

# Bayswater Exploration & Production, LLC

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

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

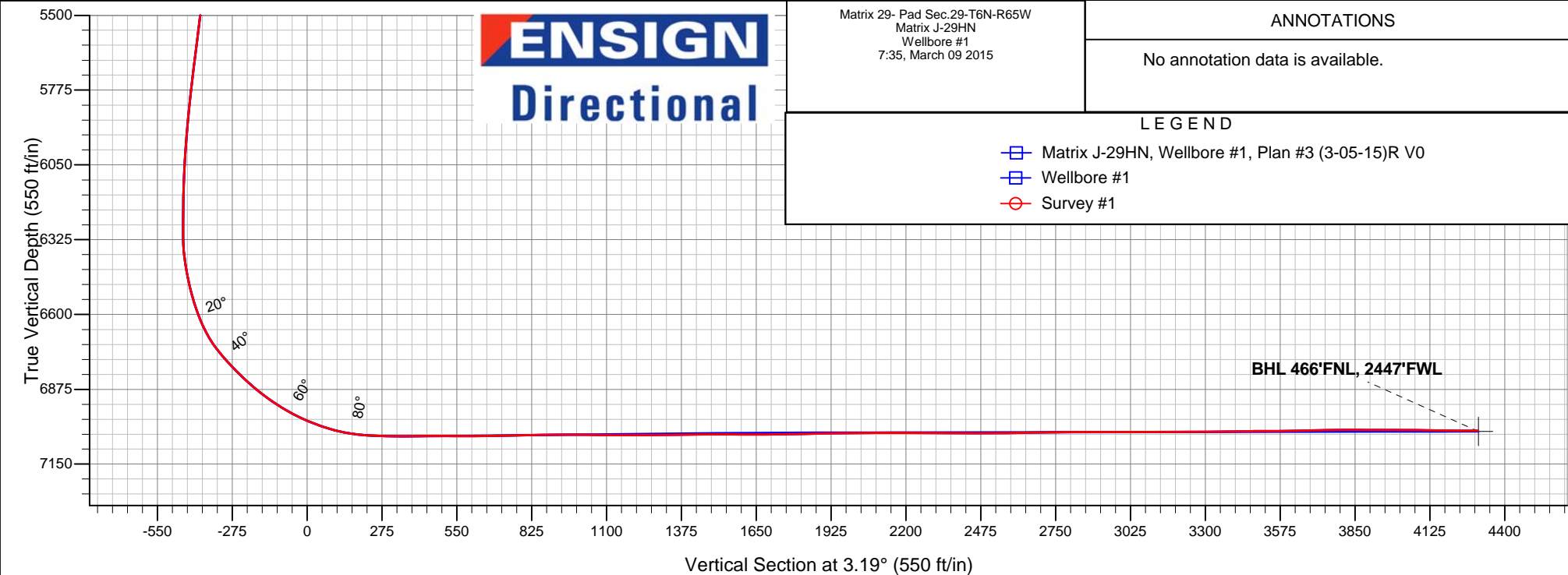
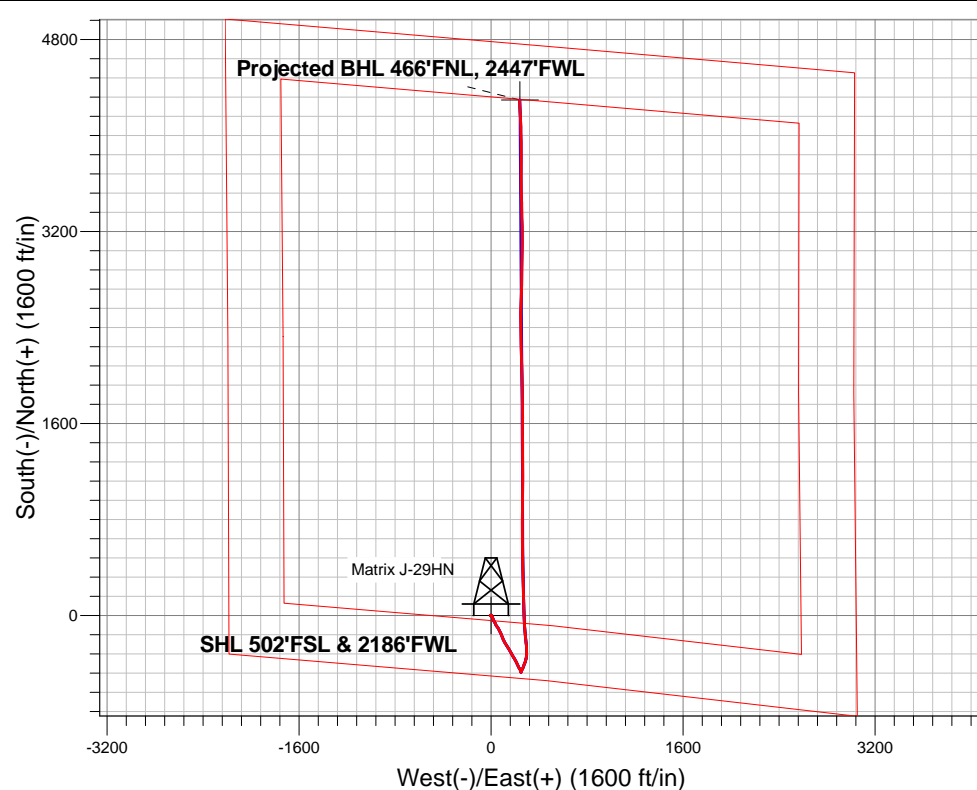
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4708.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1408840.91	3225730.56	40.452836	-104.688864	
RKB - 22.5' WELL @ 4730.5ft (RKB - 22.5')						

