

# Bayswater Exploration & Production, LLC

Well Name: **Matrix Q-29HN**

Surface Location: Matrix 29- Pad Sec.29-T6N-R65W

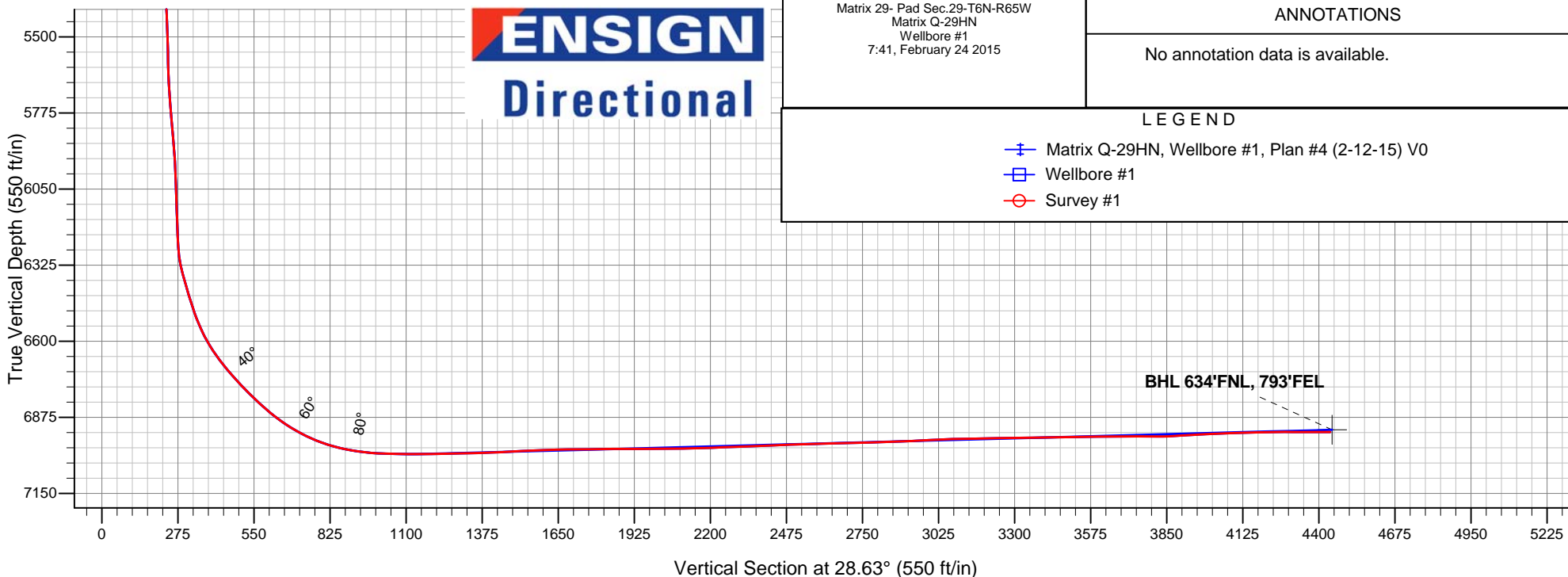
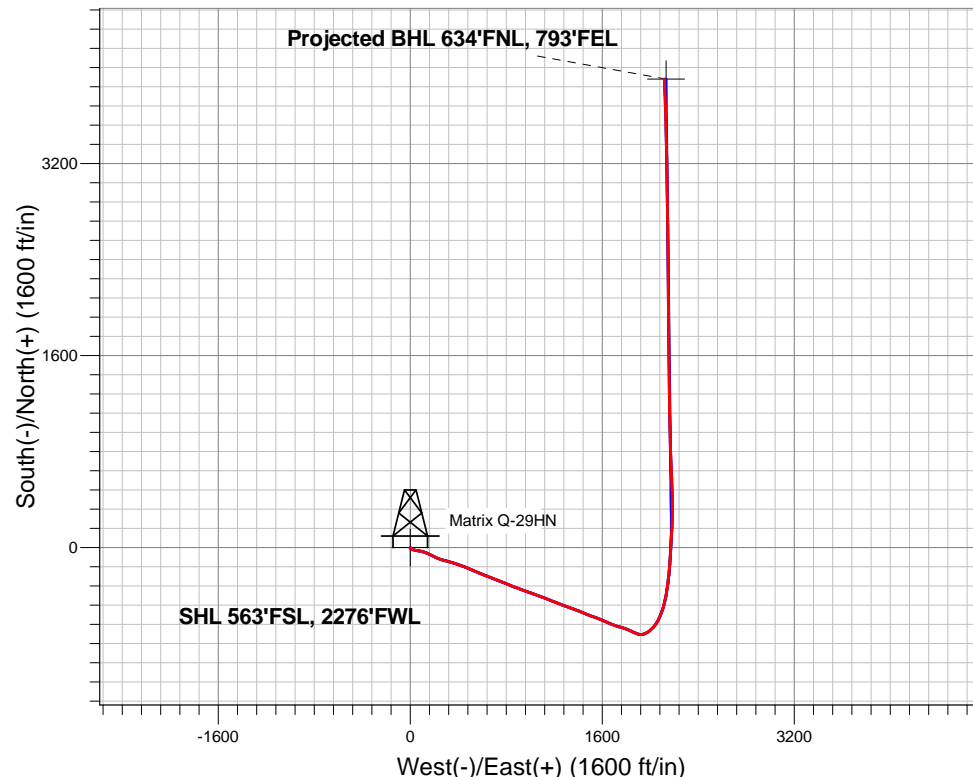
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4707.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1408895.27	3225820.23	40.452983	-104.688540	
RKB - 22.5' WELL @ 4729.5ft (RKB - 22.5')						

