

Project: Weld County, CO (NAD 83)
 Site: Sec. 33-T4N-R67W (Deering 33H Pad)
 Well: Deering 33-5H
 Wellbore: Plan A
 Design: Rev A0 (Permitting Plan Only)

K.P. Kauffman Company, Inc.

HALLIBURTON

Sperry Drilling

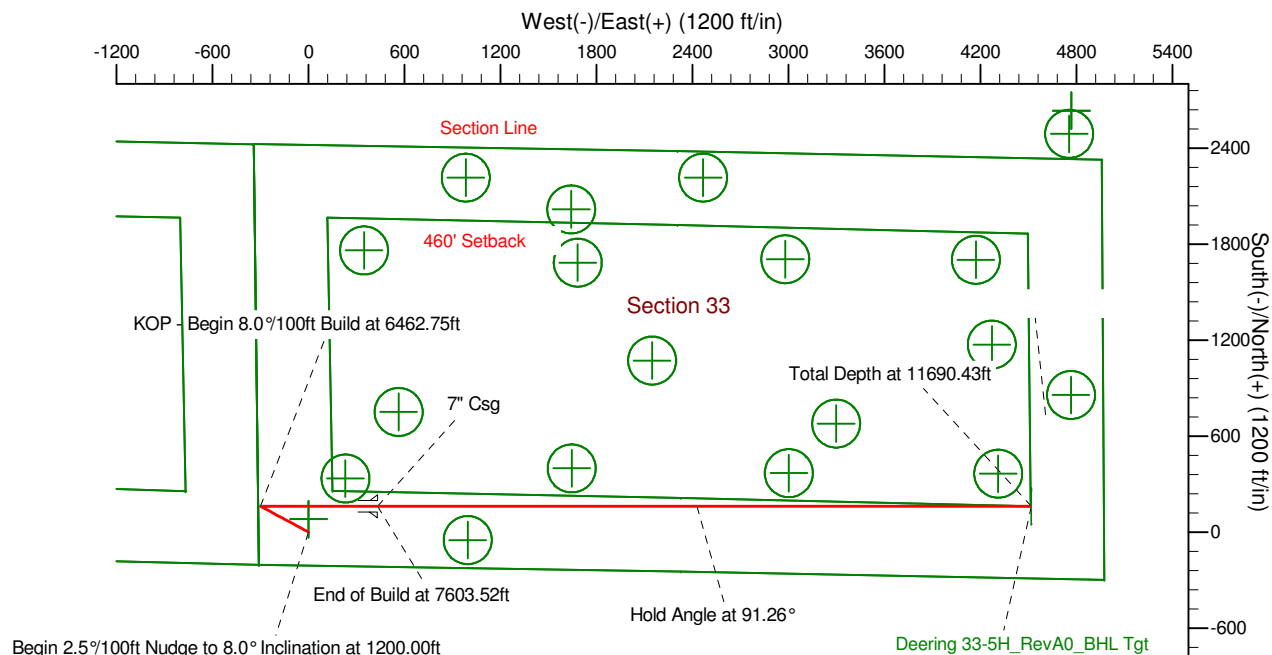
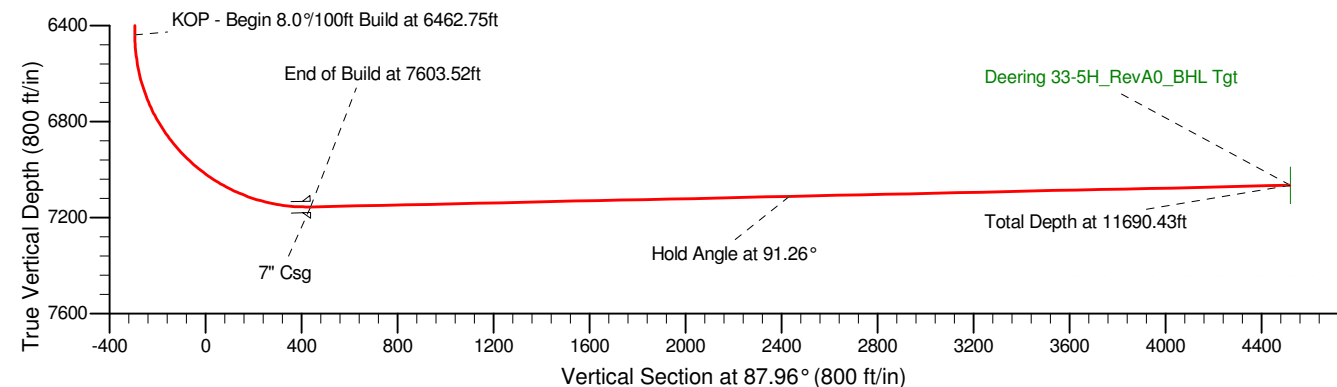
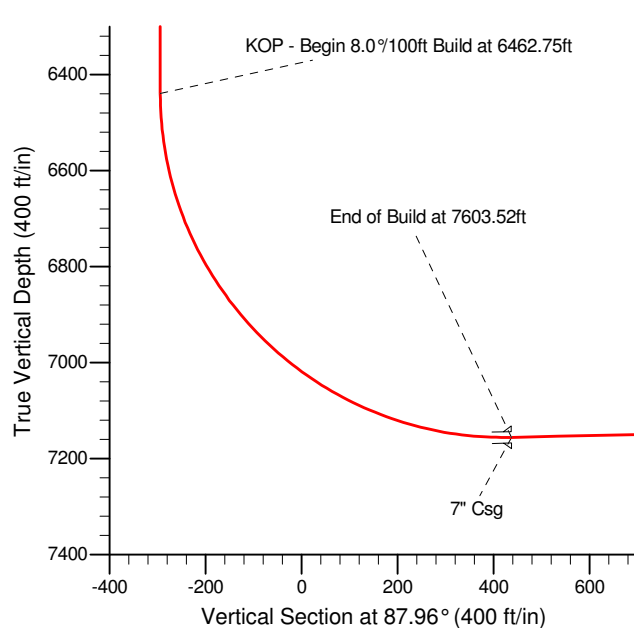
SECTION DETAILS

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	
2	1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	0.00	0.00	
3	1520.00	8.00	298.22	1518.96	10.55	-19.65	2.50	298.22	-19.27	
4	3645.87	8.00	298.22	3624.14	150.45	-280.35	0.00	0.00	-274.82	
5	3965.87	0.00	0.00	3943.10	161.00	-300.00	2.50	180.00	-294.09	
6	6462.75	0.00	0.00	6439.98	161.00	-300.00	0.00	0.00	-294.09	
7	7603.52	91.26	90.00	7156.00	160.95	431.97	8.00	90.00	437.42	
8	11690.43	91.26	90.00	7066.00	160.70	4517.89	0.00	0.00	4520.75	Deering 33-5H_RevA0_BHL Tgt



Azimuths to True North
 Magnetic North: 8.67°

Magnetic Field
 Strength: 52758.9snT
 Dip Angle: 66.84°
 Date: 7/24/2013
 Model: BGGM2013



WELL DETAILS: Deering 33-5H

Ground Level: 4904.00
 Northing 1341790.72 Easting 3166345.30 Latitude 40° 16' 12.288 N Longitude 104° 54' 13.932 W

Plan: Rev A0 (Permitting Plan Only) (Deering 33-5H/Plan A)

Created By: Jay Lantz Date: 13:22, July 25 2013

Approved: _____ Date: _____

K.P. Kauffman Company, Inc.

Weld County, CO (NAD 83)

Sec. 33-T4N-R67W (Deering 33H Pad)

Deering 33-5H

Plan A

Rev A0 (Permitting Plan Only)

Sperry Drilling Services **Ellipse Separation** **Anticollision Report**

25 July, 2013

Closest Approach 3D Proximity Scan on Current Survey Data (North Reference)

Reference Design: Sec. 33-T4N-R67W (Deering 33H Pad) - Deering 33-5H - Plan A - Rev A0 (Permitting Plan Only)

Well Coordinates: 1,341,790.72 N, 3,166,345.30 E (40° 16' 12.29" N, 104° 54' 13.93" W)

Datum Height: GL @ 4904.00ft (Ground Level)

Scan Range: 0.00 to 11,840.43 ft. Measured Depth.

Scan Radius is 9,999.99 ft. Clearance Factor cutoff is Unlimited. Max Ellipse Separation is Unlimited

Geodetic Scale Factor Applied

Version: 2003.16 Build: 43I

HALLIBURTON

Anticollision Report for Deering 33-5H - Rev A0 (Permitting Plan Only)

Closest Approach 3D Proximity Scan on Current Survey Data (North Reference)

Offset Design: Sec. 33-T4N-R67W (Deering 33H Pad) - Deering 33-9HX - Plan A - Rev A0 (Permitting Plan Only)

Scan Range: 0.00 to 11,840.43 ft. Measured Depth.

Scan Radius is 9,999.99 ft. Clearance Factor cutoff is Unlimited. Max Ellipse Separation is Unlimited