## FINAL SURVEY

**Projected Bottom Hole Location**  
**11545'MD 7027'TVD 4295'N & 236'E of SHL**  
**89.9 degree Incl @ 356.9 degree AZM**





# **Bayswater Exploration & Production, LLC**

**SEC.29-T6N-R65W**

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

**Matrix J-29HN**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**09 March, 2015**



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

<b>Company:</b>	Bayswater Exploration & Production, LLC	<b>Local Co-ordinate Reference:</b>	Well Matrix J-29HN
<b>Project:</b>	SEC.29-T6N-R65W	<b>TVD Reference:</b>	WELL @ 4730.5ft (RKB - 22.5')
<b>Site:</b>	Matrix 29- Pad Sec.29-T6N-R65W	<b>MD Reference:</b>	WELL @ 4730.5ft (RKB - 22.5')
<b>Well:</b>	Matrix J-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

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

<b>Well</b>	Matrix J-29HN		
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b>
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b>
<b>Position Uncertainty</b>	0.0 ft	<b>Wellhead Elevation:</b>	ft
		<b>Latitude:</b>	40.452836
		<b>Longitude:</b>	-104.688864
		<b>Ground Level:</b>	4,708.0 ft

<b>Wellbore</b>	Wellbore #1		
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>
	IGRF2010	3/5/2015	8.33
			<b>Dip Angle (°)</b>
			66.98
			<b>Field Strength (nT)</b>
			52,776

<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>
	0.0	0.0	0.0
			<b>Direction (°)</b>
			3.19

<b>Survey Program</b>	<b>Date</b>	3/9/2015		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
128.0	11,545.0	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	339.70	1.0	0.0	0.0	0.0	0.00	0.00	0.00	
<b>SHL 502'FSL &amp; 2186'FWL</b>										
128.0	0.20	339.70	128.0	0.2	-0.1	0.2	0.16	0.16	0.00	
220.0	0.30	357.50	220.0	0.6	-0.1	0.6	0.14	0.11	19.35	
312.0	0.40	337.60	312.0	1.1	-0.3	1.1	0.17	0.11	-21.63	
404.0	0.20	345.40	404.0	1.6	-0.4	1.6	0.22	-0.22	8.48	
496.0	0.30	303.30	496.0	1.9	-0.7	1.8	0.22	0.11	-45.76	
588.0	0.30	357.50	588.0	2.3	-0.9	2.2	0.30	0.00	58.91	
680.0	0.20	319.20	680.0	2.6	-1.0	2.6	0.21	-0.11	-41.63	
705.0	0.20	300.70	705.0	2.7	-1.1	2.6	0.26	0.00	-74.00	
827.0	0.90	239.90	827.0	2.3	-2.1	2.2	0.67	0.57	-49.84	
922.0	0.80	231.10	922.0	1.5	-3.2	1.3	0.17	-0.11	-9.26	

