



Crestone Peak Resources

DJ BASIN

BIGHORN

BIGHORN 4S-17H-P267

BIGHORN 4S-17H-P267 OH

Survey: Survey #1 - MWD Survey

Standard Survey Report

25 March, 2019



CRESTONE PEAK
RESOURCES

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well BIGHORN 4S-17H-P267
Project:	DJ BASIN	TVD Reference:	GL 4960' & RKB 23' @ 4983.0ft (Ensign 153)
Site:	BIGHORN	MD Reference:	GL 4960' & RKB 23' @ 4983.0ft (Ensign 153)
Well:	BIGHORN 4S-17H-P267	North Reference:	True
Wellbore:	BIGHORN 4S-17H-P267 OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	US_EDM

Project	DJ BASIN		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		BIGHORN			
Site Position:		Northing:	1,292,097.01 usft	Latitude:	40.133684
From:	Lat/Long	Easting:	3,165,479.29 usft	Longitude:	-104.908162
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.38 °

Well	BIGHORN 4S-17H-P267					
Well Position	+N/-S	0.0 ft	Northing:	1,292,097.06 usft	Latitude:	40.133681
	+E/-W	0.0 ft	Easting:	3,165,659.36 usft	Longitude:	-104.907518
Position Uncertainty		0.0 ft	Wellhead Elevation:	0.0 ft	Ground Level:	4,960.0 ft

Wellbore	BIGHORN 4S-17H-P267 OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	3/2/2019	8.30	66.53	52,082

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	6.72	

Survey Program		Date	3/25/2019		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
165.0	15,385.0	Survey #1 - MWD Survey (BIGHORN 4S-1	MWD+HDGM	OWSG MWD + HDGM	

Survey										
	Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
	0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
	165.0	0.70	219.29	165.0	-0.8	-0.6	-0.8	0.42	0.42	0.00
	260.0	1.76	167.17	260.0	-2.7	-0.7	-2.7	1.52	1.12	-54.86
	354.0	3.26	150.64	353.9	-6.4	0.9	-6.2	1.76	1.60	-17.59
	428.0	3.87	146.81	427.7	-10.3	3.3	-9.9	0.88	0.82	-5.18
	523.0	6.04	141.31	522.4	-16.9	8.2	-15.8	2.34	2.28	-5.79
	617.0	6.93	144.73	615.8	-25.4	14.6	-23.5	1.03	0.95	3.64
	711.0	8.11	148.49	709.0	-35.7	21.3	-32.9	1.36	1.26	4.00
	806.0	9.16	150.45	802.9	-48.0	28.6	-44.3	1.15	1.11	2.06
	900.0	11.43	153.83	895.4	-62.8	36.4	-58.1	2.50	2.41	3.60

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Wellbore:	BIGHORN 4S-17H-P267 OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	US_EDM