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	+E/-W (ft)	Ellipse Major Axis/2	Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	+E/-W (ft)	Ellipse Major Axis/2	Between Centres (ft)	Between Ellipsoids ft	Relative North Bearing	Clearance Factor
0.00	0.00	0.00	0.00	0.00	0.00	2.00	-80.15	0.00	0.00	80.17	79.51	180.00	122.127
200.00	200.00	0.00	0.00	0.34	198.00	200.00	-80.15	0.00	0.33	80.15	78.82	180.00	60.439
400.00	400.00	0.00	0.00	0.79	398.00	400.00	-80.15	0.00	0.78	80.15	77.92	180.00	36.018
600.00	600.00	0.00	0.00	1.24	598.00	600.00	-80.15	0.00	1.23	80.15	77.02	180.00	25.653
800.00	800.00	0.00	0.00	1.69	791.02	792.80	-87.91	-1.72	1.61	88.22	84.28	181.12	22.360
1,000.00	1,000.00	0.00	0.00	2.14	981.30	981.55	-111.04	-6.86	2.05	112.77	107.95	183.54	23.378
1,200.00	1,200.00	0.00	0.00	2.58	1,172.17	1,168.65	-147.74	-15.02	2.68	151.78	145.93	185.81	25.961
1,400.00	1,399.75	4.12	-7.68	3.02	1,367.06	1,359.28	-187.30	-23.81	3.45	196.31	189.74	184.82	29.857
1,600.00	1,598.18	15.81	-29.46	3.51	1,559.77	1,547.78	-226.41	-32.50	4.25	247.43	239.90	180.72	32.873
1,800.00	1,796.24	28.97	-53.99	4.06	1,751.93	1,735.74	-265.41	-41.17	5.08	300.81	292.25	177.51	35.155
2,000.00	1,994.29	42.14	-78.52	4.64	1,944.09	1,923.71	-304.41	-49.84	5.93	354.82	345.19	175.27	36.828
2,200.00	2,192.34	55.30	-103.04	5.25	2,136.25	2,111.67	-343.41	-58.50	6.78	409.22	398.48	173.63	38.089
2,400.00	2,390.40	68.46	-127.57	5.88	2,328.41	2,299.63	-382.41	-67.17	7.64	463.87	451.99	172.37	39.065
2,600.00	2,588.45	81.62	-152.09	6.52	2,520.57	2,487.59	-421.41	-75.84	8.50	518.68	505.66	171.38	39.837
2,800.00	2,786.50	94.79	-176.62	7.17	2,712.73	2,675.55	-460.41	-84.50	9.37	573.62	559.44	170.58	40.462
3,000.00	2,984.56	107.95	-201.14	7.83	2,904.89	2,863.51	-499.41	-93.17	10.24	628.65	613.31	169.92	40.975
3,200.00	3,182.61	121.11	-225.67	8.49	3,097.05	3,051.47	-538.41	-101.84	11.11	683.74	667.23	169.37	41.404
3,400.00	3,380.67	134.27	-250.20	9.16	3,301.99	3,252.02	-579.62	-110.99	12.00	738.63	720.91	168.97	41.696
3,600.00	3,578.72	147.43	-274.72	9.83	3,582.74	3,530.25	-614.96	-118.85	12.69	779.67	760.73	168.44	41.165
3,800.00	3,777.38	158.16	-294.71	10.36	3,829.99	3,777.38	-620.15	-120.00	13.03	797.68	777.70	167.35	39.928
4,000.00	3,977.23	161.00	-300.00	10.70	4,029.85	3,977.23	-620.15	-120.00	13.26	801.62	778.73	167.02	35.021
4,200.00	4,177.23	161.00	-300.00	11.06	4,229.85	4,177.23	-620.15	-120.00	13.51	801.62	778.08	167.02	34.064
4,400.00	4,377.23	161.00	-300.00	11.42	4,429.85	4,377.23	-620.15	-120.00	13.76	801.62	777.43	167.02	33.137
4,600.00	4,577.23	161.00	-300.00	11.79	4,629.85	4,577.23	-620.15	-120.00	14.02	801.62	776.75	167.02	32.241
4,800.00	4,777.23	161.00	-300.00	12.17	4,829.85	4,777.23	-620.15	-120.00	14.29	801.62	776.07	167.02	31.375
5,000.00	4,977.23	161.00	-300.00	12.55	5,029.85	4,977.23	-620.15	-120.00	14.57	801.62	775.37	167.02	30.541
5,200.00	5,177.23	161.00	-300.00	12.94	5,229.85	5,177.23	-620.15	-120.00	14.86	801.62	774.66	167.02	29.738
5,400.00	5,377.23	161.00	-300.00	13.33	5,429.85	5,377.23	-620.15	-120.00	15.16	801.62	773.94	167.02	28.964
5,600.00	5,577.23	161.00	-300.00	13.72	5,629.85	5,577.23	-620.15	-120.00	15.46	801.62	773.21	167.02	28.220
5,800.00	5,777.23	161.00	-300.00	14.12	5,829.85	5,777.23	-620.15	-120.00	15.77	801.62	772.47	167.02	27.505
6,000.00	5,977.23	161.00	-300.00	14.52	6,029.85	5,977.23	-620.15	-120.00	16.09	801.62	771.73	167.02	26.818
6,200.00	6,177.23	161.00	-300.00	14.92	6,229.85	6,177.23	-620.15	-120.00	16.41	801.62	770.97	167.02	26.157
6,400.00	6,377.23	161.00	-300.00	15.32	6,429.85	6,377.23	-620.15	-120.00	16.74	801.62	770.21	167.02	25.523
6,600.00	6,576.40	161.00	-286.89	15.64	6,675.61	6,621.08	-619.30	-142.74	17.21	794.76	764.01	169.53	25.844
6,800.00	6,764.91	161.00	-222.05	15.74	6,855.71	6,787.99	-616.84	-209.07	17.69	778.28	746.96	179.04	24.848
6,836.80	6,797.26	160.99	-204.52	15.76	6,876.05	6,805.65	-616.47	-219.14	17.76	777.64	746.12	181.08	24.668
7,000.00	6,928.25	160.99	-107.76	15.89	6,929.69	6,850.80	-615.39	-248.06	17.95	792.75	760.97	190.24	24.949
7,200.00	7,053.75	160.98	47.12	16.68	6,939.71	6,858.98	-615.18	-253.83	17.98	854.94	821.39	201.19	25.478
7,400.00	7,131.71	160.97	230.59	18.60	6,914.77	6,838.46	-615.70	-239.68	17.89	954.13	918.26	211.19	26.598
7,600.00	7,156.07	160.95	428.45	21.49	6,869.98	6,800.41	-616.58	-216.08	17.74	1,070.74	1,034.08	219.66	29.208
7,800.00	7,151.68	160.94	628.40	23.39	6,823.51	6,759.45	-617.39	-194.16	17.59	1,198.44	1,159.97	226.58	31.155
8,000.00	7,147.27	160.93	828.35	25.62	6,800.00	6,738.21	-617.77	-184.09	17.52	1,341.17	1,300.20	232.44	32.729
8,200.00	7,142.87	160.92	1,028.30	28.60	6,750.00	6,692.00	-618.47	-165.03	17.39	1,494.92	1,451.46	236.85	34.399
8,400.00	7,138.46	160.91	1,228.26	32.13	6,730.81	6,673.93	-618.71	-158.58	17.34	1,657.38	1,610.38	240.66	35.265
8,600.00	7,134.06	160.89	1,428.21	36.04	6,700.00	6,644.58	-619.06	-149.23	17.26	1,826.54	1,776.09	243.69	36.205
8,800.00	7,129.65	160.88	1,628.16	40.22	6,700.00	6,644.58	-619.06	-149.23	17.26	2,000.68	1,945.74	246.31	36.413
9,000.00	7,125.25	160.87	1,828.11	44.60	6,676.37	6,621.81	-619.29	-142.93	17.21	2,178.79	2,119.98	248.41	37.049
9,200.00	7,120.85	160.86	2,028.06	49.12	6,650.00	6,596.17	-619.52	-136.78	17.15	2,360.26	2,297.69	250.18	37.721
9,400.00	7,116.44	160.84	2,228.01	53.75	6,650.00	6,596.17	-619.52	-136.78	17.15	2,544.00	2,476.69	251.74	37.795
9,600.00	7,112.04	160.83	2,427.97	58.47	6,650.00	6,596.17	-619.52	-136.78	17.15	2,730.02	2,657.90	253.08	37.855

Anticollision Report for Deering 33-5H - Rev A0 (Permitting Plan Only)

Closest Approach 3D Proximity Scan on Current Survey Data (North Reference)

Offset Design: Sec. 33-T4N-R67W (Deering 33H Pad) - Deering 33-9HX - Plan A - Rev A0 (Permitting Plan Only)

Scan Range: 0.00 to 11,840.43 ft. Measured Depth.

Scan Radius is 9,999.99 ft. Clearance Factor cutoff is Unlimited. Max Ellipse Separation is Unlimited

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Between Centres (ft)	Between Ellipsoids ft	Relative North Bearing	Clearance Factor
9,800.00	7,107.63	160.82	2,627.92	63.24	6,650.00	6,596.17	-619.52	-136.78	17.15	2,917.89	2,840.92	254.24	37.907
10,000.00	7,103.23	160.81	2,827.87	68.07	6,623.53	6,570.22	-619.72	-131.57	17.09	3,106.70	3,026.06	255.23	38.528
10,200.00	7,098.82	160.79	3,027.82	72.94	6,600.00	6,547.00	-619.86	-127.74	17.04	3,297.19	3,212.86	256.10	39.097
10,400.00	7,094.42	160.78	3,227.77	77.84	6,600.00	6,547.00	-619.86	-127.74	17.04	3,488.34	3,399.18	256.90	39.126
10,600.00	7,090.01	160.77	3,427.72	82.76	6,600.00	6,547.00	-619.86	-127.74	17.04	3,680.43	3,586.43	257.62	39.153
10,800.00	7,085.61	160.76	3,627.67	87.71	6,600.00	6,547.00	-619.86	-127.74	17.04	3,873.32	3,774.45	258.26	39.179
11,000.00	7,081.20	160.74	3,827.63	92.68	6,600.00	6,547.00	-619.86	-127.74	17.04	4,066.89	3,963.15	258.84	39.203
11,200.00	7,076.80	160.73	4,027.58	97.66	6,600.00	6,547.00	-619.86	-127.74	17.04	4,261.06	4,152.43	259.36	39.227
11,400.00	7,072.40	160.72	4,227.53	102.66	6,600.00	6,547.00	-619.86	-127.74	17.04	4,455.75	4,342.22	259.84	39.249
11,600.00	7,067.99	160.71	4,427.48	107.67	6,600.00	6,547.00	-619.86	-127.74	17.04	4,650.88	4,532.45	260.28	39.270
11,800.00	7,063.59	160.69	4,627.43	112.69	6,576.20	6,523.41	-619.97	-124.64	17.00	4,845.97	4,724.30	260.67	39.830
11,840.43	7,062.70	160.69	4,667.85	113.71	6,575.49	6,522.70	-619.98	-124.56	17.00	4,885.52	4,762.92	260.75	39.850

Anticollision Report for Deering 33-5H - Rev A0 (Permitting Plan Only)

Closest Approach 3D Proximity Scan on Current Survey Data (North Reference)

Offset Design: Sec. 33-T4N-R67W (Deering 33H Pad) - Deering 33-4H - Plan A - Rev A0 (Permitting Plan Only)

Scan Range: 0.00 to 11,840.43 ft. Measured Depth.