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<b>Well:</b>	Matrix J-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)
1,018.0	1.10	230.70	1,018.0	0.5	-4.5	0.3	0.31	0.31	-0.42
1,113.0	0.90	125.60	1,113.0	-0.5	-4.6	-0.8	1.68	-0.21	-110.63
1,205.0	0.90	122.40	1,204.9	-1.3	-3.4	-1.5	0.05	0.00	-3.48
1,297.0	0.90	105.00	1,296.9	-1.9	-2.1	-2.0	0.30	0.00	-18.91
1,389.0	0.90	90.30	1,388.9	-2.1	-0.7	-2.1	0.25	0.00	-15.98
1,481.0	0.70	141.60	1,480.9	-2.5	0.4	-2.5	0.78	-0.22	55.76
1,573.0	0.70	160.80	1,572.9	-3.5	0.9	-3.4	0.25	0.00	20.87
1,665.0	0.70	331.10	1,664.9	-3.5	0.9	-3.5	1.52	0.00	185.11
1,757.0	0.90	337.80	1,756.9	-2.4	0.3	-2.4	0.24	0.22	7.28
1,849.0	1.00	346.40	1,848.9	-0.9	-0.1	-0.9	0.19	0.11	9.35
1,942.0	0.70	254.10	1,941.9	-0.3	-0.9	-0.3	1.34	-0.32	-99.25
2,034.0	1.10	247.60	2,033.9	-0.8	-2.2	-0.9	0.45	0.43	-7.07
2,126.0	1.10	26.60	2,125.9	-0.3	-2.7	-0.5	2.24	0.00	151.09
2,218.0	0.10	178.20	2,217.9	0.4	-2.3	0.3	1.29	-1.09	164.78
2,310.0	0.80	83.60	2,309.8	0.4	-1.6	0.3	0.88	0.76	-102.83
2,402.0	1.00	101.00	2,401.8	0.3	-0.2	0.3	0.37	0.22	18.91
2,494.0	1.80	119.80	2,493.8	-0.6	1.8	-0.5	0.99	0.87	20.43
2,590.0	2.60	144.90	2,589.7	-3.1	4.4	-2.9	1.29	0.83	26.15
2,685.0	3.60	141.80	2,684.6	-7.2	7.5	-6.8	1.07	1.05	-3.26
2,780.0	4.60	163.70	2,779.4	-13.2	10.4	-12.6	1.94	1.05	23.05
2,875.0	5.90	163.40	2,874.0	-21.6	12.9	-20.8	1.37	1.37	-0.32
2,971.0	7.60	158.60	2,969.3	-32.2	16.6	-31.2	1.86	1.77	-5.00
3,066.0	9.30	157.80	3,063.3	-45.2	21.8	-43.9	1.79	1.79	-0.84
3,161.0	9.10	146.90	3,157.0	-58.6	28.8	-56.9	1.84	-0.21	-11.47
3,256.0	8.70	153.50	3,250.9	-71.3	36.1	-69.2	1.15	-0.42	6.95
3,351.0	9.70	151.10	3,344.7	-84.7	43.2	-82.2	1.13	1.05	-2.53
3,446.0	8.40	141.20	3,438.5	-97.1	51.4	-94.1	2.13	-1.37	-10.42