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
995.0	11.71	152.37	988.4	-79.8	45.0	-74.0	0.43	0.29	-1.54
1,089.0	12.70	157.73	1,080.3	-97.8	53.3	-90.9	1.60	1.05	5.70
1,183.0	13.70	158.30	1,171.8	-117.7	61.4	-109.8	1.07	1.06	0.61
1,278.0	14.49	158.50	1,264.0	-139.3	69.9	-130.1	0.83	0.83	0.21
1,372.0	15.94	158.68	1,354.7	-162.2	78.9	-151.9	1.54	1.54	0.19
1,467.0	15.61	162.79	1,446.1	-186.6	87.4	-175.1	1.23	-0.35	4.33
1,562.0	12.63	160.62	1,538.2	-208.6	94.6	-196.1	3.19	-3.14	-2.28
1,656.0	11.94	155.45	1,630.1	-227.1	102.1	-213.6	1.38	-0.73	-5.50
1,751.0	11.02	151.91	1,723.2	-244.1	110.4	-229.5	1.22	-0.97	-3.73
1,846.0	10.88	154.66	1,816.4	-260.2	118.6	-244.5	0.57	-0.15	2.89
1,940.0	10.89	156.69	1,908.8	-276.4	125.9	-259.8	0.41	0.01	2.16
2,035.0	11.48	159.82	2,001.9	-293.5	132.7	-276.0	0.89	0.62	3.29
2,129.0	9.98	152.66	2,094.3	-309.5	139.6	-291.0	2.13	-1.60	-7.62
2,224.0	11.11	155.00	2,187.7	-325.1	147.3	-305.7	1.27	1.19	2.46
2,318.0	10.73	151.24	2,280.0	-341.0	155.3	-320.5	0.86	-0.40	-4.00
2,361.0	10.31	147.32	2,322.3	-347.7	159.3	-326.7	1.93	-0.98	-9.12
2,511.0	10.55	139.43	2,469.8	-369.5	175.5	-346.4	0.96	0.16	-5.26
2,605.0	11.52	144.18	2,562.1	-383.6	186.6	-359.2	1.41	1.03	5.05
2,699.0	12.57	150.33	2,654.0	-400.1	197.2	-374.3	1.76	1.12	6.54
2,793.0	14.70	150.16	2,745.3	-419.4	208.2	-392.1	2.27	2.27	-0.18
2,888.0	14.08	149.28	2,837.4	-439.7	220.1	-411.0	0.69	-0.65	-0.93
2,983.0	14.77	156.84	2,929.4	-460.8	230.7	-430.7	2.11	0.73	7.96
3,077.0	13.45	155.78	3,020.5	-481.8	239.9	-450.4	1.43	-1.40	-1.13
3,171.0	14.51	151.21	3,111.8	-502.1	250.1	-469.4	1.63	1.13	-4.86
3,265.0	13.19	150.86	3,203.0	-521.8	261.0	-487.7	1.41	-1.40	-0.37
3,360.0	14.07	151.39	3,295.3	-541.4	271.8	-505.9	0.94	0.93	0.56
3,454.0	13.54	151.03	3,386.6	-561.0	282.6	-524.1	0.57	-0.56	-0.38
3,548.0	13.72	155.78	3,478.0	-580.8	292.5	-542.6	1.21	0.19	5.05
3,643.0	13.19	152.44	3,570.4	-600.7	302.1	-561.3	0.99	-0.56	-3.52
3,738.0	14.42	147.87	3,662.6	-620.3	313.4	-579.4	1.73	1.29	-4.81
3,856.0	13.01	147.52	3,777.3	-644.0	328.4	-601.2	1.20	-1.19	-0.30
3,950.0	13.54	150.33	3,868.8	-662.5	339.5	-618.2	0.89	0.56	2.99
4,044.0	15.48	149.28	3,959.8	-682.8	351.4	-637.1	2.08	2.06	-1.12
4,139.0	15.30	144.88	4,051.4	-704.0	365.1	-656.5	1.24	-0.19	-4.63
4,233.0	16.62	149.45	4,141.7	-725.7	379.0	-676.4	1.94	1.40	4.86
4,328.0	15.48	154.90	4,233.0	-748.9	391.3	-698.0	1.99	-1.20	5.74
4,423.0	12.66	152.44	4,325.2	-769.6	401.5	-717.4	3.03	-2.97	-2.59
4,517.0	14.77	149.98	4,416.5	-789.1	412.3	-735.5	2.33	2.24	-2.62
4,612.0	14.25	153.85	4,508.5	-810.1	423.5	-755.0	1.16	-0.55	4.07
4,706.0	15.04	152.79	4,599.4	-831.3	434.2	-774.8	0.89	0.84	-1.13
4,800.0	13.98	152.97	4,690.4	-852.3	444.9	-794.4	1.13	-1.13	0.19
4,895.0	15.12	152.26	4,782.4	-873.5	455.9	-814.2	1.21	1.20	-0.75
4,989.0	12.57	152.79	4,873.6	-893.4	466.3	-832.8	2.72	-2.71	0.56
5,084.0	13.10	149.28	4,966.2	-911.9	476.5	-849.9	0.99	0.56	-3.69