## FINAL SURVEY

**Projected Bottom Hole Location**  
**11762'MD 6928'TVD 3903'N & 2118'E of SHL**  
**90.1 degree Incl @ 358.0 degree AZM**





# **Bayswater Exploration & Production, LLC**

**SEC.29-T6N-R65W**

**Matrix 29- Pad Sec.29-T6N-R65W**

**Matrix Q-29HN**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**24 February, 2015**



**BAYSWATER**  
**EXPLORATION & PRODUCTION, LLC**

<b>Company:</b>	Bayswater Exploration & Production, LLC	<b>Local Co-ordinate Reference:</b>	Well Matrix Q-29HN
<b>Project:</b>	SEC.29-T6N-R65W	<b>TVD Reference:</b>	WELL @ 4729.5ft (RKB - 22.5')
<b>Site:</b>	Matrix 29- Pad Sec.29-T6N-R65W	<b>MD Reference:</b>	WELL @ 4729.5ft (RKB - 22.5')
<b>Well:</b>	Matrix Q-29HN	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

<b>Project</b>	SEC.29-T6N-R65W		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

Site		Matrix 29- Pad Sec.29-T6N-R65W				
Site Position:		Northing:	1,408,840.92 ft	Latitude:	40.452836	
From:	Lat/Long	Easting:	3,225,730.56 ft	Longitude:	-104.688864	
Position Uncertainty:		0.0 ft	Slot Radius:	"	Grid Convergence:	0.52 °

Well	Matrix Q-29HN					
Well Position	+N/-S	0.0 ft	Northing:	1,408,895.27 ft	Latitude:	40.452983
	+E/-W	0.0 ft	Easting:	3,225,820.23 ft	Longitude:	-104.688540
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,707.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	2/12/2015	8.33	66.98	52,782

<b>Design</b>	Wellbore #1				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	28.63	

<b>Survey Program</b>	<b>Date</b>	2/24/2015			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
163.0	11,762.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
1.0	0.00	157.80	1.0	0.0	0.0	0.0	0.25	0.25	0.00	
<b>SHL 563'FSL, 2276'FWL</b>										
163.0	0.40	157.80	163.0	-0.5	0.2	-0.4	0.25	0.25	0.00	
260.0	0.20	216.80	260.0	-1.0	0.2	-0.7	0.35	-0.21	60.82	
352.0	0.40	205.20	352.0	-1.4	0.0	-1.2	0.23	0.22	-12.61	
444.0	0.50	191.90	444.0	-2.1	-0.2	-1.9	0.16	0.11	-14.46	
536.0	0.60	201.30	536.0	-2.9	-0.5	-2.8	0.15	0.11	10.22	
628.0	2.30	153.90	628.0	-5.0	0.2	-4.3	2.11	1.85	-51.52	
710.0	4.50	133.10	709.8	-8.7	3.2	-6.1	3.03	2.68	-25.37	
831.0	7.10	117.50	830.2	-15.4	13.3	-7.1	2.49	2.15	-12.89	
926.0	8.70	104.70	924.3	-19.9	25.5	-5.3	2.49	1.68	-13.47	
1,021.0	10.40	100.60	1,018.0	-23.3	40.9	-0.9	1.93	1.79	-4.32	