3,542.0	8.80	147.90	3,533.4	-108.8	59.7	-105.3	1.12	0.42	6.98
3,637.0	9.10	152.70	3,627.3	-121.7	67.0	-117.7	0.85	0.32	5.05
3,732.0	11.20	158.30	3,720.8	-136.9	73.9	-132.6	2.44	2.21	5.89
3,827.0	12.00	157.90	3,813.8	-154.6	81.0	-149.9	0.85	0.84	-0.42
3,923.0	12.60	158.30	3,907.6	-173.6	88.6	-168.4	0.63	0.63	0.42
4,018.0	12.50	156.20	4,000.4	-192.6	96.6	-187.0	0.49	-0.11	-2.21
4,113.0	11.50	153.90	4,093.3	-210.5	104.9	-204.4	1.17	-1.05	-2.42
4,208.0	10.00	149.20	4,186.6	-226.1	113.3	-219.5	1.83	-1.58	-4.95
4,303.0	9.30	150.00	4,280.3	-239.9	121.4	-232.7	0.75	-0.74	0.84
4,398.0	9.30	146.20	4,374.0	-252.9	129.5	-245.3	0.65	0.00	-4.00
4,494.0	8.80	146.00	4,468.8	-265.4	137.9	-257.3	0.52	-0.52	-0.21
4,589.0	9.80	150.40	4,562.6	-278.5	145.9	-269.9	1.29	1.05	4.63
4,684.0	9.60	150.40	4,656.2	-292.4	153.8	-283.4	0.21	-0.21	0.00
4,779.0	9.40	151.80	4,749.9	-306.1	161.4	-296.7	0.32	-0.21	1.47
4,874.0	9.20	150.40	4,843.7	-319.6	168.8	-309.7	0.32	-0.21	-1.47
4,970.0	10.30	149.70	4,938.3	-333.6	177.0	-323.3	1.15	1.15	-0.73
5,065.0	9.60	148.60	5,031.9	-347.7	185.4	-336.9	0.76	-0.74	-1.16
5,160.0	8.00	145.80	5,125.7	-360.0	193.2	-348.7	1.74	-1.68	-2.95
5,255.0	7.50	155.70	5,219.9	-371.1	199.5	-359.4	1.50	-0.53	10.42
5,351.0	7.90	152.00	5,315.0	-382.6	205.2	-370.6	0.66	0.42	-3.85
5,446.0	7.90	150.20	5,409.1	-394.1	211.5	-381.7	0.26	0.00	-1.89
5,541.0	8.10	155.70	5,503.2	-405.8	217.5	-393.1	0.83	0.21	5.79
5,636.0	8.00	158.10	5,597.2	-418.1	222.7	-405.0	0.37	-0.11	2.53
5,731.0	8.60	150.60	5,691.3	-430.4	228.6	-417.0	1.30	0.63	-7.89
5,826.0	7.60	147.20	5,785.3	-441.8	235.5	-428.0	1.17	-1.05	-3.58
5,921.0	6.20	147.20	5,879.6	-451.4	241.7	-437.3	1.47	-1.47	0.00
6,016.0	5.30	154.20	5,974.1	-459.7	246.4	-445.3	1.20	-0.95	7.37