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Design:	OH	Database:	US_EDM

Survey									
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5,178.0	14.86	152.09	5,057.5	-931.7	487.6	-868.3	2.01	1.87	2.99
5,272.0	14.68	151.21	5,148.4	-952.8	498.9	-887.9	0.31	-0.19	-0.94
5,366.0	14.77	148.57	5,239.3	-973.4	510.9	-907.0	0.72	0.10	-2.81
5,461.0	14.51	149.45	5,331.2	-994.0	523.3	-926.0	0.36	-0.27	0.93
5,554.0	14.60	156.13	5,421.2	-1,014.8	534.0	-945.4	1.81	0.10	7.18
5,648.0	15.04	154.90	5,512.1	-1,036.6	543.9	-965.9	0.58	0.47	-1.31
5,743.0	12.40	153.67	5,604.4	-1,057.0	553.7	-985.0	2.80	-2.78	-1.29
5,837.0	12.57	151.91	5,696.1	-1,075.0	563.0	-1,001.8	0.44	0.18	-1.87
5,932.0	11.43	159.82	5,789.1	-1,093.0	571.1	-1,018.7	2.10	-1.20	8.33
6,026.0	11.43	154.37	5,881.2	-1,110.1	578.3	-1,034.9	1.15	0.00	-5.80
6,120.0	9.15	154.37	5,973.7	-1,125.3	585.6	-1,049.1	2.43	-2.43	0.00
6,215.0	9.15	146.99	6,067.5	-1,138.4	593.0	-1,061.2	1.23	0.00	-7.77
6,310.0	8.00	154.55	6,161.4	-1,150.7	599.9	-1,072.7	1.69	-1.21	7.96
6,404.0	5.89	152.44	6,254.7	-1,160.9	605.0	-1,082.2	2.26	-2.24	-2.24
6,499.0	4.75	168.26	6,349.3	-1,169.1	608.0	-1,089.9	1.94	-1.20	16.65
6,593.0	2.46	192.69	6,443.1	-1,174.8	608.4	-1,095.6	2.88	-2.44	25.99
6,688.0	0.97	271.62	6,538.1	-1,176.8	607.1	-1,097.7	2.59	-1.57	83.08
6,781.0	5.45	336.48	6,630.9	-1,172.7	604.6	-1,094.0	5.50	4.82	69.74
6,875.0	11.52	347.21	6,723.9	-1,159.5	600.7	-1,081.3	6.65	6.46	11.41
6,969.0	16.18	358.10	6,815.1	-1,137.2	598.2	-1,059.5	5.66	4.96	11.59
7,064.0	19.87	359.34	6,905.5	-1,107.8	597.6	-1,030.4	3.90	3.88	1.31
7,159.0	24.71	0.74	6,993.3	-1,071.8	597.7	-994.6	5.12	5.09	1.47
7,253.0	33.68	6.89	7,075.3	-1,026.2	601.0	-948.9	10.05	9.54	6.54
7,347.0	43.00	8.48	7,149.0	-968.5	608.9	-890.6	9.97	9.91	1.69
7,441.0	51.27	4.61	7,212.9	-900.1	616.6	-821.8	9.30	8.80	-4.12
7,536.0	57.68	0.92	7,268.1	-822.9	620.2	-744.8	7.45	6.75	-3.88
7,630.0	62.78	0.39	7,314.7	-741.4	621.1	-663.6	5.45	5.43	-0.56
7,725.0	67.36	1.97	7,354.8	-655.3	622.9	-577.9	5.05	4.82	1.66
7,820.0	73.86	3.55	7,386.3	-565.8	627.3	-488.6	7.02	6.84	1.66
7,915.0	84.94	359.69	7,403.7	-472.6	629.9	-395.7	12.33	11.66	-4.06
7,930.9	85.89	359.36	7,405.0	-456.8	629.7	-380.0	6.33	5.99	-2.07
Bighorn 4S-17H-P267 TPZ 460'FSL & 0'FEL									
8,009.0	90.57	357.75	7,407.4	-378.8	627.8	-302.8	6.33	5.99	-2.06
8,104.0	91.89	356.35	7,405.4	-283.9	622.9	-209.1	2.03	1.39	-1.47
8,198.0	92.95	1.44	7,401.4	-190.1	621.1	-116.1	5.53	1.13	5.41
8,293.0	91.54	2.32	7,397.7	-95.2	624.2	-21.5	1.75	-1.48	0.93
8,386.0	89.96	3.73	7,396.5	-2.3	629.1	71.3	2.28	-1.70	1.52
8,481.0	89.96	2.85	7,396.5	92.5	634.5	166.1	0.93	0.00	-0.93
8,576.0	90.22	1.97	7,396.4	187.4	638.5	260.8	0.97	0.27	-0.93
8,670.0	91.19	3.55	7,395.2	281.3	643.1	354.6	1.97	1.03	1.68
8,764.0	91.98	2.85	7,392.6	375.1	648.3	448.4	1.12	0.84	-0.74
8,857.0	90.40	3.91	7,390.7	467.9	653.8	541.2	2.05	-1.70	1.14
8,952.0	90.84	3.55	7,389.7	562.7	660.0	636.1	0.60	0.46	-0.38