<b>Company:</b>	Bayswater Exploration & Production, LLC	<b>Local Co-ordinate Reference:</b>	Well Matrix Q-29HN
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<b>Well:</b>	Matrix Q-29HN	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

## Survey

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)
1,117.0	10.60	103.10	1,112.4	-26.9	58.0	4.2	0.52	0.21	2.60
1,209.0	11.40	98.50	1,202.7	-30.2	75.2	9.5	1.29	0.87	-5.00
1,301.0	11.30	102.20	1,292.9	-33.4	93.0	15.2	0.80	-0.11	4.02
1,393.0	11.90	107.50	1,383.0	-38.2	110.9	19.6	1.33	0.65	5.76
1,485.0	12.50	108.40	1,472.9	-44.2	129.4	23.2	0.68	0.65	0.98
1,577.0	12.40	113.60	1,562.8	-51.3	147.9	25.8	1.22	-0.11	5.65
1,669.0	12.90	115.60	1,652.5	-59.7	166.2	27.2	0.72	0.54	2.17
1,761.0	14.40	118.60	1,741.9	-69.6	185.5	27.8	1.80	1.63	3.26
1,853.0	17.80	117.00	1,830.3	-81.5	208.1	28.2	3.73	3.70	-1.74
1,946.0	20.80	110.50	1,918.1	-93.7	236.2	30.9	3.96	3.23	-6.99
2,038.0	22.20	107.50	2,003.7	-104.7	268.1	36.6	1.93	1.52	-3.26
2,130.0	23.40	104.50	2,088.5	-114.5	302.4	44.4	1.82	1.30	-3.26
2,222.0	24.10	105.40	2,172.7	-124.0	338.2	53.2	0.86	0.76	0.98
2,314.0	23.10	106.60	2,257.0	-134.2	373.6	61.2	1.21	-1.09	1.30
2,406.0	23.00	108.70	2,341.7	-145.1	407.9	68.1	0.90	-0.11	2.28
2,498.0	23.70	113.60	2,426.1	-158.2	441.9	72.8	2.24	0.76	5.33
2,593.0	24.30	112.20	2,512.9	-173.3	477.5	76.7	0.87	0.63	-1.47
2,689.0	24.20	111.20	2,600.5	-187.9	514.1	81.4	0.44	-0.10	-1.04
2,784.0	25.30	114.00	2,686.7	-203.2	550.8	85.6	1.69	1.16	2.95
2,879.0	25.90	113.10	2,772.4	-219.5	588.4	89.2	0.75	0.63	-0.95
2,975.0	25.10	111.30	2,859.1	-235.2	626.7	93.9	1.16	-0.83	-1.88
3,070.0	23.00	108.70	2,945.8	-248.4	663.0	99.6	2.48	-2.21	-2.74
3,165.0	24.40	112.80	3,032.8	-262.0	698.7	104.8	2.28	1.47	4.32
3,260.0	22.20	110.50	3,120.0	-275.9	733.6	109.4	2.51	-2.32	-2.42
3,355.0	21.20	113.10	3,208.3	-288.9	766.2	113.5	1.46	-1.05	2.74