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Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Between Centres (ft)	Between Ellipsoids ft	Relative North Bearing	Clearance Factor
0.00	0.00	0.00	0.00	0.00	0.00	0.00	21.85	0.00	0.00	21.85	21.20	359.99	33.287
200.00	200.00	0.00	0.00	0.34	200.00	200.00	21.85	0.00	0.34	21.85	20.52	359.99	16.423
400.00	400.00	0.00	0.00	0.79	400.00	400.00	21.85	0.00	0.79	21.85	19.62	359.99	9.801
600.00	600.00	0.00	0.00	1.24	600.00	600.00	21.85	0.00	1.24	21.85	18.72	359.99	6.984
800.00	800.00	0.00	0.00	1.69	800.00	800.00	21.85	0.00	1.69	21.85	17.82	359.99	5.425
1,000.00	1,000.00	0.00	0.00	2.14	1,000.00	1,000.00	21.85	0.00	2.14	21.85	16.92	359.99	4.435
1,200.00	1,200.00	0.00	0.00	2.58	1,197.84	1,197.60	29.36	-4.06	2.58	29.74	23.92	352.14	5.109
1,400.00	1,399.75	4.12	-7.68	3.02	1,393.75	1,391.82	51.55	-16.03	3.07	48.80	42.09	350.02	7.274
1,600.00	1,598.18	15.81	-29.46	3.51	1,592.63	1,587.67	81.93	-32.42	3.66	67.01	59.34	357.44	8.728
1,800.00	1,796.24	28.97	-53.99	4.06	1,791.71	1,783.73	112.36	-48.84	4.32	84.47	75.70	3.54	9.633
2,000.00	1,994.29	42.14	-78.52	4.64	1,990.79	1,979.78	142.78	-65.25	5.01	102.54	92.61	7.51	10.320
2,200.00	2,192.34	55.30	-103.04	5.25	2,189.86	2,175.84	173.20	-81.67	5.72	120.96	109.80	10.27	10.841
2,400.00	2,390.40	68.46	-127.57	5.88	2,388.94	2,371.89	203.63	-98.08	6.46	139.58	127.16	12.31	11.242
2,600.00	2,588.45	81.62	-152.09	6.52	2,588.02	2,567.94	234.05	-114.50	7.20	158.33	144.63	13.85	11.556
2,800.00	2,786.50	94.79	-176.62	7.17	2,787.10	2,764.00	264.47	-130.91	7.95	177.17	162.17	15.07	11.807
3,000.00	2,984.56	107.95	-201.14	7.83	2,986.18	2,960.05	294.90	-147.33	8.71	196.08	179.75	16.06	12.011
3,200.00	3,182.61	121.11	-225.67	8.49	3,185.26	3,156.11	325.32	-163.75	9.47	215.03	197.38	16.87	12.179
3,400.00	3,380.67	134.27	-250.20	9.16	3,384.34	3,352.16	355.75	-180.16	10.23	234.02	215.03	17.55	12.320
3,600.00	3,578.72	147.43	-274.72	9.83	3,583.41	3,548.22	386.17	-196.58	11.00	253.04	232.70	18.12	12.440
3,800.00	3,777.38	158.16	-294.71	10.36	3,782.34	3,744.12	416.57	-212.98	11.77	273.06	251.56	17.55	12.699
4,000.00	3,977.23	161.00	-300.00	10.70	3,980.03	3,938.81	446.78	-229.28	12.53	296.90	276.18	13.90	14.327
4,200.00	4,177.23	161.00	-300.00	11.06	4,176.99	4,132.78	476.88	-245.52	13.30	323.61	301.52	9.79	14.649
4,400.00	4,377.23	161.00	-300.00	11.42	4,373.96	4,326.75	506.98	-261.76	14.06	351.73	328.28	6.31	14.999
4,600.00	4,577.23	161.00	-300.00	11.79	4,570.92	4,520.71	537.08	-278.01	14.83	380.94	356.15	3.35	15.365
4,800.00	4,777.23	161.00	-300.00	12.17	4,792.01	4,739.24	566.32	-293.78	15.53	407.15	381.08	0.88	15.621
5,000.00	4,977.23	161.00	-300.00	12.55	5,029.19	4,975.95	577.84	-300.00	15.96	416.84	389.86	0.00	15.448
5,200.00	5,177.23	161.00	-300.00	12.94	5,230.47	5,177.23	577.85	-300.00	16.25	416.85	389.14	0.00	15.043
5,400.00	5,377.23	161.00	-300.00	13.33	5,430.47	5,377.23	577.85	-300.00	16.56	416.85	388.40	0.00	14.651
5,600.00	5,577.23	161.00	-300.00	13.72	5,630.47	5,577.23	577.85	-300.00	16.87	416.85	387.65	0.00	14.274
5,800.00	5,777.23	161.00	-300.00	14.12	5,830.47	5,777.23	577.85	-300.00	17.20	416.85	386.89	0.00	13.913
6,000.00	5,977.23	161.00	-300.00	14.52	6,030.47	5,977.23	577.85	-300.00	17.52	416.85	386.12	0.00	13.566
6,200.00	6,177.23	161.00	-300.00	14.92	6,230.47	6,177.23	577.85	-300.00	17.85	416.85	385.35	0.00	13.234
6,400.00	6,377.23	161.00	-300.00	15.32	6,430.47	6,377.23	577.85	-300.00	18.19	416.85	384.57	0.00	12.915
6,473.23	6,450.41	161.00	-297.43	15.44	6,503.64	6,450.41	577.85	-300.00	18.31	416.86	385.28	359.65	13.200
6,600.00	6,576.40	161.00	-286.89	15.64	6,630.35	6,577.11	577.84	-299.48	18.52	417.04	385.11	358.27	13.063
6,800.00	6,764.91	161.00	-222.05	15.74	6,837.92	6,780.49	577.30	-261.84	18.68	418.49	386.54	354.54	13.099
7,000.00	6,928.25	160.99	-107.76	15.89	7,054.97	6,972.33	575.85	-162.10	18.63	420.72	388.69	352.54	13.132
7,200.00	7,053.75	160.98	47.12	16.68	7,280.90	7,130.89	573.54	-2.49	18.51	422.63	389.46	353.14	12.740
7,400.00	7,131.71	160.97	230.59	18.60	7,513.61	7,234.14	570.54	204.91	19.01	422.96	386.52	356.41	11.604
7,600.00	7,156.07	160.95	428.45	21.49	7,746.26	7,266.00	567.21	434.34	22.18	420.91	378.98	0.83	10.039
7,800.00	7,151.68	160.94	628.40	23.39	7,946.19	7,266.00	564.32	634.25	24.07	419.30	374.05	0.83	9.266
8,000.00	7,147.27	160.93	828.35	25.62	8,146.12	7,266.00	561.42	834.16	26.42	417.76	368.25	0.83	8.439
8,200.00	7,142.87	160.92	1,028.30	28.60	8,346.05	7,266.00	558.52	1,034.07	29.43	416.28	361.12	0.83	7.547
8,400.00	7,138.46	160.91	1,228.26	32.13	8,545.98	7,266.00	555.63	1,233.97	32.96	414.85	353.07	0.83	6.715
8,600.00	7,134.06	160.89	1,428.21	36.04	8,745.91	7,266.00	552.73	1,433.88	36.85	413.50	344.43	0.83	5.987
8,800.00	7,129.65	160.88	1,628.16	40.22	8,945.84	7,266.00	549.84	1,633.79	41.02	412.20	335.41	0.83	5.368
9,000.00	7,125.25	160.87	1,828.11	44.60	9,145.77	7,266.00	546.94	1,833.70	45.38	410.97	326.18	0.83	4.847
9,200.00	7,120.85	160.86	2,028.06	49.12	9,345.70	7,266.00	544.04	2,033.61	49.90	409.80	316.83	0.83	4.408
9,400.00	7,116.44	160.84	2,228.01	53.75	9,545.63	7,266.00	541.15	2,233.52	54.52	408.69	307.43	0.83	4.036
9,600.00	7,112.04	160.83	2,427.97	58.47	9,745.56	7,266.00	538.25	2,433.43	59.22	407.65	298.06	0.83	3.720
9,800.00	7,107.63	160.82	2,627.92	63.24	9,945.49	7,266.00	535.36	2,633.34	63.99	406.68	288.73	0.83	3.448
10,000.00	7,103.23	160.81	2,827.87	68.07	10,145.42	7,266.00	532.46	2,833.25	68.81	405.77	279.49	0.83	3.213

Anticollision Report for Deering 33-5H - Rev A0 (Permitting Plan Only)

Closest Approach 3D Proximity Scan on Current Survey Data (North Reference)

Offset Design: Sec. 33-T4N-R67W (Deering 33H Pad) - Deering 33-4H - Plan A - Rev A0 (Permitting Plan Only)

Scan Range: 0.00 to 11,840.43 ft. Measured Depth.

Scan Radius is 9,999.99 ft. Clearance Factor cutoff is Unlimited. Max Ellipse Separation is Unlimited

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Between Centres (ft)	Between Ellipsoids ft	Relative North Bearing	Clearance Factor
10,200.00	7,098.82	160.79	3,027.82	72.94	10,345.35	7,266.00	529.56	3,033.16	73.67	404.93	270.36	0.83	3.009
10,400.00	7,094.42	160.78	3,227.77	77.84	10,545.29	7,266.00	526.67	3,233.07	78.57	404.15	261.35	0.83	2.830
10,468.07	7,092.92	160.78	3,295.83	79.51	10,613.33	7,266.00	525.68	3,301.11	80.24	403.90	258.32	0.83	2.774
10,600.00	7,090.01	160.77	3,427.72	82.76	10,739.95	7,266.00	525.17	3,427.72	83.36	404.67	253.72	0.00	2.681
10,800.00	7,085.61	160.76	3,627.67	87.71	10,939.90	7,266.00	525.17	3,627.67	88.31	406.61	247.35	0.00	2.553
11,000.00	7,081.20	160.74	3,827.63	92.68	11,139.85	7,266.00	525.17	3,827.63	93.28	408.60	241.08	0.00	2.439
11,200.00	7,076.80	160.73	4,027.58	97.66	11,339.80	7,266.00	525.17	4,027.58	98.26	410.62	234.90	0.00	2.337
11,400.00	7,072.40	160.72	4,227.53	102.66	11,549.96	7,266.00	524.04	4,237.73	103.51	411.81	227.88	1.61	2.239
11,600.00	7,067.99	160.71	4,427.48	107.67	11,758.34	7,266.00	514.03	4,445.86	108.72	405.44	214.45	2.98	2.123
11,800.00	7,063.59	160.69	4,627.43	112.69	11,958.02	7,266.00	503.66	4,645.27	113.73	398.64	201.10	2.98	2.018
11,832.92	7,062.86	160.69	4,660.34	113.52	11,977.61	7,266.00	502.64	4,664.83	114.23	397.76	199.30	0.75	2.004
11,840.43	7,062.70	160.69	4,667.85	113.71	11,977.61	7,266.00	502.64	4,664.83	114.23	397.83	199.21	359.49	2.003

Anticollision Report for Deering 33-5H - Rev A0 (Permitting Plan Only)

Closest Approach 3D Proximity Scan on Current Survey Data (North Reference)

Offset Design: Sec. 33-T4N-R67W (Deering 33H Pad) - Deering 33-8HX - Plan A - Rev A0 (Permitting Plan Only)

Scan Range: 0.00 to 11,840.43 ft. Measured Depth.