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<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)
6,112.0	3.10	157.90	6,069.9	-466.1	249.3	-451.5	2.31	-2.29	3.85
6,207.0	1.20	175.30	6,164.8	-469.5	250.4	-454.8	2.09	-2.00	18.32
6,302.0	1.50	255.30	6,259.8	-470.8	249.2	-456.2	1.84	0.32	84.21
6,349.0	1.00	299.60	6,306.8	-470.7	248.3	-456.2	2.23	-1.06	94.26
6,397.0	4.20	20.10	6,354.7	-468.9	248.5	-454.3	8.65	6.67	167.71
6,444.0	8.60	26.30	6,401.4	-464.1	250.7	-449.4	9.46	9.36	13.19
6,492.0	11.80	28.20	6,448.7	-456.6	254.6	-441.7	6.70	6.67	3.96
6,539.0	14.20	24.90	6,494.4	-447.1	259.3	-432.0	5.34	5.11	-7.02
6,587.0	16.60	21.50	6,540.7	-435.4	264.3	-420.0	5.34	5.00	-7.08
6,634.0	20.40	20.80	6,585.3	-421.5	269.7	-405.8	8.10	8.09	-1.49
6,683.0	24.40	20.80	6,630.6	-404.0	276.3	-388.0	8.16	8.16	0.00
6,730.0	29.30	18.90	6,672.5	-384.0	283.5	-367.7	10.58	10.43	-4.04
6,778.0	36.00	13.40	6,712.9	-359.2	290.5	-342.4	15.25	13.96	-11.46
6,825.0	40.40	5.00	6,749.9	-330.5	295.1	-313.6	14.47	9.36	-17.87
6,873.0	43.20	358.50	6,785.6	-298.6	296.0	-281.6	10.74	5.83	-13.54
6,920.0	45.50	355.90	6,819.3	-265.8	294.4	-249.0	6.24	4.89	-5.53
6,968.0	48.60	354.10	6,852.0	-230.8	291.3	-214.2	7.02	6.46	-3.75
7,015.0	51.70	354.10	6,882.1	-194.9	287.6	-178.6	6.60	6.60	0.00
7,064.0	55.00	354.60	6,911.3	-155.8	283.7	-139.8	6.78	6.73	1.02
7,111.0	57.90	355.00	6,937.3	-116.8	280.2	-101.0	6.21	6.17	0.85
7,159.0	61.80	356.00	6,961.4	-75.4	276.9	-59.9	8.32	8.13	2.08
7,206.0	65.30	357.80	6,982.3	-33.4	274.7	-18.1	8.20	7.45	3.83
7,254.0	68.80	358.70	7,001.0	10.8	273.3	26.0	7.49	7.29	1.88
7,301.0	72.30	358.50	7,016.7	55.1	272.2	70.1	7.46	7.45	-0.43
7,349.0	77.20	358.30	7,029.3	101.3	270.9	116.3	10.22	10.21	-0.42
7,396.0	81.50	358.30	7,038.0	147.5	269.6	162.3	9.15	9.15	0.00
7,444.0	85.30	358.20	7,043.5	195.2	268.1	209.8	7.92	7.92	-0.21
7,463.0	86.90	358.30	7,044.8	214.1	267.5	228.7	8.44	8.42	0.53
7,553.0	89.50	358.70	7,047.6	304.0	265.2	318.3	2.92	2.89	0.44
7,648.0	91.10	359.00	7,047.1	399.0	263.3	413.0	1.71	1.68	0.32
7,742.0	89.80	358.70	7,046.4	493.0	261.4	506.8	1.42	-1.38	-0.32
7,836.0	89.80	359.50	7,046.7	587.0	259.9	600.5	0.85	0.00	0.85
7,930.0	91.10	0.10	7,046.0	681.0	259.6	694.3	1.52	1.38	0.64
8,024.0	91.50	0.80	7,043.9	774.9	260.3	788.2	0.86	0.43	0.74
8,118.0	90.70	359.70	7,042.0	868.9	260.7	882.1	1.45	-0.85	-1.17
8,213.0	89.60	0.40	7,041.8	963.9	260.8	976.9	1.37	-1.16	0.74
8,306.0	88.80	0.90	7,043.1	1,056.9	261.9	1,069.8	1.01	-0.86	0.54
8,401.0	90.30	0.20	7,043.8	1,151.9	262.8	1,164.7	1.74	1.58	-0.74
8,495.0	90.50	359.90	7,043.2	1,245.9	262.9	1,258.6	0.38	0.21	-0.32
8,589.0	90.70	359.50	7,042.2	1,339.9	262.4	1,352.4	0.48	0.21	-0.43
8,683.0	90.70	359.50	7,041.1	1,433.9	261.6	1,446.2	0.00	0.00	0.00
8,778.0	90.10	359.70	7,040.4	1,528.8	260.9	1,541.0	0.67	-0.63	0.21
8,863.1	89.19	359.88	7,040.9	1,614.0	260.6	1,626.0	1.08	-1.06	0.21
<b>WP #1 (J-29HN)</b>									
8,872.0	89.10	359.90	7,041.0	1,622.8	260.6	1,634.8	1.08	-1.06	0.21
8,966.0	91.50	359.70	7,040.6	1,716.8	260.2	1,728.7	2.56	2.55	-0.21
9,060.0	90.90	359.50	7,038.6	1,810.8	259.6	1,822.5	0.67	-0.64	-0.21
9,154.0	90.80	359.20	7,037.2	1,904.8	258.5	1,916.2	0.34	-0.11	-0.32
9,248.0	90.80	358.30	7,035.9	1,998.8	256.5	2,009.9	0.96	0.00	-0.96
9,342.0	90.50	358.30	7,034.8	2,092.7	253.7	2,103.6	0.32	-0.32	0.00
9,436.0	89.30	358.10	7,035.0	2,186.7	250.7	2,197.2	1.29	-1.28	-0.21
9,530.0	89.90	359.40	7,035.6	2,280.6	248.7	2,290.9	1.52	0.64	1.38
9,624.0	89.70	358.70	7,036.0	2,374.6	247.1	2,384.7	0.77	-0.21	-0.74
9,718.0	89.70	359.70	7,036.5	2,468.6	245.8	2,478.5	1.06	0.00	1.06