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9,046.0	90.75	2.68	7,388.4	656.6	665.1	729.9	0.93	-0.10	-0.93
9,140.0	91.45	2.32	7,386.6	750.5	669.2	823.6	0.84	0.74	-0.38
9,235.0	89.25	2.15	7,386.0	845.4	672.9	918.3	2.32	-2.32	-0.18
9,329.0	89.69	1.44	7,386.8	939.3	675.8	1,011.9	0.89	0.47	-0.76
9,423.0	89.96	1.27	7,387.1	1,033.3	678.0	1,105.5	0.34	0.29	-0.18
9,517.0	90.66	0.57	7,386.6	1,127.3	679.5	1,199.0	1.05	0.74	-0.74
9,612.0	90.57	1.80	7,385.6	1,222.3	681.5	1,293.6	1.30	-0.09	1.29
9,706.0	91.19	1.80	7,384.2	1,316.2	684.5	1,387.2	0.66	0.66	0.00
9,800.0	91.71	1.80	7,381.8	1,410.1	687.4	1,480.9	0.55	0.55	0.00
9,895.0	91.36	3.03	7,379.2	1,505.0	691.4	1,575.6	1.35	-0.37	1.29
9,989.0	92.07	2.68	7,376.4	1,598.9	696.1	1,669.3	0.84	0.76	-0.37
10,083.0	90.22	3.20	7,374.5	1,692.7	700.9	1,763.1	2.04	-1.97	0.55
10,178.0	90.22	2.85	7,374.2	1,787.6	705.9	1,857.9	0.37	0.00	-0.37
10,272.0	89.69	1.62	7,374.3	1,881.5	709.6	1,951.6	1.42	-0.56	-1.31
10,367.0	90.13	0.74	7,374.4	1,976.5	711.6	2,046.1	1.04	0.46	-0.93
10,461.0	90.31	0.39	7,374.0	2,070.5	712.5	2,139.6	0.42	0.19	-0.37
10,555.0	91.10	0.04	7,372.9	2,164.5	712.8	2,233.0	0.92	0.84	-0.37
10,650.0	92.07	359.86	7,370.3	2,259.4	712.8	2,327.3	1.04	1.02	-0.19
10,744.0	92.07	1.97	7,366.9	2,353.4	714.3	2,420.7	2.24	0.00	2.24
10,839.0	92.59	2.50	7,363.0	2,448.2	718.0	2,515.4	0.78	0.55	0.56
10,934.0	91.63	3.03	7,359.5	2,543.0	722.5	2,610.1	1.15	-1.01	0.56
11,029.0	90.31	3.03	7,357.9	2,637.9	727.6	2,704.9	1.39	-1.39	0.00
11,114.0	90.77	3.18	7,357.1	2,720.1	732.0	2,787.1	0.59	0.56	0.18
BIGHORN 4S 2720' TGT									
11,123.0	90.84	3.20	7,356.9	2,731.7	732.7	2,798.7	0.59	0.56	0.18
11,218.0	88.64	2.85	7,357.4	2,826.6	737.7	2,893.5	2.34	-2.32	-0.37
11,313.0	88.72	2.50	7,359.6	2,921.5	742.1	2,988.2	0.38	0.08	-0.37
11,407.0	88.29	1.09	7,362.0	3,015.4	745.0	3,081.8	1.57	-0.46	-1.50
11,501.0	88.46	1.62	7,364.7	3,109.3	747.3	3,175.4	0.59	0.18	0.56
11,595.0	88.55	0.57	7,367.1	3,203.3	749.1	3,268.9	1.12	0.10	-1.12
11,690.0	88.90	0.39	7,369.3	3,298.2	749.9	3,363.3	0.41	0.37	-0.19
11,785.0	90.31	0.21	7,369.9	3,393.2	750.4	3,457.7	1.50	1.48	-0.19
11,879.0	90.22	0.04	7,369.5	3,487.2	750.6	3,551.1	0.20	-0.10	-0.18
11,974.0	90.31	359.34	7,369.0	3,582.2	750.1	3,645.4	0.74	0.09	-0.74
12,068.0	90.92	0.57	7,368.0	3,676.2	750.0	3,738.7	1.46	0.65	1.31
12,163.0	91.45	1.97	7,366.1	3,771.2	752.1	3,833.3	1.58	0.56	1.47
12,258.0	91.80	1.62	7,363.4	3,866.1	755.1	3,927.9	0.52	0.37	-0.37
12,352.0	90.40	2.15	7,361.6	3,960.0	758.1	4,021.5	1.59	-1.49	0.56
12,446.0	90.75	1.80	7,360.6	4,054.0	761.4	4,115.2	0.53	0.37	-0.37
12,541.0	91.19	1.80	7,359.0	4,148.9	764.4	4,209.8	0.46	0.46	0.00
12,635.0	91.80	1.09	7,356.6	4,242.8	766.7	4,303.4	1.00	0.65	-0.76
12,729.0	89.96	2.32	7,355.1	4,336.8	769.5	4,397.0	2.35	-1.96	1.31
12,824.0	90.57	2.15	7,354.7	4,431.7	773.2	4,491.7	0.67	0.64	-0.18
12,918.0	90.13	4.08	7,354.1	4,525.6	778.4	4,585.5	2.11	-0.47	2.05

