

Project: Weld County, CO
Site: Sec. 13-T11N-R62W
Well: Gallegos PC GJ13-99HZ
Wellbore: Plan #1
Design: Plan #1 Proposal

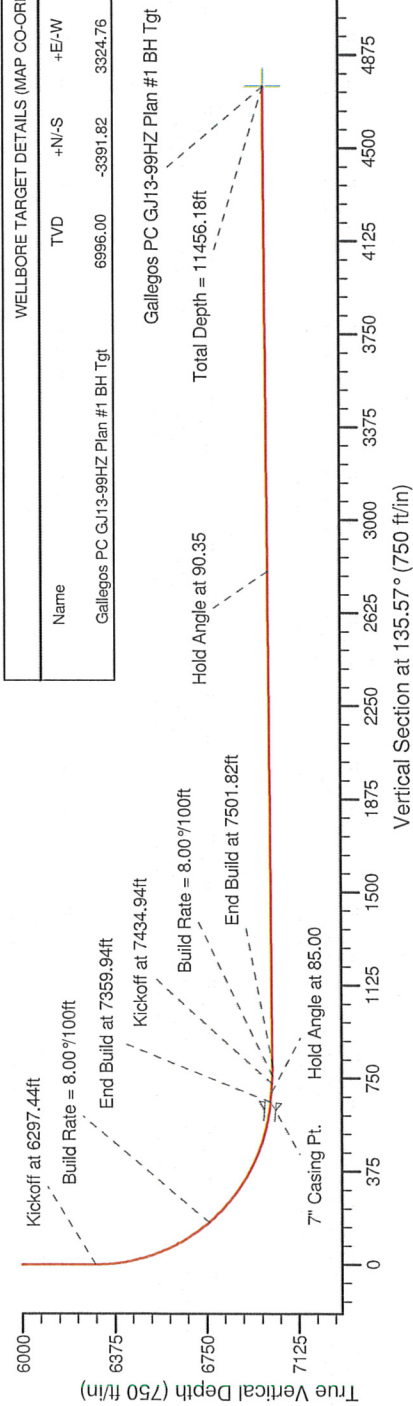
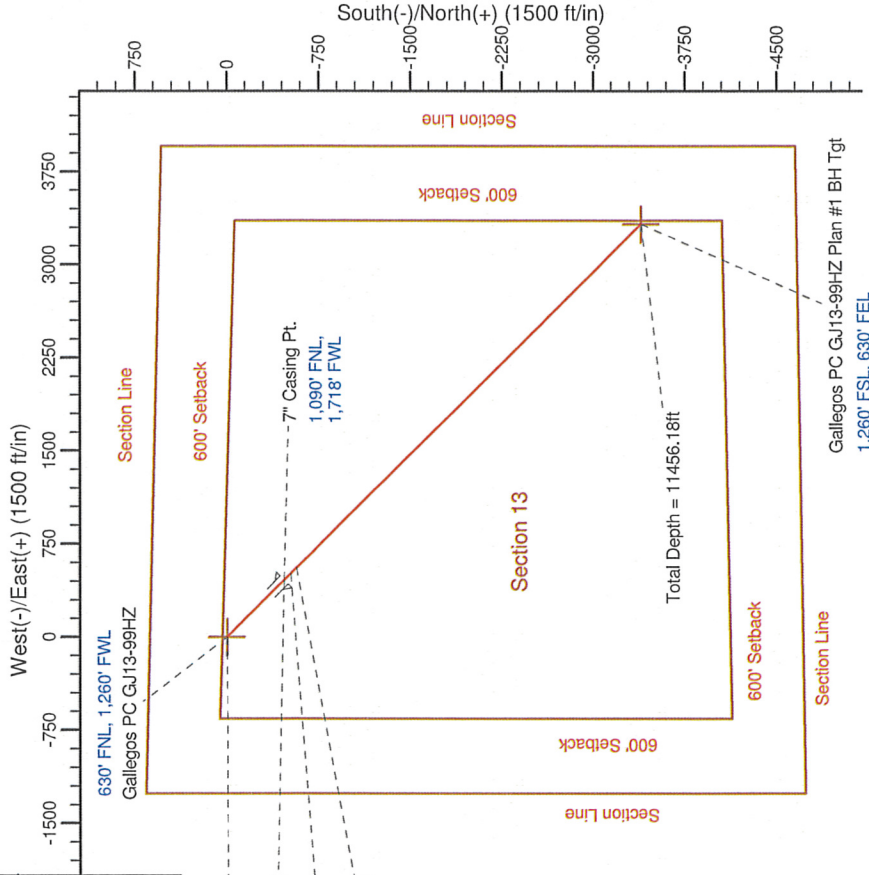
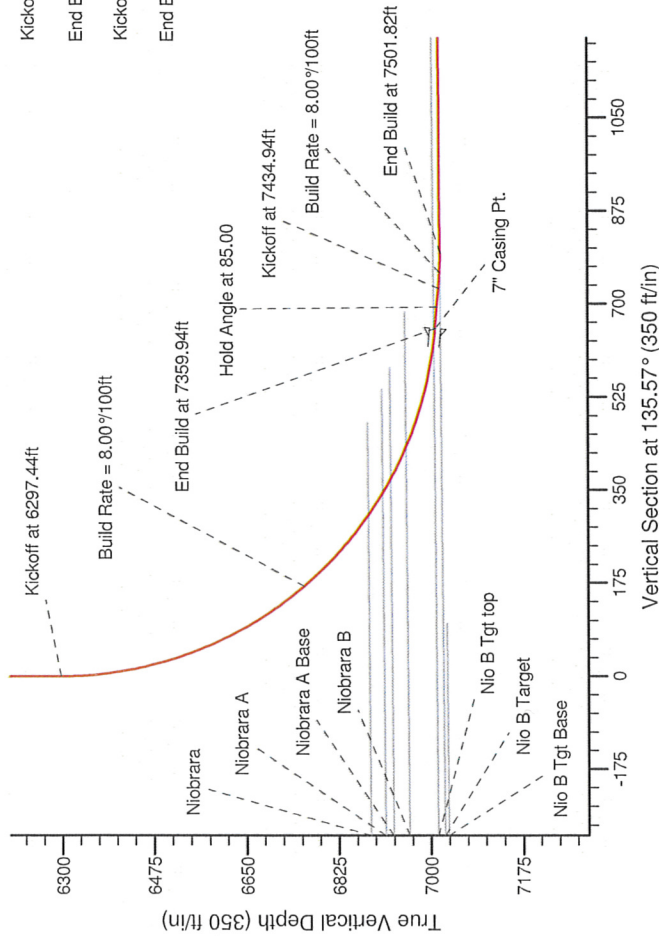
Noble Energy