Scan Radius is 9,999.99 ft. Clearance Factor cutoff is Unlimited. Max Ellipse Separation is Unlimited

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Between Centres (ft)	Between Ellipsoids ft	Relative North Bearing	Clearance Factor
0.00	0.00	0.00	0.00	0.00	0.00	2.00	-58.29	0.00	0.00	58.33	57.67	180.00	88.854
200.00	200.00	0.00	0.00	0.34	198.00	200.00	-58.29	0.00	0.33	58.29	56.97	180.00	43.960
400.00	400.00	0.00	0.00	0.79	398.00	400.00	-58.29	0.00	0.78	58.29	56.07	180.00	26.198
600.00	600.00	0.00	0.00	1.24	598.00	600.00	-58.29	0.00	1.23	58.29	55.17	180.00	18.659
800.00	800.00	0.00	0.00	1.69	798.00	800.00	-58.29	0.00	1.68	58.29	54.27	180.00	14.489
1,000.00	1,000.00	0.00	0.00	2.14	992.93	994.70	-65.91	-2.81	2.06	66.18	61.34	182.44	13.661
1,200.00	1,200.00	0.00	0.00	2.58	1,186.02	1,186.22	-88.58	-11.19	2.48	90.34	84.64	187.20	15.837
1,400.00	1,399.75	4.12	-7.68	3.02	1,383.12	1,380.90	-117.51	-21.87	3.04	123.90	117.35	186.65	18.917
1,600.00	1,598.18	15.81	-29.46	3.51	1,578.58	1,573.95	-146.19	-32.46	3.66	163.83	156.36	181.06	21.916
1,800.00	1,796.24	28.97	-53.99	4.06	1,773.59	1,766.56	-174.81	-43.02	4.31	206.22	197.74	176.92	24.313
2,000.00	1,994.29	42.14	-78.52	4.64	1,968.61	1,959.17	-203.43	-53.59	4.99	249.31	239.78	174.20	26.146
2,200.00	2,192.34	55.30	-103.04	5.25	2,163.62	2,151.78	-232.05	-64.16	5.68	292.79	282.17	172.29	27.569
2,400.00	2,390.40	68.46	-127.57	5.88	2,358.63	2,344.39	-260.66	-74.72	6.38	336.50	324.77	170.88	28.697
2,600.00	2,588.45	81.62	-152.09	6.52	2,553.64	2,537.01	-289.28	-85.29	7.09	380.37	367.52	169.79	29.607
2,800.00	2,786.50	94.79	-176.62	7.17	2,748.66	2,729.62	-317.90	-95.86	7.80	424.35	410.37	168.93	30.355
3,000.00	2,984.56	107.95	-201.14	7.83	2,943.67	2,922.23	-346.52	-106.42	8.52	468.40	453.28	168.23	30.978
3,200.00	3,182.61	121.11	-225.67	8.49	3,167.54	3,144.04	-374.59	-116.79	9.19	508.98	492.70	167.61	31.276
3,400.00	3,380.67	134.27	-250.20	9.16	3,404.45	3,380.67	-383.29	-120.00	9.62	533.69	516.35	165.88	30.784
3,600.00	3,578.72	147.43	-274.72	9.83	3,602.50	3,578.72	-383.29	-120.00	9.90	552.82	534.54	163.75	30.234
3,800.00	3,777.38	158.16	-294.71	10.36	3,801.16	3,777.38	-383.29	-120.00	10.20	568.95	549.77	162.12	29.677
4,000.00	3,977.23	161.00	-300.00	10.70	4,001.02	3,977.23	-383.29	-120.00	10.51	573.28	553.02	161.70	28.296
4,200.00	4,177.23	161.00	-300.00	11.06	4,201.02	4,177.23	-383.29	-120.00	10.83	573.28	552.30	161.70	27.319
4,400.00	4,377.23	161.00	-300.00	11.42	4,401.02	4,377.23	-383.29	-120.00	11.16	573.28	551.56	161.70	26.391
4,600.00	4,577.23	161.00	-300.00	11.79	4,601.02	4,577.23	-383.29	-120.00	11.49	573.28	550.81	161.70	25.510
4,800.00	4,777.23	161.00	-300.00	12.17	4,801.02	4,777.23	-383.29	-120.00	11.84	573.28	550.05	161.70	24.675
5,000.00	4,977.23	161.00	-300.00	12.55	5,001.02	4,977.23	-383.29	-120.00	12.19	573.28	549.28	161.70	23.883
5,200.00	5,177.23	161.00	-300.00	12.94	5,201.02	5,177.23	-383.29	-120.00	12.55	573.28	548.50	161.70	23.132
5,400.00	5,377.23	161.00	-300.00	13.33	5,401.02	5,377.23	-383.29	-120.00	12.91	573.28	547.71	161.70	22.419
5,600.00	5,577.23	161.00	-300.00	13.72	5,601.02	5,577.23	-383.29	-120.00	13.28	573.28	546.92	161.70	21.744
5,800.00	5,777.23	161.00	-300.00	14.12	5,801.02	5,777.23	-383.29	-120.00	13.65	573.28	546.12	161.70	21.102
6,000.00	5,977.23	161.00	-300.00	14.52	6,001.02	5,977.23	-383.29	-120.00	14.03	573.28	545.31	161.70	20.493
6,200.00	6,177.23	161.00	-300.00	14.92	6,201.02	6,177.23	-383.29	-120.00	14.41	573.28	544.50	161.70	19.914
6,400.00	6,377.23	161.00	-300.00	15.32	6,401.02	6,377.23	-383.29	-120.00	14.80	573.28	543.68	161.70	19.364
6,600.00	6,576.40	161.00	-286.89	15.64	6,640.81	6,615.29	-382.89	-141.29	15.32	564.38	534.02	165.01	18.592
6,800.00	6,764.91	161.00	-222.05	15.74	6,817.50	6,779.75	-381.68	-204.64	15.88	543.16	512.04	178.16	17.456
6,830.47	6,791.76	160.99	-207.66	15.76	6,834.53	6,794.67	-381.52	-212.85	15.95	542.55	511.10	180.55	17.250
7,000.00	6,928.25	160.99	-107.76	15.89	6,892.08	6,843.56	-380.95	-243.17	16.19	564.98	533.23	194.03	17.800
7,200.00	7,053.75	160.98	47.12	16.68	6,900.00	6,850.10	-380.86	-247.64	16.23	649.58	616.12	208.55	19.415
7,400.00	7,131.71	160.97	230.59	18.60	6,880.03	6,833.53	-381.07	-236.49	16.14	775.17	740.25	220.75	22.200
7,600.00	7,156.07	160.95	428.45	21.49	6,836.46	6,796.34	-381.51	-213.80	15.96	914.42	881.01	229.81	27.375
7,800.00	7,151.68	160.94	628.40	23.39	6,800.00	6,764.22	-381.83	-196.58	15.82	1,060.81	1,026.00	236.66	30.467
8,000.00	7,147.27	160.93	828.35	25.62	6,750.00	6,718.81	-382.23	-175.66	15.65	1,219.28	1,183.23	241.59	33.819
8,200.00	7,142.87	160.92	1,028.30	28.60	6,724.62	6,695.24	-382.41	-166.27	15.57	1,386.57	1,348.10	245.54	36.041
8,400.00	7,138.46	160.91	1,228.26	32.13	6,700.00	6,672.06	-382.57	-157.96	15.49	1,560.29	1,519.07	248.59	37.855
8,600.00	7,134.06	160.89	1,428.21	36.04	6,679.14	6,652.21	-382.69	-151.55	15.43	1,738.76	1,694.49	251.01	39.278
8,800.00	7,129.65	160.88	1,628.16	40.22	6,650.00	6,624.19	-382.84	-143.57	15.35	1,920.97	1,873.90	252.94	40.809
9,000.00	7,125.25	160.87	1,828.11	44.60	6,650.00	6,624.19	-382.84	-143.57	15.35	2,105.75	2,054.65	254.58	41.203
9,200.00	7,120.85	160.86	2,028.06	49.12	6,650.00	6,624.19	-382.84	-143.57	15.35	2,293.09	2,237.84	255.94	41.508
9,400.00	7,116.44	160.84	2,228.01	53.75	6,621.45	6,596.45	-382.97	-136.86	15.27	2,481.68	2,423.62	257.05	42.745
9,600.00	7,112.04	160.83	2,427.97	58.47	6,600.00	6,575.43	-383.05	-132.54	15.22	2,672.07	2,610.94	258.01	43.709
9,800.00	7,107.63	160.82	2,627.92	63.24	6,600.00	6,575.43	-383.05	-132.54	15.22	2,863.42	2,798.13	258.85	43.858
10,000.00	7,103.23	160.81	2,827.87	68.07	6,600.00	6,575.43	-383.05	-132.54	15.22	3,055.88	2,986.40	259.59	43.983

Anticollision Report for Deering 33-5H - Rev A0 (Permitting Plan Only)

Closest Approach 3D Proximity Scan on Current Survey Data (North Reference)

Offset Design: Sec. 33-T4N-R67W (Deering 33H Pad) - Deering 33-8HX - Plan A - Rev A0 (Permitting Plan Only)

Scan Range: 0.00 to 11,840.43 ft. Measured Depth.