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well BIGHORN 4S-17H-P267
Project:	DJ BASIN	TVD Reference:	GL 4960' & RKB 23' @ 4983.0ft (Ensign 153)
Site:	BIGHORN	MD Reference:	GL 4960' & RKB 23' @ 4983.0ft (Ensign 153)
Well:	BIGHORN 4S-17H-P267	North Reference:	True
Wellbore:	BIGHORN 4S-17H-P267 OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	US_EDM

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,012.0	90.48	3.38	7,353.6	4,619.4	784.5	4,679.4	0.83	0.37	-0.74
13,106.0	91.01	3.55	7,352.4	4,713.2	790.1	4,773.2	0.59	0.56	0.18
13,201.0	90.04	3.55	7,351.5	4,808.0	796.0	4,868.1	1.02	-1.02	0.00
13,295.0	89.34	3.38	7,352.0	4,901.8	801.7	4,961.9	0.77	-0.74	-0.18
13,389.0	89.60	2.68	7,352.9	4,995.7	806.7	5,055.7	0.79	0.28	-0.74
13,484.0	88.72	3.38	7,354.3	5,090.5	811.7	5,150.5	1.18	-0.93	0.74
13,579.0	87.67	1.27	7,357.3	5,185.4	815.6	5,245.2	2.48	-1.11	-2.22
13,656.6	87.82	0.98	7,360.3	5,262.9	817.1	5,322.4	0.42	0.19	-0.37
BIGHORN 4S 5263' TGT									
13,673.0	87.85	0.92	7,360.9	5,279.3	817.3	5,338.7	0.42	0.19	-0.37
13,768.0	90.22	0.21	7,362.5	5,374.3	818.3	5,433.1	2.60	2.49	-0.75
13,863.0	91.10	0.74	7,361.4	5,469.3	819.1	5,527.5	1.08	0.93	0.56
13,957.0	91.54	1.97	7,359.3	5,563.2	821.3	5,621.1	1.39	0.47	1.31
14,052.0	91.71	1.44	7,356.6	5,658.1	824.1	5,715.7	0.59	0.18	-0.56
14,146.0	90.75	0.92	7,354.6	5,752.1	826.1	5,809.2	1.16	-1.02	-0.55
14,241.0	90.75	359.69	7,353.3	5,847.1	826.6	5,903.6	1.29	0.00	-1.29
14,335.0	91.54	1.44	7,351.5	5,941.1	827.5	5,997.1	2.04	0.84	1.86
14,430.0	90.40	2.68	7,349.8	6,036.0	830.9	6,091.7	1.77	-1.20	1.31
14,524.0	88.99	1.97	7,350.3	6,129.9	834.7	6,185.5	1.68	-1.50	-0.76
14,618.0	89.43	1.27	7,351.6	6,223.9	837.4	6,279.1	0.88	0.47	-0.74
14,713.0	89.60	1.27	7,352.4	6,318.8	839.5	6,373.6	0.18	0.18	0.00
14,807.0	89.96	0.39	7,352.8	6,412.8	840.8	6,467.1	1.01	0.38	-0.94