HALLIBURTON
Sperry Drilling

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	6297.44	0.00	0.00	6297.44	0.00	0.00	0.00	0.00	0.00	0.00
3	7359.94	85.00	135.57	7010.91	-466.87	457.67	8.00	135.57	653.78	653.78
4	7434.94	85.00	135.57	7017.45	-520.22	509.97	0.00	0.00	728.49	728.49
5	7497.44	90.00	135.57	7020.17	-564.80	553.67	8.00	0.00	790.91	790.91
6	7501.82	90.35	135.57	7020.16	-567.92	556.73	8.00	0.39	795.29	795.29
7	11456.18	90.35	135.57	6996.00	-3391.82	3324.76	0.00	0.00	4749.58	4749.58

Gallegos PC GJ13-99HZ Plan #1 BH Tgt



WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Gallegos PC GJ13-99HZ Plan #1 BH Tgt	6996.00	-3391.82	3324.76	1579852.91	3342351.93	40.918500	-104.261260	Point

WELL DETAILS: Gallegos PC GJ13-99HZ

Northing	Easting	Ground Level:	Latitude	Longitude
1583198.50	3338980.48	5168.00	40.927610	-104.273290
Plan: Plan #1 Proposal (Gallegos PC GJ13-99HZ Plan #1)				

Created By: Paul A. Bitzan	Date: 11-23, March 26 2010
Checked: _____	Date: _____
Reviewed: _____	Date: _____
Approved: _____	Date: _____

Noble Energy

Weld County, CO

Sec. 13-T11N-R62W

Gallegos PC GJ13-99HZ

Plan #1

Plan: Plan #1 Proposal

Sperry Drilling Services Proposal Report

26 March, 2010

Well Coordinates: 1,583,198.50 N, 3,338,980.48 E (40° 55' 40.12" N, 104° 16' 23.84" W)

Ground Level: 5,168.00 ft

Local Coordinate Origin:

Viewing Datum:

TVDs to System:

North Reference:

Unit System:

