	89.51	270.09	7,983.45	12.42	-7,521.63	7,521.64	0.00	0.00	0.00	0.00
15,300.00	89.51	270.09	7,984.31	12.59	-7,621.63	7,621.64	0.00	0.00	0.00	0.00
15,400.00	89.51	270.09	7,985.16	12.75	-7,721.63	7,721.64	0.00	0.00	0.00	0.00

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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 (°)
15,500.00	89.51	270.09	7,986.02	12.92	-7,821.62	7,821.63	0.00	0.00	0.00	0.00
15,600.00	89.51	270.09	7,986.87	13.08	-7,921.62	7,921.63	0.00	0.00	0.00	0.00
15,700.00	89.51	270.09	7,987.73	13.25	-8,021.61	8,021.63	0.00	0.00	0.00	0.00
15,800.00	89.51	270.09	7,988.58	13.41	-8,121.61	8,121.62	0.00	0.00	0.00	0.00
15,900.00	89.51	270.09	7,989.44	13.58	-8,221.61	8,221.62	0.00	0.00	0.00	0.00
16,000.00	89.51	270.09	7,990.29	13.74	-8,321.60	8,321.61	0.00	0.00	0.00	0.00
16,100.00	89.51	270.09	7,991.15	13.91	-8,421.60	8,421.61	0.00	0.00	0.00	0.00
16,200.00	89.51	270.09	7,992.00	14.07	-8,521.60	8,521.61	0.00	0.00	0.00	0.00
16,300.00	89.51	270.09	7,992.86	14.24	-8,621.59	8,621.60	0.00	0.00	0.00	0.00
16,400.00	89.51	270.09	7,993.71	14.40	-8,721.59	8,721.60	0.00	0.00	0.00	0.00
16,500.00	89.51	270.09	7,994.57	14.57	-8,821.58	8,821.60	0.00	0.00	0.00	0.00
16,600.00	89.51	270.09	7,995.42	14.73	-8,921.58	8,921.59	0.00	0.00	0.00	0.00
16,700.00	89.51	270.09	7,996.28	14.90	-9,021.58	9,021.59	0.00	0.00	0.00	0.00
16,800.00	89.51	270.09	7,997.13	15.06	-9,121.57	9,121.59	0.00	0.00	0.00	0.00
16,900.00	89.51	270.09	7,997.99	15.23	-9,221.57	9,221.58	0.00	0.00	0.00	0.00
17,000.00	89.51	270.09	7,998.84	15.39	-9,321.57	9,321.58	0.00	0.00	0.00	0.00
17,100.00	89.51	270.09	7,999.70	15.56	-9,421.56	9,421.57	0.00	0.00	0.00	0.00
17,200.00	89.51	270.09	8,000.55	15.72	-9,521.56	9,521.57	0.00	0.00	0.00	0.00
17,300.00	89.51	270.09	8,001.41	15.89	-9,621.55	9,621.57	0.00	0.00	0.00	0.00
17,369.45	89.51	270.09	8,002.00	16.00	-9,691.01	9,691.02	0.00	0.00	0.00	0.00
Total Depth 17369.45 ft										

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
7,351.06	7,351.06	0.00	0.00	Kick Off Point @ 7351.06 ft
7,800.00	7,755.45	0.28	-167.07	Build Rate 10.00 °/100 ft
8,246.16	7,924.00	0.94	-568.06	End Build @ 8246.16 ft
17,369.45	8,002.00	16.00	-9,691.01	Total Depth 17369.45 ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (usft)
				+N/_S (usft)	+E/-W (usft)	
Target	State La Plata-1H_Rev A1_BHL Tgt	270.09	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	2,304.00	Rev A1	NS-GYRO-MS
2,304.00	8,246.16	Rev A1	MWD
8,246.16	17,369.45	Rev A1	MWD

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
2,304.00	2,304.00	9 5/8" Casing Pt.	9-5/8	13-1/2

## Plan Report for State La Plata-1H - Rev A1

### Formation Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,896.00	1,896.00	Fox Hills			
2,104.00	2,104.00	Pierre Shale			
2,304.00	2,304.00	Surface Casing			
7,703.88	7,682.00	Sharon Springs			
7,883.32	7,810.00	Niobrara			
7,964.84	7,854.00	Niobrara B			
8,099.16	7,904.00	Niobrara C			
14,562.40	7,978.00	Niobrara D			

### Targets associated with this wellbore

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
State La Plata-1H_SB	0.00	0.00	0.00	Polygon
STATE OF COLORADO X #1 (500 ft Radius SE	0.00	655.62	2,775.13	Circle
Sec.13&14_State La Plata-1H_SL	0.00	0.00	0.00	Polygon
Sec.15_State La Plata-1H_SL	0.00	0.00	0.00	Polygon
State La Plata-1H_Rev A1_BHL Tgt	8,002.00	16.00	-9,691.01	Point

### Directional Difficulty Index

Average Dogleg over Survey:	0.52 °/100usft	Maximum Dogleg over Survey:	10.00 °/100usft at 8,246.16 usft
Net Tortousity applicable to Plans:	0.52 °/100usft	Directional Difficulty Index:	6.424

### Audit Info



**North Reference Sheet for Sec. 13-T5S-R65W - State La Plata-1H - Plan A**

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to True North Reference .  
 Vertical Depths are relative to 24 ft KB @ 5921.30usft (H&P 280). Northing and Easting are relative to State La Plata-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: 0.99997577

Grid Coordinates of Well: 1,649,373.61 usft N, 3,248,972.26 usft E  
 Geographical Coordinates of Well: 39° 36' 46.79" N, 104° 36' 58.55" W  
 Grid Convergence at Surface is: 0.56°

Based upon Minimum Curvature type calculations, at a Measured Depth of 17,369.45usft  
 the Bottom Hole Displacement is 9,691.02usft in the Direction of 270.09° ( True).  
 Magnetic Convergence at surface is: -7.82° (19 May 2014, , BGGM2013)