Scan Radius is 9,999.99 ft. Clearance Factor cutoff is Unlimited. Max Ellipse Separation is Unlimited

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Between Centres (ft)	Between Ellipsoids ft	Relative North Bearing	Clearance Factor
10,200.00	7,098.82	160.79	3,027.82	72.94	6,600.00	6,575.43	-383.05	-132.54	15.22	3,249.25	3,175.55	260.24	44.090
10,400.00	7,094.42	160.78	3,227.77	77.84	6,600.00	6,575.43	-383.05	-132.54	15.22	3,443.37	3,365.44	260.81	44.182
10,600.00	7,090.01	160.77	3,427.72	82.76	6,574.05	6,549.86	-383.14	-128.17	15.16	3,637.58	3,557.12	261.30	45.207
10,800.00	7,085.61	160.76	3,627.67	87.71	6,550.00	6,526.02	-383.20	-124.95	15.10	3,832.91	3,749.90	261.75	46.173
11,000.00	7,081.20	160.74	3,827.63	92.68	6,550.00	6,526.02	-383.20	-124.95	15.10	4,028.27	3,941.14	262.16	46.230
11,200.00	7,076.80	160.73	4,027.58	97.66	6,550.00	6,526.02	-383.20	-124.95	15.10	4,224.06	4,132.79	262.54	46.281
11,400.00	7,072.40	160.72	4,227.53	102.66	6,550.00	6,526.02	-383.20	-124.95	15.10	4,420.23	4,324.82	262.88	46.328
11,600.00	7,067.99	160.71	4,427.48	107.67	6,550.00	6,526.02	-383.20	-124.95	15.10	4,616.73	4,517.17	263.19	46.370
11,800.00	7,063.59	160.69	4,627.43	112.69	6,550.00	6,526.02	-383.20	-124.95	15.10	4,813.52	4,709.80	263.47	46.409
11,840.43	7,062.70	160.69	4,667.85	113.71	6,550.00	6,526.02	-383.20	-124.95	15.10	4,853.33	4,748.77	263.53	46.417

Anticollision Report for Deering 33-5H - Rev A0 (Permitting Plan Only)

Closest Approach 3D Proximity Scan on Current Survey Data (North Reference)

Offset Design: Sec. 33-T4N-R67W (Deering 33H Pad) - Deering 33-2H - Plan A - Rev A0 (Permitting Plan Only)

Scan Range: 0.00 to 11,840.43 ft. Measured Depth.

Scan Radius is 9,999.99 ft. Clearance Factor cutoff is Unlimited. Max Ellipse Separation is Unlimited

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Between Centres (ft)	Between Ellipsoids ft	Relative North Bearing	Clearance Factor
0.00	0.00	0.00	0.00	0.00	0.00	0.00	61.92	0.00	0.00	61.92	61.27	0.00	94.332
200.00	200.00	0.00	0.00	0.34	200.00	200.00	61.92	0.00	0.34	61.92	60.59	0.00	46.540
400.00	400.00	0.00	0.00	0.79	400.00	400.00	61.92	0.00	0.79	61.92	59.69	0.00	27.773
600.00	600.00	0.00	0.00	1.24	600.00	600.00	61.92	0.00	1.24	61.92	58.80	0.00	19.792
800.00	800.00	0.00	0.00	1.69	794.42	794.19	69.92	-2.00	1.68	70.19	66.17	358.36	17.466
1,000.00	1,000.00	0.00	0.00	2.14	986.09	984.26	93.40	-7.87	2.17	95.04	90.07	355.18	19.131
1,200.00	1,200.00	0.00	0.00	2.58	1,172.46	1,166.53	130.93	-17.25	2.82	136.23	130.18	352.49	22.493
1,400.00	1,399.75	4.12	-7.68	3.02	1,365.30	1,352.83	179.19	-29.32	3.67	182.53	175.75	352.95	26.947
1,600.00	1,598.18	15.81	-29.46	3.51	1,561.27	1,542.13	228.40	-41.62	4.61	220.19	212.41	356.73	28.307
1,800.00	1,796.24	28.97	-53.99	4.06	1,757.42	1,731.60	277.65	-53.93	5.58	256.94	248.04	0.01	28.890
2,000.00	1,994.29	42.14	-78.52	4.64	1,953.57	1,921.06	326.90	-66.25	6.58	294.28	284.21	2.47	29.211
2,200.00	2,192.34	55.30	-103.04	5.25	2,149.72	2,110.53	376.15	-78.56	7.59	332.02	320.72	4.36	29.370
2,400.00	2,390.40	68.46	-127.57	5.88	2,345.87	2,300.00	425.40	-90.87	8.61	370.04	357.46	5.87	29.436
2,600.00	2,588.45	81.62	-152.09	6.52	2,542.02	2,489.46	474.65	-103.19	9.64	408.24	394.38	7.09	29.447
2,800.00	2,786.50	94.79	-176.62	7.17	2,738.17	2,678.93	523.91	-115.50	10.67	446.60	431.42	8.11	29.426
3,000.00	2,984.56	107.95	-201.14	7.83	2,934.32	2,868.39	573.16	-127.81	11.70	485.07	468.56	8.96	29.387
3,200.00	3,182.61	121.11	-225.67	8.49	3,130.47	3,057.86	622.41	-140.12	12.73	523.62	505.78	9.68	29.339
3,400.00	3,380.67	134.27	-250.20	9.16	3,326.62	3,247.33	671.66	-152.44	13.76	562.25	543.05	10.31	29.286
3,600.00	3,578.72	147.43	-274.72	9.83	3,522.77	3,436.79	720.91	-164.75	14.80	600.93	580.37	10.86	29.231
3,800.00	3,777.38	158.16	-294.71	10.36	3,718.61	3,625.96	770.08	-177.04	15.84	641.27	619.49	10.88	29.447
4,000.00	3,977.23	161.00	-300.00	10.70	3,912.70	3,813.43	818.82	-189.23	16.86	686.90	661.29	9.56	26.830
4,200.00	4,177.23	161.00	-300.00	11.06	4,105.88	4,000.04	867.33	-201.35	17.89	734.86	707.74	7.95	27.088
4,400.00	4,377.23	161.00	-300.00	11.42	4,299.07	4,186.64	915.83	-213.48	18.91	783.32	754.67	6.54	27.342
4,600.00	4,577.23	161.00	-300.00	11.79	4,492.25	4,373.24	964.34	-225.61	19.94	832.17	802.00	5.29	27.589
4,800.00	4,777.23	161.00	-300.00	12.17	4,685.44	4,559.84	1,012.85	-237.73	20.96	881.35	849.68	4.18	27.829
5,000.00	4,977.23	161.00	-300.00	12.55	4,878.62	4,746.45	1,061.35	-249.86	21.99	930.81	897.64	3.19	28.059
5,200.00	5,177.23	161.00	-300.00	12.94	5,071.81	4,933.05	1,109.86	-261.99	23.01	980.51	945.84	2.29	28.279
5,400.00	5,377.23	161.00	-300.00	13.33	5,264.99	5,119.65	1,158.37	-274.11	24.04	1,030.42	994.25	1.49	28.489
5,600.00	5,577.23	161.00	-300.00	13.72	5,527.33	5,374.24	1,219.51	-289.40	25.20	1,077.85	1,040.03	0.57	28.499
5,800.00	5,777.23	161.00	-300.00	14.12	5,896.10	5,740.18	1,260.58	-299.67	26.08	1,100.21	1,061.04	0.02	28.091
6,000.00	5,977.23	161.00	-300.00	14.52	6,133.18	5,977.23	1,261.92	-300.00	26.33	1,100.92	1,061.07	0.00	27.627
6,200.00	6,177.23	161.00	-300.00	14.92	6,333.18	6,177.23	1,261.92	-300.00	26.54	1,100.92	1,060.43	0.00	27.187
6,400.00	6,377.23	161.00	-300.00	15.32	6,533.18	6,377.23	1,261.92	-300.00	26.76	1,100.92	1,059.78	0.00	26.757
6,600.00	6,576.40	161.00	-286.89	15.64	6,736.14	6,579.31	1,261.73	-286.32	26.94	1,100.74	1,067.28	0.03	32.900
6,800.00	6,764.91	161.00	-222.05	15.74	6,940.23	6,771.17	1,260.80	-218.83	26.95	1,099.83	1,066.16	0.17	32.664
7,000.00	6,928.25	160.99	-107.76	15.89	7,143.72	6,935.91	1,259.16	-100.54	26.87	1,098.22	1,064.11	0.38	32.190
7,200.00	7,053.75	160.98	47.12	16.68	7,346.36	7,060.44	1,256.96	58.44	26.81	1,096.06	1,060.26	0.59	30.614
7,400.00	7,131.71	160.97	230.59	18.60	7,547.94	7,135.39	1,254.38	244.83	26.96	1,093.51	1,053.99	0.75	27.667
7,600.00	7,156.07	160.95	428.45	21.49	7,748.35	7,155.75	1,251.63	443.55	27.80	1,090.78	1,045.70	0.79	24.201
7,800.00	7,151.68	160.94	628.40	23.39	7,948.33	7,151.33	1,248.86	643.46	29.25	1,088.02	1,039.43	0.79	22.390
8,000.00	7,147.27	160.93	828.35	25.62	8,148.32	7,146.92	1,246.09	843.37	30.86	1,085.26	1,032.19	0.79	20.449
8,200.00	7,142.87	160.92	1,028.30	28.60	8,348.30	7,142.51	1,243.32	1,043.29	33.13	1,082.51	1,023.48	0.79	18.340
8,400.00	7,138.46	160.91	1,228.26	32.13	8,548.28	7,138.10	1,240.55	1,243.20	36.03	1,079.75	1,013.70	0.79	16.347
8,600.00	7,134.06	160.89	1,428.21	36.04	8,748.26	7,133.68	1,237.78	1,443.11	39.44	1,076.99	1,003.15	0.79	14.585
8,800.00	7,129.65	160.88	1,628.16	40.22	8,948.24	7,129.27	1,235.02	1,643.03	43.23	1,074.24	992.06	0.79	13.072
9,000.00	7,125.25	160.87	1,828.11	44.60	9,148.22	7,124.86	1,232.25	1,842.94	47.30	1,071.48	980.57	0.79	11.786
9,200.00	7,120.85	160.86	2,028.06	49.12	9,348.20	7,120.44	1,229.48	2,042.85	51.58	1,068.73	968.79	0.79	10.694
9,400.00	7,116.44	160.84	2,228.01	53.75	9,548.18	7,116.03	1,226.71	2,242.77	56.02	1,065.97	956.79	0.79	9.764
9,600.00	7,112.04	160.83	2,427.97	58.47	9,748.16	7,111.62	1,223.94	2,442.68	60.57	1,063.21	944.63	0.79	8.966
9,800.00	7,107.63	160.82	2,627.92	63.24	9,948.14	7,107.21	1,221.17	2,642.59	65.21	1,060.46	932.34	0.79	8.277
10,000.00	7,103.23	160.81	2,827.87	68.07	10,148.13	7,102.79	1,218.40	2,842.51	69.93	1,057.70	919.94	0.79	7.678
10,200.00	7,098.82	160.79	3,027.82	72.94	10,348.11	7,098.38	1,215.64	3,042.42	74.70	1,054.94	907.46	0.79	7.153

Anticollision Report for Deering 33-5H - Rev A0 (Permitting Plan Only)

Closest Approach 3D Proximity Scan on Current Survey Data (North Reference)

Offset Design: Sec. 33-T4N-R67W (Deering 33H Pad) - Deering 33-2H - Plan A - Rev A0 (Permitting Plan Only)

Scan Range: 0.00 to 11,840.43 ft. Measured Depth.