Geodetic Scale Factor Applied

Version: 2003.16 Build: 431

Centered on Well Gallegos PC GJ13-99HZ

RKB 16' @ 5184.00ft (Original Well Elev)

N

True

API - US Survey Feet - Custom

HALLIBURTON

Plan Report for Gallegos PC GJ13-99HZ - Plan #1 Proposal

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	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
1,900.00	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
2,200.00	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
2,400.00	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
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

Plan Report for Gallegos PC GJ13-99HZ - Plan #1 Proposal

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
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
6,297.44	0.00	0.00	6,297.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Kickoff at 6297.44ft										
6,300.00	0.20	135.57	6,300.00	0.00	0.00	0.00	8.00	8.00	0.00	135.57
6,400.00	8.20	135.57	6,399.65	-5.23	5.13	7.33	8.00	8.00	0.00	0.00
6,500.00	16.20	135.57	6,497.31	-20.32	19.92	28.45	8.00	8.00	0.00	0.00
6,600.00	24.20	135.57	6,591.08	-44.96	44.08	62.96	8.00	8.00	0.00	0.00
6,700.00	32.20	135.57	6,679.14	-78.69	77.14	110.19	8.00	8.00	0.00	0.00
6,800.00	40.20	135.57	6,759.76	-120.83	118.45	169.21	8.00	8.00	0.00	0.00
Build Rate = 8.00°/100ft										
6,900.00	48.20	135.57	6,831.39	-170.58	167.22	238.87	8.00	8.00	0.00	0.00
6,981.53	54.73	135.57	6,882.15	-216.10	211.84	302.61	8.00	8.00	0.00	0.00
Niobrara										
7,000.00	56.20	135.57	6,892.62	-226.96	222.49	317.83	8.00	8.00	0.00	0.00
7,032.14	58.78	135.57	6,909.89	-246.32	241.46	344.93	8.00	8.00	0.00	0.00
Niobrara A										
7,061.79	61.15	135.57	6,924.74	-264.65	259.43	370.60	8.00	8.00	0.00	0.00
Niobrara A Base										
7,100.00	64.20	135.57	6,942.27	-288.88	283.19	404.54	8.00	8.00	0.00	0.00
7,129.02	66.53	135.57	6,954.37	-307.72	301.66	430.92	8.00	8.00	0.00	0.00
Niobrara B										
7,200.00	72.20	135.57	6,979.37	-355.14	348.14	497.32	8.00	8.00	0.00	0.00
7,300.00	80.20	135.57	7,003.20	-424.43	416.07	594.35	8.00	8.00	0.00	0.00
7,333.85	82.91	135.57	7,008.16	-448.34	439.50	627.83	8.00	8.00	0.00	0.00
Nio B Tgt top										
7,359.94	85.00	135.57	7,010.91	-466.87	457.67	653.78	8.00	8.00	0.00	0.00
End Build at 7359.94ft - 7" Casing Pt.										
7,400.00	85.00	135.57	7,014.40	-495.36	485.60	693.68	0.00	0.00	0.00	0.00
Hold Angle at 85.00										
7,434.94	85.00	135.57	7,017.45	-520.22	509.97	728.49	0.00	0.00	0.00	0.00
Kickoff at 7434.94ft										
7,465.00	87.40	135.57	7,019.44	-541.64	530.97	758.48	8.00	8.00	0.00	0.00
Build Rate = 8.00°/100ft										
7,496.63	89.94	135.57	7,020.17	-564.22	553.10	790.10	8.00	8.00	0.00	0.00
Nio B Target										
7,497.44	90.00	135.57	7,020.17	-564.80	553.67	790.91	8.00	8.00	0.00	0.00
7,500.00	90.20	135.57	7,020.17	-566.62	555.46	793.47	8.00	8.00	0.05	0.39
7,501.82	90.35	135.57	7,020.16	-567.92	556.73	795.29	7.98	7.98	0.05	0.39
End Build at 7501.82ft										
7,600.00	90.35	135.57	7,019.56	-638.04	625.46	893.47	0.00	0.00	0.00	0.00
7,700.00	90.35	135.57	7,018.95	-709.45	695.46	993.47	0.00	0.00	0.00	0.00
7,800.00	90.35	135.57	7,018.34	-780.86	765.46	1,093.47	0.00	0.00	0.00	0.00
7,900.00	90.35	135.57	7,017.73	-852.27	835.46	1,193.46	0.00	0.00	0.00	0.00
8,000.00	90.35	135.57	7,017.12	-923.68	905.46	1,293.46	0.00	0.00	0.00	0.00
8,100.00	90.35	135.57	7,016.51	-995.10	975.46	1,393.46	0.00	0.00	0.00	0.00
8,200.00	90.35	135.57	7,015.89	-1,066.51	1,045.46	1,493.46	0.00	0.00	0.00	0.00
8,300.00	90.35	135.57	7,015.28	-1,137.92	1,115.46	1,593.46	0.00	0.00	0.00	0.00
8,400.00	90.35	135.57	7,014.67	-1,209.33	1,185.45	1,693.46	0.00	0.00	0.00	0.00
8,500.00	90.35	135.57	7,014.06	-1,280.75	1,255.45	1,793.45	0.00	0.00	0.00	0.00
8,600.00	90.35	135.57	7,013.45	-1,352.16	1,325.45	1,893.45	0.00	0.00	0.00	0.00
8,700.00	90.35	135.57	7,012.84	-1,423.57	1,395.45	1,993.45	0.00	0.00	0.00	0.00
8,800.00	90.35	135.57	7,012.23	-1,494.98	1,465.45	2,093.45	0.00	0.00	0.00	0.00
8,900.00	90.35	135.57	7,011.62	-1,566.39	1,535.45	2,193.45	0.00	0.00	0.00	0.00
9,000.00	90.35	135.57	7,011.01	-1,637.81	1,605.45	2,293.44	0.00	0.00	0.00	0.00
9,100.00	90.35	135.57	7,010.40	-1,709.22	1,675.45	2,393.44	0.00	0.00	0.00	0.00