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<b>Site:</b>	Matrix 29- Pad Sec.29-T6N-R65W	<b>MD Reference:</b>	WELL @ 4730.5ft (RKB - 22.5')
<b>Well:</b>	Matrix J-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)
9,812.0	91.00	2.20	7,035.9	2,562.6	247.4	2,572.4	3.00	1.38	2.66
9,906.0	91.10	1.80	7,034.2	2,656.5	250.6	2,666.4	0.44	0.11	-0.43
10,001.0	90.90	1.30	7,032.5	2,751.5	253.2	2,761.3	0.57	-0.21	-0.53
10,094.0	89.50	0.20	7,032.2	2,844.5	254.4	2,854.2	1.91	-1.51	-1.18
10,189.0	90.00	0.90	7,032.6	2,939.4	255.3	2,949.1	0.91	0.53	0.74
10,283.0	90.60	2.20	7,032.1	3,033.4	257.9	3,043.1	1.52	0.64	1.38
10,378.0	90.20	358.70	7,031.4	3,128.4	258.6	3,137.9	3.71	-0.42	-3.68
10,472.0	89.60	358.50	7,031.6	3,222.4	256.3	3,231.6	0.67	-0.64	-0.21
10,567.0	90.80	359.70	7,031.3	3,317.3	254.8	3,326.4	1.79	1.26	1.26
10,661.0	91.10	359.00	7,029.7	3,411.3	253.8	3,420.2	0.81	0.32	-0.74
10,755.0	89.80	357.40	7,029.0	3,505.3	250.8	3,513.8	2.19	-1.38	-1.70
10,850.0	91.40	0.40	7,028.0	3,600.2	249.0	3,608.5	3.58	1.68	3.16
10,944.0	91.50	359.70	7,025.6	3,694.2	249.1	3,702.3	0.75	0.11	-0.74
11,038.0	89.90	0.10	7,024.4	3,788.2	248.9	3,796.2	1.75	-1.70	0.43
11,132.0	90.20	359.90	7,024.4	3,882.2	248.9	3,890.0	0.38	0.32	-0.21
11,227.0	89.90	359.70	7,024.3	3,977.2	248.6	3,984.9	0.38	-0.32	-0.21
11,320.0	89.10	358.00	7,025.1	4,070.2	246.7	4,077.6	2.02	-0.86	-1.83
11,414.0	89.30	357.60	7,026.4	4,164.1	243.1	4,171.2	0.48	0.21	-0.43
11,490.0	89.90	356.90	7,026.9	4,240.0	239.5	4,246.8	1.21	0.79	-0.92
11,545.0	89.90	356.90	7,027.0	4,294.9	236.5	4,301.4	0.00	0.00	0.00
BHL 465'FNL, 2450'FWL									

## Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
SHL 502'FSL & 2186'I	0.00	0.00	1.0	0.0	0.0	1,408,840.92	3,225,730.56	40.452836	-104.688864
- hit/miss target									
- Shape									
- survey hits target center									
- Point									
BHL 465'FNL, 2450'F'	0.00	0.00	7,030.0	4,296.4	239.6	1,413,139.14	3,225,930.82	40.464629	-104.688003
- survey misses target center by 4.5ft at 11545.0ft MD (7027.0 TVD, 4294.9 N, 236.5 E)									
- Point									

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