3,450.0	21.10	111.70	3,296.9	-302.0	797.9	117.3	0.54	-0.11	-1.47
3,546.0	20.00	111.30	3,386.8	-314.3	829.3	121.4	1.16	-1.15	-0.42
3,641.0	20.90	112.10	3,475.8	-326.6	860.1	125.4	0.99	0.95	0.84
3,736.0	21.50	108.20	3,564.4	-338.4	892.3	130.5	1.61	0.63	-4.11
3,831.0	22.70	110.60	3,652.4	-350.3	926.0	136.2	1.58	1.26	2.53
3,926.0	25.80	110.80	3,739.0	-364.1	962.5	141.6	3.26	3.26	0.21
4,022.0	26.40	110.10	3,825.2	-378.9	1,002.1	147.6	0.70	0.63	-0.73
4,117.0	26.60	110.30	3,910.2	-393.5	1,041.9	153.8	0.23	0.21	0.21
4,212.0	25.00	109.20	3,995.8	-407.5	1,080.8	160.2	1.76	-1.68	-1.16
4,307.0	21.40	112.10	4,083.1	-420.6	1,115.8	165.5	3.97	-3.79	3.05
4,402.0	23.70	111.90	4,170.8	-434.2	1,149.6	169.7	2.42	2.42	-0.21
4,498.0	22.00	110.80	4,259.3	-447.8	1,184.3	174.4	1.83	-1.77	-1.15
4,593.0	20.00	109.60	4,348.0	-459.6	1,216.3	179.4	2.15	-2.11	-1.26
4,688.0	21.00	112.60	4,436.9	-471.6	1,247.3	183.7	1.53	1.05	3.16
4,783.0	21.50	110.50	4,525.5	-484.2	1,279.3	188.0	0.96	0.53	-2.21
4,878.0	19.50	109.40	4,614.5	-495.6	1,310.6	193.0	2.14	-2.11	-1.16
4,973.0	20.50	109.80	4,703.7	-506.5	1,341.2	198.1	1.06	1.05	0.42
5,069.0	21.30	110.30	4,793.4	-518.2	1,373.3	203.2	0.85	0.83	0.52
5,164.0	21.10	112.40	4,882.0	-530.7	1,405.3	207.5	0.83	-0.21	2.21
5,259.0	22.00	112.60	4,970.4	-544.1	1,437.6	211.2	0.95	0.95	0.21
5,355.0	22.70	112.40	5,059.1	-558.1	1,471.3	215.1	0.73	0.73	-0.21
5,450.0	19.50	110.30	5,147.8	-570.6	1,503.1	219.4	3.46	-3.37	-2.21
5,545.0	19.60	110.60	5,237.3	-581.7	1,532.9	224.0	0.15	0.11	0.32
5,640.0	20.00	108.40	5,326.7	-592.4	1,563.3	229.1	0.89	0.42	-2.32
5,735.0	19.60	110.50	5,416.1	-603.1	1,593.6	234.2	0.86	-0.42	2.21
5,830.0	19.80	115.40	5,505.5	-615.6	1,623.1	237.4	1.75	0.21	5.16
5,925.0	21.10	115.60	5,594.5	-629.9	1,653.0	239.2	1.37	1.37	0.21
6,020.0	23.40	110.60	5,682.4	-643.9	1,686.1	242.7	3.13	2.42	-5.26
6,115.0	21.40	105.90	5,770.3	-655.3	1,720.4	249.2	2.82	-2.11	-4.95