Plan Report for Gallegos PC GJ13-99HZ - Plan #1 Proposal

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
9,200.00	90.35	135.57	7,009.78	-1,780.63	1,745.45	2,493.44	0.00	0.00	0.00	0.00
9,300.00	90.35	135.57	7,009.17	-1,852.04	1,815.45	2,593.44	0.00	0.00	0.00	0.00
9,400.00	90.35	135.57	7,008.56	-1,923.46	1,885.45	2,693.44	0.00	0.00	0.00	0.00
9,500.00	90.35	135.57	7,007.95	-1,994.87	1,955.45	2,793.43	0.00	0.00	0.00	0.00
Hold Angle at 90.35										
9,600.00	90.35	135.57	7,007.34	-2,066.28	2,025.45	2,893.43	0.00	0.00	0.00	0.00
9,700.00	90.35	135.57	7,006.73	-2,137.69	2,095.45	2,993.43	0.00	0.00	0.00	0.00
9,800.00	90.35	135.57	7,006.12	-2,209.10	2,165.45	3,093.43	0.00	0.00	0.00	0.00
9,900.00	90.35	135.57	7,005.51	-2,280.52	2,235.45	3,193.43	0.00	0.00	0.00	0.00
10,000.00	90.35	135.57	7,004.90	-2,351.93	2,305.45	3,293.43	0.00	0.00	0.00	0.00
10,100.00	90.35	135.57	7,004.29	-2,423.34	2,375.45	3,393.42	0.00	0.00	0.00	0.00
10,200.00	90.35	135.57	7,003.68	-2,494.75	2,445.45	3,493.42	0.00	0.00	0.00	0.00
10,300.00	90.35	135.57	7,003.06	-2,566.17	2,515.44	3,593.42	0.00	0.00	0.00	0.00
10,400.00	90.35	135.57	7,002.45	-2,637.58	2,585.44	3,693.42	0.00	0.00	0.00	0.00
10,500.00	90.35	135.57	7,001.84	-2,708.99	2,655.44	3,793.42	0.00	0.00	0.00	0.00
10,600.00	90.35	135.57	7,001.23	-2,780.40	2,725.44	3,893.41	0.00	0.00	0.00	0.00
10,700.00	90.35	135.57	7,000.62	-2,851.81	2,795.44	3,993.41	0.00	0.00	0.00	0.00
10,800.00	90.35	135.57	7,000.01	-2,923.23	2,865.44	4,093.41	0.00	0.00	0.00	0.00
10,900.00	90.35	135.57	6,999.40	-2,994.64	2,935.44	4,193.41	0.00	0.00	0.00	0.00
11,000.00	90.35	135.57	6,998.79	-3,066.05	3,005.44	4,293.41	0.00	0.00	0.00	0.00
11,100.00	90.35	135.57	6,998.18	-3,137.46	3,075.44	4,393.40	0.00	0.00	0.00	0.00
11,200.00	90.35	135.57	6,997.57	-3,208.87	3,145.44	4,493.40	0.00	0.00	0.00	0.00
11,300.00	90.35	135.57	6,996.95	-3,280.29	3,215.44	4,593.40	0.00	0.00	0.00	0.00
11,400.00	90.35	135.57	6,996.34	-3,351.70	3,285.44	4,693.40	0.00	0.00	0.00	0.00
11,456.18	90.35	135.57	6,996.00	-3,391.82	3,324.76	4,749.58	0.00	0.00	0.00	0.00