Scan Radius is 9,999.99 ft. Clearance Factor cutoff is Unlimited. Max Ellipse Separation is Unlimited

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Between Centres (ft)	Between Ellipsoids ft	Relative North Bearing	Clearance Factor
10,400.00	7,094.42	160.78	3,227.77	77.84	10,548.09	7,093.97	1,212.87	3,242.33	79.52	1,052.19	894.91	0.79	6.690
10,600.00	7,090.01	160.77	3,427.72	82.76	10,748.07	7,089.55	1,210.10	3,442.24	84.38	1,049.43	882.31	0.79	6.280
10,800.00	7,085.61	160.76	3,627.67	87.71	10,948.05	7,085.14	1,207.33	3,642.16	89.26	1,046.67	869.67	0.79	5.913
11,000.00	7,081.20	160.74	3,827.63	92.68	11,148.03	7,080.73	1,204.56	3,842.07	94.18	1,043.92	856.98	0.79	5.584
11,200.00	7,076.80	160.73	4,027.58	97.66	11,348.01	7,076.32	1,201.79	4,041.98	99.12	1,041.16	844.26	0.79	5.288
11,400.00	7,072.40	160.72	4,227.53	102.66	11,547.99	7,071.90	1,199.02	4,241.90	104.07	1,038.40	831.52	0.79	5.019
11,600.00	7,067.99	160.71	4,427.48	107.67	11,747.97	7,067.49	1,196.26	4,441.81	109.04	1,035.65	818.75	0.79	4.775
11,800.00	7,063.59	160.69	4,627.43	112.69	11,947.95	7,063.08	1,193.49	4,641.72	114.03	1,032.89	805.95	0.79	4.551
11,832.48	7,062.87	160.69	4,659.90	113.51	11,966.19	7,062.68	1,193.23	4,659.96	114.48	1,032.54	804.34	0.00	4.525
11,840.43	7,062.70	160.69	4,667.85	113.71	11,966.19	7,062.68	1,193.23	4,659.96	114.48	1,032.57	804.17	359.56	4.521

Anticollision Report for Deering 33-5H - Rev A0 (Permitting Plan Only)

Closest Approach 3D Proximity Scan on Current Survey Data (North Reference)

Offset Design: Sec. 33-T4N-R67W (Deering 33H Pad) - Deering 33-7HX - Plan A - Rev A0 (Permitting Plan Only)

Scan Range: 0.00 to 11,840.43 ft. Measured Depth.

Scan Radius is 9,999.99 ft. Clearance Factor cutoff is Unlimited. Max Ellipse Separation is Unlimited

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Between Centres (ft)	Between Ellipsoids ft	Relative North Bearing	Clearance Factor
0.00	0.00	0.00	0.00	0.00	0.00	2.00	-40.08	0.00	0.00	40.13	39.48	180.00	61.136
200.00	200.00	0.00	0.00	0.34	198.00	200.00	-40.08	0.00	0.33	40.08	38.76	180.00	30.227
400.00	400.00	0.00	0.00	0.79	398.00	400.00	-40.08	0.00	0.78	40.08	37.86	180.00	18.014
600.00	600.00	0.00	0.00	1.24	598.00	600.00	-40.08	0.00	1.23	40.08	36.96	180.00	12.830
800.00	800.00	0.00	0.00	1.69	798.00	800.00	-40.08	0.00	1.68	40.08	36.06	180.00	9.963
1,000.00	1,000.00	0.00	0.00	2.14	998.00	1,000.00	-40.08	0.00	2.13	40.08	35.16	180.00	8.143
1,200.00	1,200.00	0.00	0.00	2.58	1,195.33	1,197.10	-45.41	-6.39	2.52	45.95	40.19	188.01	7.980
1,400.00	1,399.75	4.12	-7.68	3.02	1,393.66	1,394.38	-58.40	-21.98	2.95	64.36	57.76	192.88	9.741
1,600.00	1,598.18	15.81	-29.46	3.51	1,591.98	1,591.61	-71.67	-37.91	3.43	88.14	80.60	185.51	11.698
1,800.00	1,796.24	28.97	-53.99	4.06	1,790.04	1,788.59	-84.93	-53.81	3.94	114.16	105.62	179.91	13.363
2,000.00	1,994.29	42.14	-78.52	4.64	1,988.10	1,985.56	-98.18	-69.72	4.48	140.86	131.27	176.41	14.675
2,200.00	2,192.34	55.30	-103.04	5.25	2,186.15	2,182.53	-111.43	-85.62	5.03	167.93	157.24	174.04	15.718
2,400.00	2,390.40	68.46	-127.57	5.88	2,384.21	2,379.50	-124.69	-101.53	5.59	195.20	183.41	172.32	16.557
2,600.00	2,588.45	81.62	-152.09	6.52	2,586.85	2,581.21	-137.05	-116.36	6.12	221.69	208.82	170.72	17.223
2,800.00	2,786.50	94.79	-176.62	7.17	2,792.25	2,786.50	-140.08	-120.00	6.51	241.60	227.77	166.45	17.468
3,000.00	2,984.56	107.95	-201.14	7.83	2,990.31	2,984.56	-140.08	-120.00	6.88	260.97	246.22	161.88	17.701
3,200.00	3,182.61	121.11	-225.67	8.49	3,188.36	3,182.61	-140.08	-120.00	7.27	281.76	266.12	157.97	18.017
3,400.00	3,380.67	134.27	-250.20	9.16	3,386.41	3,380.67	-140.08	-120.00	7.65	303.68	287.16	154.61	18.378
3,600.00	3,578.72	147.43	-274.72	9.83	3,584.47	3,578.72	-140.08	-120.00	8.05	326.50	309.10	151.71	18.761
3,800.00	3,777.38	158.16	-294.71	10.36	3,783.13	3,777.38	-140.08	-120.00	8.45	345.65	327.42	149.64	18.961
4,000.00	3,977.23	161.00	-300.00	10.70	3,982.98	3,977.23	-140.08	-120.00	8.86	350.79	331.54	149.13	18.223
4,200.00	4,177.23	161.00	-300.00	11.06	4,182.98	4,177.23	-140.08	-120.00	9.27	350.79	330.73	149.13	17.494
4,400.00	4,377.23	161.00	-300.00	11.42	4,382.98	4,377.23	-140.08	-120.00	9.68	350.79	329.93	149.13	16.815
4,600.00	4,577.23	161.00	-300.00	11.79	4,582.98	4,577.23	-140.08	-120.00	10.10	350.79	329.11	149.13	16.182
4,800.00	4,777.23	161.00	-300.00	12.17	4,782.98	4,777.23	-140.08	-120.00	10.52	350.79	328.29	149.13	15.590
5,000.00	4,977.23	161.00	-300.00	12.55	4,982.98	4,977.23	-140.08	-120.00	10.95	350.79	327.46	149.13	15.037
5,200.00	5,177.23	161.00	-300.00	12.94	5,182.98	5,177.23	-140.08	-120.00	11.37	350.79	326.62	149.13	14.519
5,400.00	5,377.23	161.00	-300.00	13.33	5,382.98	5,377.23	-140.08	-120.00	11.80	350.79	325.79	149.13	14.032
5,600.00	5,577.23	161.00	-300.00	13.72	5,582.98	5,577.23	-140.08	-120.00	12.23	350.79	324.95	149.13	13.575
5,800.00	5,777.23	161.00	-300.00	14.12	5,782.98	5,777.23	-140.08	-120.00	12.66	350.79	324.10	149.13	13.145
6,000.00	5,977.23	161.00	-300.00	14.52	5,982.98	5,977.23	-140.08	-120.00	13.09	350.79	323.25	149.13	12.740
6,200.00	6,177.23	161.00	-300.00	14.92	6,182.98	6,177.23	-140.08	-120.00	13.52	350.79	322.40	149.13	12.358
6,400.00	6,377.23	161.00	-300.00	15.32	6,382.98	6,377.23	-140.08	-120.00	13.95	350.79	321.55	149.13	11.997
6,600.00	6,576.40	161.00	-286.89	15.64	6,620.53	6,613.11	-139.87	-140.75	14.52	336.49	306.50	154.09	11.217
6,800.00	6,764.91	161.00	-222.05	15.74	6,795.91	6,776.61	-139.23	-202.98	15.15	301.06	269.83	176.37	9.638
6,827.86	6,789.48	160.99	-208.93	15.76	6,811.55	6,790.35	-139.16	-210.44	15.22	300.16	268.44	180.29	9.462
7,000.00	6,928.25	160.99	-107.76	15.89	6,870.69	6,840.78	-138.84	-241.30	15.51	339.68	307.65	204.01	10.606
7,200.00	7,053.75	160.98	47.12	16.68	6,882.72	6,850.72	-138.77	-248.09	15.57	467.14	433.48	224.56	13.878
7,400.00	7,131.71	160.97	230.59	18.60	6,850.00	6,823.43	-138.96	-230.03	15.40	630.21	598.47	236.93	19.853
7,600.00	7,156.07	160.95	428.45	21.49	6,816.62	6,794.78	-139.13	-212.92	15.24	794.95	768.97	244.93	30.595
7,800.00	7,151.68	160.94	628.40	23.39	6,771.49	6,754.82	-139.35	-191.94	15.05	959.49	933.30	249.89	36.625
8,000.00	7,147.27	160.93	828.35	25.62	6,750.00	6,735.36	-139.44	-182.85	14.96	1,132.44	1,104.98	253.46	41.238
8,200.00	7,142.87	160.92	1,028.30	28.60	6,700.00	6,689.07	-139.63	-163.97	14.78	1,310.65	1,282.56	255.85	46.669
8,400.00	7,138.46	160.91	1,228.26	32.13	6,681.09	6,671.23	-139.70	-157.68	14.71	1,493.15	1,463.12	257.76	49.721
8,600.00	7,134.06	160.89	1,428.21	36.04	6,650.00	6,641.57	-139.79	-148.37	14.61	1,678.86	1,647.21	259.20	53.047
8,800.00	7,129.65	160.88	1,628.16	40.22	6,650.00	6,641.57	-139.79	-148.37	14.61	1,866.74	1,832.20	260.39	54.049
9,000.00	7,125.25	160.87	1,828.11	44.60	6,627.72	6,620.09	-139.85	-142.50	14.55	2,056.44	2,019.86	261.32	56.225
9,200.00	7,120.85	160.86	2,028.06	49.12	6,600.00	6,593.11	-139.92	-136.13	14.46	2,247.82	2,209.46	262.09	58.595
9,400.00	7,116.44	160.84	2,228.01	53.75	6,600.00	6,593.11	-139.92	-136.13	14.46	2,439.98	2,398.64	262.75	59.023
9,600.00	7,112.04	160.83	2,427.97	58.47	6,600.00	6,593.11	-139.92	-136.13	14.46	2,633.31	2,588.95	263.31	59.363
9,800.00	7,107.63	160.82	2,627.92	63.24	6,600.00	6,593.11	-139.92	-136.13	14.46	2,827.56	2,780.15	263.79	59.638
10,000.00	7,103.23	160.81	2,827.87	68.07	6,575.70	6,569.28	-139.97	-131.40	14.40	3,022.06	2,972.87	264.20	61.434