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<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
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## Survey

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)
6,211.0	21.50	104.70	5,859.6	-664.6	1,754.3	257.3	0.47	0.10	-1.25
6,306.0	21.10	110.50	5,948.1	-675.0	1,787.2	263.9	2.26	-0.42	6.11
6,401.0	22.10	113.80	6,036.5	-688.2	1,819.5	267.8	1.66	1.05	3.47
6,496.0	22.30	114.50	6,124.4	-702.8	1,852.3	270.6	0.35	0.21	0.74
6,591.0	21.20	112.90	6,212.7	-717.0	1,884.5	273.6	1.32	-1.16	-1.68
6,639.0	19.30	108.20	6,257.7	-722.9	1,900.0	275.9	5.21	-3.96	-9.79
6,687.0	20.30	94.60	6,302.9	-726.0	1,915.9	280.7	9.80	2.08	-28.33
6,735.0	21.70	78.70	6,347.7	-724.9	1,932.9	289.8	12.19	2.92	-33.13
6,782.0	21.10	71.60	6,391.5	-720.6	1,949.4	301.6	5.65	-1.28	-15.11
6,830.0	20.70	63.90	6,436.4	-714.1	1,965.3	314.9	5.78	-0.83	-16.04
6,877.0	21.00	56.30	6,480.3	-705.8	1,979.7	329.1	5.79	0.64	-16.17
6,925.0	23.00	52.10	6,524.8	-695.2	1,994.3	345.3	5.30	4.17	-8.75
6,972.0	26.70	45.80	6,567.4	-682.2	2,009.1	363.8	9.67	7.87	-13.40
7,020.0	31.40	43.00	6,609.4	-665.6	2,025.4	386.3	10.19	9.79	-5.83
7,067.0	35.40	36.50	6,648.6	-645.6	2,041.8	411.6	11.41	8.51	-13.83
7,115.0	39.00	29.80	6,686.9	-621.3	2,057.6	440.5	11.28	7.50	-13.96
7,163.0	41.10	26.60	6,723.6	-594.1	2,072.2	471.4	6.13	4.38	-6.67
7,211.0	43.60	21.90	6,759.1	-564.7	2,085.4	503.6	8.40	5.21	-9.79
7,258.0	46.00	19.40	6,792.4	-533.7	2,097.1	536.4	6.33	5.11	-5.32
7,306.0	47.80	17.00	6,825.2	-500.4	2,108.0	570.9	5.23	3.75	-5.00
7,353.0	50.90	14.00	6,855.9	-466.0	2,117.5	605.6	8.18	6.60	-6.38
7,401.0	55.30	12.40	6,884.7	-428.7	2,126.3	642.6	9.55	9.17	-3.33
7,448.0	59.60	9.20	6,910.0	-389.7	2,133.7	680.3	10.80	9.15	-6.81
7,496.0	63.50	7.60	6,932.8	-348.0	2,139.8	719.8	8.64	8.13	-3.33
7,543.0	67.90	8.20	6,952.2	-305.6	2,145.7	759.9	9.43	9.36	1.28
7,591.0	71.60	7.10	6,968.8	-261.0	2,151.7	801.9	8.00	7.71	-2.29
7,638.0	76.70	5.70	6,981.6	-216.0	2,156.8	843.8	11.22	10.85	-2.98
7,686.0	80.00	4.80	6,991.3	-169.2	2,161.1	886.9	7.12	6.88	-1.88
7,734.0	82.80	3.90	6,998.5	-121.9	2,164.6	930.2	6.12	5.83	-1.88
7,782.0	85.50	3.20	7,003.4	-74.3	2,167.6	973.4	5.81	5.63	-1.46
7,824.0	88.20	2.90	7,005.7	-32.4	2,169.8	1,011.2	6.47	6.43	-0.71
7,879.2	88.83	3.26	7,007.1	22.7	2,172.8	1,061.1	1.31	1.13	0.66
<b>Casing pt . ST</b>									
7,916.3	89.24	3.51	7,007.7	59.7	2,175.0	1,094.6	1.31	1.13	0.66
<b>Casing Pt 10' low</b>									
7,930.0	89.40	3.60	7,007.9	73.4	2,175.8	1,107.0	1.31	1.13	0.66
8,024.0	91.30	2.90	7,007.3	167.2	2,181.2	1,191.9	2.15	2.02	-0.74
8,119.0	90.60	1.10	7,005.7	262.2	2,184.5	1,276.8	2.03	-0.74	-1.89
8,213.0	91.60	359.00	7,003.9	356.2	2,184.6	1,359.3	2.47	1.06	-2.23
8,307.0	92.50	358.50	7,000.6	450.1	2,182.5	1,440.8	1.10	0.96	-0.53
8,401.0	92.40	358.10	6,996.6	543.9	2,179.7	1,521.9	0.44	-0.11	-0.43
8,495.0	91.80	357.60	6,993.1	637.8	2,176.2	1,602.6	0.83	-0.64	-0.53
8,589.0	90.70	357.60	6,991.1	731.7	2,172.3	1,683.1	1.17	-1.17	0.00
8,683.0	90.30	358.50	6,990.2	825.6	2,169.1	1,764.0	1.05	-0.43	0.96
8,778.0	91.00	358.70	6,989.2	920.6	2,166.8	1,846.2	0.77	0.74	0.21
8,872.0	89.30	358.70	6,988.9	1,014.6	2,164.6	1,927.7	1.81	-1.81	0.00
8,966.0	90.20	359.20	6,989.3	1,108.6	2,162.9	2,009.4	1.10	0.96	0.53
9,061.0	91.50	359.20	6,987.9	1,203.5	2,161.6	2,092.1	1.37	1.37	0.00
9,155.0	91.80	359.00	6,985.2	1,297.5	2,160.1	2,173.9	0.38	0.32	-0.21
9,249.0	91.60	359.20	6,982.4	1,391.4	2,158.6	2,255.6	0.30	-0.21	0.21
9,342.0	91.60	358.70	6,979.8	1,484.4	2,156.9	2,336.4	0.54	0.00	-0.54
9,436.0	92.20	359.20	6,976.7	1,578.3	2,155.2	2,418.0	0.83	0.64	0.53
9,530.0	91.80	359.20	6,973.4	1,672.3	2,153.9	2,499.8	0.43	-0.43	0.00
9,624.0	91.50	359.20	6,970.7	1,766.2	2,152.6	2,581.7	0.32	-0.32	0.00