Gallegos PC GJ13-99HZ Plan #1 BH Tgt

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
6,297.44	6,297.44	0.00	0.00	Kickoff at 6297.44ft
6,800.00	6,759.76	-120.83	118.45	Build Rate = 8.00°/100ft
7,359.94	7,010.91	-466.87	457.67	End Build at 7359.94ft
7,400.00	7,014.40	-495.36	485.60	Hold Angle at 85.00
7,434.94	7,017.45	-520.22	509.97	Kickoff at 7434.94ft
7,465.00	7,019.44	-541.64	530.97	Build Rate = 8.00°/100ft
7,501.82	7,020.16	-567.92	556.73	End Build at 7501.82ft
9,500.00	7,007.95	-1,994.87	1,955.45	Hold Angle at 90.35
11,456.18	6,996.00	-3,391.82	3,324.76	Total Depth = 11456.18ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (ft)	Origin +E/-W (ft)	Start TVD (ft)
Target	Gallegos PC GJ13-99HZ Plan #1 BH Tgt	135.57	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	11,456.18	Plan #1 Proposal	MWD

Plan Report for Gallegos PC GJ13-99HZ - Plan #1 Proposal

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,359.94	7,010.91	7" Casing Pt.	7	8-3/4

Formation Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
	7,032.00	Nio B Tgt Base		-0.35	135.57
6,981.53	6,884.00	Niobrara		-0.35	135.57
7,032.14	6,912.00	Niobrara A		-0.35	135.57
7,061.79	6,927.00	Niobrara A Base		-0.35	135.57
7,129.02	6,957.00	Niobrara B		-0.35	135.57
7,333.85	7,012.00	Nio B Tgt top		-0.35	135.57
7,496.63	7,025.00	Nio B Target		-0.35	135.57

Targets associated with this wellbore

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
Gallegos PC GJ13-99HZ N. Section Line	0.00	0.00	0.00	Polygon
Gallegos PC GJ13-99HZ S. 600' Setback	0.00	0.00	0.00	Polygon
Gallegos PC GJ13-99HZ S. Section Line	0.00	0.00	0.00	Polygon
Gallegos PC GJ13-99HZ Plan #1 BH Tgt	6,996.00	-3,391.82	3,324.76	Point
Gallegos PC GJ13-99HZ W. 600' Setback	0.00	0.00	0.00	Polygon
Gallegos PC GJ13-99HZ N. 600' Setback	0.00	0.00	0.00	Polygon
Gallegos PC GJ13-99HZ E. Section Line	0.00	0.00	0.00	Polygon
Gallegos PC GJ13-99HZ W. Section Line	0.00	0.00	0.00	Polygon
Gallegos PC GJ13-99HZ E. 600' Setback	0.00	0.00	0.00	Polygon

North Reference Sheet for Sec. 13-T11N-R62W - Gallegos PC GJ13-99HZ - Plan #1

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to True North Reference.

Vertical Depths are relative to RKB 16' @ 5184.00ft (Original Well Elev). Northing and Easting are relative to Gallegos PC GJ13-99HZ

Coordinate System is US State Plane 1983, Colorado Northern 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:0.000000°, Latitude Origin:40.783333°

False Easting: 3,000,000.00ft, False Northing: 1,000,000.00ft, Scale Reduction: 1.00002664

Grid Coordinates of Well: 1,583,198.50 ft N, 3,338,980.48 ft E

Geographical Coordinates of Well: 40° 55' 40.12" N, 104° 16' 23.84" W

Grid Convergence at Surface is: 0.79°

Based upon Minimum Curvature type calculations, at a Measured Depth of 11,456.18ft

the Bottom Hole Displacement is 4,749.58ft in the Direction of 135.57° (True).

Magnetic Convergence at surface is: -7.93° (31 May 2010, , BGGM2009)