Anticollision Report for Deering 33-5H - Rev A0 (Permitting Plan Only)

Closest Approach 3D Proximity Scan on Current Survey Data (North Reference)

Offset Design: Sec. 33-T4N-R67W (Deering 33H Pad) - Deering 33-7HX - Plan A - Rev A0 (Permitting Plan Only)

Scan Range: 0.00 to 11,840.43 ft. Measured Depth.

Scan Radius is 9,999.99 ft . Clearance Factor cutoff is Unlimited. Max Ellipse Separation is Unlimited

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Between Centres (ft)	Between Ellipsoids ft	Relative North Bearing	Clearance Factor
10,200.00	7,098.82	160.79	3,027.82	72.94	6,550.00	6,543.91	-140.01	-127.29	14.33	3,217.63	3,166.79	264.55	63.285
10,400.00	7,094.42	160.78	3,227.77	77.84	6,550.00	6,543.91	-140.01	-127.29	14.33	3,413.21	3,359.40	264.88	63.429
10,600.00	7,090.01	160.77	3,427.72	82.76	6,550.00	6,543.91	-140.01	-127.29	14.33	3,609.27	3,552.48	265.16	63.553
10,800.00	7,085.61	160.76	3,627.67	87.71	6,550.00	6,543.91	-140.01	-127.29	14.33	3,805.74	3,745.96	265.42	63.659
11,000.00	7,081.20	160.74	3,827.63	92.68	6,550.00	6,543.91	-140.01	-127.29	14.33	4,002.56	3,939.78	265.65	63.752
11,200.00	7,076.80	160.73	4,027.58	97.66	6,550.00	6,543.91	-140.01	-127.29	14.33	4,199.68	4,133.89	265.86	63.834
11,400.00	7,072.40	160.72	4,227.53	102.66	6,550.00	6,543.91	-140.01	-127.29	14.33	4,397.07	4,328.26	266.05	63.906
11,600.00	7,067.99	160.71	4,427.48	107.67	6,550.00	6,543.91	-140.01	-127.29	14.33	4,594.67	4,522.85	266.22	63.970
11,800.00	7,063.59	160.69	4,627.43	112.69	6,550.00	6,543.91	-140.01	-127.29	14.33	4,792.48	4,717.63	266.38	64.028
11,840.43	7,062.70	160.69	4,667.85	113.71	6,528.20	6,522.28	-140.04	-124.52	14.28	4,832.11	4,758.24	266.41	65.417

Anticollision Report for Deering 33-5H - Rev A0 (Permitting Plan Only)

Closest Approach 3D Proximity Scan on Current Survey Data (North Reference)

Offset Design: Sec. 33-T4N-R67W (Deering 33H Pad) - Deering 33-3H - Plan A - Rev A0 (Permitting Plan Only)

Scan Range: 0.00 to 11,840.43 ft. Measured Depth.

Scan Radius is 9,999.99 ft. Clearance Factor cutoff is Unlimited. Max Ellipse Separation is Unlimited

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Between Centres (ft)	Between Ellipsoids ft	Relative North Bearing	Clearance Factor
0.00	0.00	0.00	0.00	0.00	1.00	0.00	40.07	0.00	0.00	40.07	39.42	0.00	60.940
200.00	200.00	0.00	0.00	0.34	201.00	200.00	40.07	0.00	0.34	40.07	38.74	0.00	30.067
400.00	400.00	0.00	0.00	0.79	401.00	400.00	40.07	0.00	0.79	40.07	37.84	0.00	17.955
600.00	600.00	0.00	0.00	1.24	601.00	600.00	40.07	0.00	1.24	40.07	36.94	0.00	12.799
733.00	733.00	0.00	0.00	1.54	734.00	733.00	40.07	0.00	1.54	40.07	36.34	0.00	10.747
800.00	800.00	0.00	0.00	1.69	800.98	799.98	40.07	0.00	1.69	40.07	36.04	0.00	9.944
1,000.00	1,000.00	0.00	0.00	2.14	997.24	996.00	48.10	-2.74	2.14	48.35	43.42	356.74	9.822
1,200.00	1,200.00	0.00	0.00	2.58	1,190.64	1,187.76	71.51	-10.72	2.62	73.34	67.47	351.48	12.500
1,400.00	1,399.75	4.12	-7.68	3.02	1,382.70	1,375.65	109.02	-23.51	3.25	108.79	102.05	351.42	16.154
1,600.00	1,598.18	15.81	-29.46	3.51	1,580.12	1,568.01	151.06	-37.84	4.02	138.82	131.11	356.46	17.990
1,800.00	1,796.24	28.97	-53.99	4.06	1,777.68	1,760.50	193.12	-52.18	4.86	168.00	159.18	0.63	19.058
2,000.00	1,994.29	42.14	-78.52	4.64	1,975.24	1,953.00	235.18	-66.52	5.72	197.78	187.79	3.56	19.805
2,200.00	2,192.34	55.30	-103.04	5.25	2,172.80	2,145.50	277.25	-80.86	6.61	227.92	216.71	5.71	20.333
2,400.00	2,390.40	68.46	-127.57	5.88	2,370.36	2,337.99	319.31	-95.20	7.51	258.30	245.83	7.35	20.714
2,600.00	2,588.45	81.62	-152.09	6.52	2,567.92	2,530.49	361.38	-109.54	8.41	288.85	275.09	8.65	20.995
2,800.00	2,786.50	94.79	-176.62	7.17	2,765.48	2,722.99	403.44	-123.88	9.33	319.51	304.44	9.70	21.206
3,000.00	2,984.56	107.95	-201.14	7.83	2,963.04	2,915.48	445.50	-138.22	10.25	350.25	333.86	10.56	21.369
3,200.00	3,182.61	121.11	-225.67	8.49	3,160.60	3,107.98	487.57	-152.56	11.17	381.06	363.34	11.28	21.497
3,400.00	3,380.67	134.27	-250.20	9.16	3,358.16	3,300.48	529.63	-166.90	12.10	411.92	392.85	11.90	21.599
3,600.00	3,578.72	147.43	-274.72	9.83	3,555.73	3,492.97	571.70	-181.24	13.02	442.82	422.40	12.43	21.681
3,800.00	3,777.38	158.16	-294.71	10.36	3,753.03	3,685.22	613.71	-195.56	13.95	475.23	453.62	12.28	21.985
4,000.00	3,977.23	161.00	-300.00	10.70	3,948.75	3,875.92	655.38	-209.76	14.87	512.66	489.23	10.34	21.886
4,200.00	4,177.23	161.00	-300.00	11.06	4,143.62	4,065.80	696.87	-223.91	15.79	552.60	527.72	8.08	22.211
4,400.00	4,377.23	161.00	-300.00	11.42	4,338.50	4,255.68	738.36	-238.05	16.71	593.26	566.94	6.12	22.536
4,600.00	4,577.23	161.00	-300.00	11.79	4,533.37	4,445.56	779.86	-252.20	17.63	634.51	606.75	4.42	22.857
4,800.00	4,777.23	161.00	-300.00	12.17	4,728.25	4,635.44	821.35	-266.34	18.55	676.24	647.05	2.92	23.170
5,000.00	4,977.23	161.00	-300.00	12.55	4,923.12	4,825.32	862.84	-280.49	19.47	718.36	687.75	1.59	23.472
5,200.00	5,177.23	161.00	-300.00	12.94	5,202.51	5,100.56	907.36	-295.67	20.37	750.30	718.29	0.33	23.441
5,400.00	5,377.23	161.00	-300.00	13.33	5,479.68	5,377.23	920.07	-300.00	20.82	759.07	726.16	0.00	23.063
5,600.00	5,577.23	161.00	-300.00	13.72	5,679.68	5,577.23	920.07	-300.00	21.06	759.07	725.49	0.00	22.601
5,800.00	5,777.23	161.00	-300.00	14.12	5,879.68	5,777.23	920.07	-300.00	21.31	759.07	724.80	0.00	22.151
6,000.00	5,977.23	161.00	-300.00	14.52	6,079.68	5,977.23	920.07	-300.00	21.57	759.07	724.11	0.00	21.713
6,200.00	6,177.23	161.00	-300.00	14.92	6,279.68	6,177.23	920.07	-300.00	21.84	759.07	723.41	0.00	21.287
6,400.00	6,377.23	161.00	-300.00	15.32	6,479.68	6,377.23	920.07	-300.00	22.11	759.07	722.71	0.00	20.874
6,600.00	6,576.40	161.00	-286.89	15.64	6,680.82	6,577.50	919.97	-286.48	22.32	758.97	726.38	0.03	23.291
6,800.00	6,764.91	161.00	-222.05	15.74	6,882.32	6,767.15	919.44	-220.40	22.34	758.45	725.64	0.13	23.115
7,000.00	6,928.25	160.99	-107.76	15.89	7,083.52	6,930.78	918.53	-104.46	22.26	757.55	724.28	0.25	22.772
7,200.00	7,053.75	160.98	47.12	16.68	7,284.35	7,055.66	917.29	51.97	22.20	756.33	721.37	0.37	21.635
7,400.00	7,131.71	160.97	230.59	18.60	7,484.72	7,132.25	915.83	236.42	22.42	754.89	716.18	0.44	19.505
7,600.00	7,156.07	160.95	428.45	21.49	7,684.64	7,154.95	914.27	434.38	23.93	753.33	709.00	0.45	16.991
7,800.00	7,151.68	160.94	628.40	23.39	7,884.63	7,150.54	912.68	634.32	25.73	751.77	704.03	0.45	15.750
8,000.00	7,147.27	160.93	828.35	25.62	8,084.62	7,146.13	911.10	834.26	27.87	750.20	697.88	0.45	14.340
8,200.00	7,142.87	160.92	1,028.30	28.60	8,284.62	7,141.72	909.52	1,034.20	30.68	748.63	690.26	0.45	12.825
8,400.00	7,138.46	160.91	1,228.26	32.13	8,484.61	7,137.31	907.94	1,234.14	34.03	747.06	681.57	0.45	11.407
8,600.00	7,134.06	160.89	1,428.21	36.04	8,684.60	7,132.90	906.36	1,434.08	37.80	745.49	672.13	0.45	10.162
8,800.00	7,129.65	160.88	1,628.16	40.22	8,884.60	7,128.49	904.78	1,634.02	41.86	743.92	662.16	0.45	9.098
9,000.00	7,125.25	160.87	1,828.11	44.60	9,084.59	7,124.08	903.20	1,833.96	46.14	742.35	651.80	0.45	8.198
9,200.00	7,120.85	160.86	2,028.06	49.12	9,284.59	7,119.67	901.62	2,033.89	50.59	740.79	641.16	0.45	7.436
9,400.00	7,116.44	160.84	2,228.01	53.75	9,484.58	7,115.26	900.04	2,233.83	55.15	739.22	630.32	0.45	6.788
9,600.00	7,112.04	160.83	2,427.97	58.47	9,684.57	7,110.85	898.46	2,433.77	59.81	737.65	619.31	0.45	6.233
9,800.00	7,107.63	160.82	2,627.92	63.24	9,884.57	7,106.44	896.87	2,633.71	64.54	736.08	608.17	0.45	5.755
10,000.00	7,103.23	160.81	2,827.87	68.07	10,084.56	7,102.03	895.29	2,833.65	69.33	734.51	596.94	0.45	5.339