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<b>Well:</b>	Matrix Q-29HN	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

## Survey

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)
9,719.0	91.20	359.50	6,968.5	1,861.2	2,151.5	2,664.5	0.45	-0.32	0.32
9,813.0	91.00	359.90	6,966.7	1,955.2	2,151.0	2,746.8	0.48	-0.21	0.43
9,907.0	91.70	0.10	6,964.5	2,049.1	2,151.0	2,829.2	0.77	0.74	0.21
10,001.0	92.40	0.20	6,961.1	2,143.1	2,151.2	2,911.8	0.75	0.74	0.11
10,095.0	92.60	359.40	6,957.0	2,237.0	2,150.9	2,994.1	0.88	0.21	-0.85
10,189.0	91.50	359.40	6,953.6	2,330.9	2,149.9	3,076.1	1.17	-1.17	0.00
10,284.0	90.90	359.40	6,951.7	2,425.9	2,148.9	3,158.9	0.63	-0.63	0.00
10,378.0	90.70	359.90	6,950.3	2,519.9	2,148.4	3,241.2	0.57	-0.21	0.53
10,473.0	90.40	359.20	6,949.4	2,614.9	2,147.6	3,324.2	0.80	-0.32	-0.74
10,567.0	91.30	359.40	6,948.0	2,708.8	2,146.5	3,406.1	0.98	0.96	0.21
10,662.0	91.20	358.80	6,946.0	2,803.8	2,145.0	3,488.8	0.64	-0.11	-0.63
10,756.0	90.30	358.70	6,944.7	2,897.8	2,142.9	3,570.3	0.96	-0.96	-0.11
10,850.0	90.00	358.80	6,944.5	2,991.8	2,140.9	3,651.8	0.34	-0.32	0.11
10,944.0	90.30	358.70	6,944.2	3,085.7	2,138.8	3,733.3	0.34	0.32	-0.11
11,039.0	89.90	359.20	6,944.1	3,180.7	2,137.1	3,815.8	0.67	-0.42	0.53
11,133.0	93.20	0.20	6,941.5	3,274.7	2,136.6	3,898.0	3.67	3.51	1.06
11,227.0	92.80	358.30	6,936.6	3,368.5	2,135.4	3,979.8	2.06	-0.43	-2.02
11,321.0	92.20	358.50	6,932.5	3,462.4	2,132.7	4,061.0	0.67	-0.64	0.21
11,415.0	90.30	358.00	6,930.5	3,556.3	2,129.9	4,142.0	2.09	-2.02	-0.53
11,509.0	91.60	358.00	6,928.9	3,650.3	2,126.6	4,222.9	1.38	1.38	0.00
11,603.0	89.60	358.10	6,927.9	3,744.2	2,123.4	4,303.8	2.13	-2.13	0.11
11,707.0	90.10	358.00	6,928.2	3,848.1	2,119.9	4,393.4	0.49	0.48	-0.10
11,762.0	90.10	358.00	6,928.1	3,903.1	2,117.9	4,440.7	0.00	0.00	0.00
BHL 634'FNL, 806'FEL									

## Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
SHL 563'FSL, 2276'F	0.00	0.00	1.0	0.0	0.0	1,408,895.29	3,225,820.23	40.452983	-104.688540
- hit/miss target									
- survey hits target center									
- Point									
BHL 634'FNL, 806'FE	0.00	0.00	6,920.0	3,904.0	2,131.2	1,412,818.45	3,227,915.51	40.463699	-104.680881
- survey misses target center by 15.5ft at 11762.0ft MD (6928.1 TVD, 3903.1 N, 2117.9 E)									
- Point									

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_