14,901.0	90.13	359.86	7,352.7	6,506.8	841.0	6,560.5	0.59	0.18	-0.56
14,995.0	90.31	359.16	7,352.4	6,600.8	840.2	6,653.8	0.77	0.19	-0.74
15,090.0	90.31	1.09	7,351.9	6,695.8	840.4	6,748.2	2.03	0.00	2.03
15,184.0	90.84	0.92	7,350.9	6,789.8	842.1	6,841.7	0.59	0.56	-0.18
15,279.0	91.36	0.92	7,349.1	6,884.8	843.6	6,936.2	0.55	0.55	0.00
15,325.0	91.63	0.74	7,347.9	6,930.7	844.3	6,981.9	0.71	0.59	-0.39
Last Survey - 15,325' MD									
15,385.0	91.63	0.74	7,346.2	6,990.7	845.1	7,041.6	0.00	0.00	0.00
PTB - 2641'FSL, 21'FWL, Sec.9 - Bn 4S-17H-P267 BHL 2636'FSL & 0'FEL									

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well BIGHORN 4S-17H-P267
Project:	DJ BASIN	TVD Reference:	GL 4960' & RKB 23' @ 4983.0ft (Ensign 153)
Site:	BIGHORN	MD Reference:	GL 4960' & RKB 23' @ 4983.0ft (Ensign 153)
Well:	BIGHORN 4S-17H-P267	North Reference:	True
Wellbore:	BIGHORN 4S-17H-P267 OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	US_EDM

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Bn 4S-17H-P267 BHL 2l - survey misses target center by 22.9ft at 15385.0ft MD (7346.2 TVD, 6990.7 N, 845.1 E) - Point	0.00	0.00	7,353.0	6,995.7	823.8	1,299,098.11	3,166,436.36	40.152885	-104.904571
BIGHORN 4S 5263' TG` - survey misses target center by 2.9ft at 13656.6ft MD (7360.3 TVD, 5262.9 N, 817.1 E) - Point	0.00	0.00	7,359.0	5,263.0	814.5	1,297,365.39	3,166,438.64	40.148129	-104.904605
BIGHORN 4S 2720' TG` - survey misses target center by 6.6ft at 11111.4ft MD (7357.1 TVD, 2720.1 N, 732.0 E) - Point	0.00	0.00	7,363.0	2,720.0	734.9	1,294,821.92	3,166,376.09	40.141148	-104.904890

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
15,325.0	7,347.9	6,930.7	844.3	Last Survey - 15,325' MD
15,385.0	7,346.2	6,990.7	845.1	PTB - 2641'FSL, 21'FWL, Sec.9

Checked By: _____ Approved By: _____ Date: _____