Anticollision Report for Deering 33-5H - Rev A0 (Permitting Plan Only)

Closest Approach 3D Proximity Scan on Current Survey Data (North Reference)

Offset Design: Sec. 33-T4N-R67W (Deering 33H Pad) - Deering 33-3H - Plan A - Rev A0 (Permitting Plan Only)

Scan Range: 0.00 to 11,840.43 ft. Measured Depth.

Scan Radius is 9,999.99 ft. Clearance Factor cutoff is Unlimited. Max Ellipse Separation is Unlimited

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Between Centres (ft)	Between Ellipsoids ft	Relative North Bearing	Clearance Factor
10,200.00	7,098.82	160.79	3,027.82	72.94	10,284.56	7,097.62	893.71	3,033.59	74.16	732.94	585.63	0.45	4.975
10,400.00	7,094.42	160.78	3,227.77	77.84	10,484.55	7,093.21	892.13	3,233.53	79.03	731.37	574.25	0.45	4.655
10,600.00	7,090.01	160.77	3,427.72	82.76	10,684.54	7,088.79	890.55	3,433.47	83.94	729.81	562.83	0.45	4.371
10,800.00	7,085.61	160.76	3,627.67	87.71	10,884.54	7,084.38	888.97	3,633.41	88.86	728.24	551.35	0.45	4.117
11,000.00	7,081.20	160.74	3,827.63	92.68	11,084.53	7,079.97	887.39	3,833.34	93.81	726.67	539.84	0.45	3.890
11,200.00	7,076.80	160.73	4,027.58	97.66	11,284.52	7,075.56	885.81	4,033.28	98.78	725.10	528.30	0.45	3.684
11,400.00	7,072.40	160.72	4,227.53	102.66	11,484.52	7,071.15	884.23	4,233.22	103.76	723.53	516.73	0.45	3.499
11,600.00	7,067.99	160.71	4,427.48	107.67	11,684.51	7,066.74	882.65	4,433.16	108.76	721.96	505.14	0.45	3.330
11,800.00	7,063.59	160.69	4,627.43	112.69	11,884.51	7,062.33	881.06	4,633.10	113.77	720.39	493.53	0.45	3.175
11,834.65	7,062.82	160.69	4,662.08	113.56	11,913.55	7,061.69	880.83	4,662.14	114.50	720.14	491.68	0.00	3.152
11,840.43	7,062.70	160.69	4,667.85	113.71	11,913.55	7,061.69	880.83	4,662.14	114.50	720.17	491.55	359.55	3.150

Anticollision Report for Deering 33-5H - Rev A0 (Permitting Plan Only)

Closest Approach 3D Proximity Scan on Current Survey Data (North Reference)

Offset Design: Sec. 33-T4N-R67W (Deering 33H Pad) - Deering 33-1H - Plan A - Rev A0 (Permitting Plan Only)

Scan Range: 0.00 to 11,840.43 ft. Measured Depth.

Scan Radius is 9,999.99 ft. Clearance Factor cutoff is Unlimited. Max Ellipse Separation is Unlimited

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Between Centres (ft)	Between Ellipsoids ft	Relative North Bearing	Clearance Factor
0.00	0.00	0.00	0.00	0.00	1.00	0.00	80.14	0.00	0.00	80.14	79.48	0.00	121.876
200.00	200.00	0.00	0.00	0.34	201.00	200.00	80.14	0.00	0.34	80.14	78.81	0.00	60.131
400.00	400.00	0.00	0.00	0.79	401.00	400.00	80.14	0.00	0.79	80.14	77.91	0.00	35.908
465.38	465.38	0.00	0.00	0.93	466.38	465.38	80.14	0.00	0.94	80.14	77.62	0.00	31.730
600.00	600.00	0.00	0.00	1.24	597.61	596.58	82.17	-0.45	1.23	82.24	79.12	359.69	26.336
800.00	800.00	0.00	0.00	1.69	789.51	787.75	97.97	-3.96	1.69	98.81	94.78	357.69	24.510
1,000.00	1,000.00	0.00	0.00	2.14	977.43	972.99	128.51	-10.75	2.26	131.76	126.71	355.22	26.092
1,200.00	1,200.00	0.00	0.00	2.58	1,159.07	1,149.02	172.02	-20.42	3.01	180.57	174.33	353.23	28.961
1,400.00	1,399.75	4.12	-7.68	3.02	1,346.03	1,327.08	227.66	-32.78	4.00	236.39	229.58	353.59	34.726
1,600.00	1,598.18	15.81	-29.46	3.51	1,539.74	1,511.30	286.09	-45.77	5.11	284.37	276.54	356.55	36.315
1,800.00	1,796.24	28.97	-53.99	4.06	1,733.71	1,695.79	344.61	-58.77	6.25	331.27	322.30	359.13	36.962
2,000.00	1,994.29	42.14	-78.52	4.64	1,927.69	1,880.27	403.12	-71.77	7.42	378.63	368.47	1.07	37.273
2,200.00	2,192.34	55.30	-103.04	5.25	2,121.66	2,064.75	461.64	-84.78	8.59	426.29	414.89	2.57	37.391
2,400.00	2,390.40	68.46	-127.57	5.88	2,315.64	2,249.23	520.15	-97.78	9.77	474.17	461.49	3.77	37.399
2,600.00	2,588.45	81.62	-152.09	6.52	2,509.61	2,433.71	578.66	-110.78	10.96	522.21	508.23	4.75	37.348
2,800.00	2,786.50	94.79	-176.62	7.17	2,703.59	2,618.19	637.18	-123.78	12.15	570.36	555.06	5.56	37.266
3,000.00	2,984.56	107.95	-201.14	7.83	2,897.56	2,802.67	695.69	-136.79	13.34	618.60	601.96	6.25	37.168
3,200.00	3,182.61	121.11	-225.67	8.49	3,091.54	2,987.15	754.21	-149.79	14.53	666.91	648.92	6.83	37.063
3,400.00	3,380.67	134.27	-250.20	9.16	3,285.51	3,171.63	812.72	-162.79	15.73	715.28	695.93	7.34	36.958
3,600.00	3,578.72	147.43	-274.72	9.83	3,479.49	3,356.11	871.24	-175.80	16.93	763.69	742.97	7.78	36.856
3,800.00	3,777.38	158.16	-294.71	10.36	3,673.00	3,540.16	929.61	-188.77	18.12	814.02	792.05	7.82	37.048
4,000.00	3,977.23	161.00	-300.00	10.70	3,864.28	3,722.08	987.31	-201.59	19.30	870.39	842.15	6.79	30.822
4,200.00	4,177.23	161.00	-300.00	11.06	4,054.49	3,902.98	1,044.69	-214.34	20.48	929.23	899.33	5.54	31.077
4,400.00	4,377.23	161.00	-300.00	11.42	4,244.71	4,083.88	1,102.07	-227.09	21.66	988.43	956.87	4.43	31.321
4,600.00	4,577.23	161.00	-300.00	11.79	4,434.92	4,264.78	1,159.45	-239.84	22.83	1,047.92	1,014.72	3.45	31.555
4,800.00	4,777.23	161.00	-300.00	12.17	4,625.13	4,445.68	1,216.83	-252.60	24.01	1,107.68	1,072.82	2.57	31.778
5,000.00	4,977.23	161.00	-300.00	12.55	4,815.34	4,626.59	1,274.21	-265.35	25.19	1,167.64	1,131.14	1.78	31.990
5,200.00	5,177.23	161.00	-300.00	12.94	5,045.16	4,845.53	1,342.36	-280.49	26.50	1,227.20	1,188.91	0.95	32.048
5,400.00	5,377.23	161.00	-300.00	13.33	5,463.71	5,256.00	1,419.31	-297.59	27.88	1,264.14	1,223.99	0.11	31.484
5,600.00	5,577.23	161.00	-300.00	13.72	5,785.31	5,577.23	1,430.14	-300.00	28.30	1,269.14	1,228.13	0.00	30.949
5,800.00	5,777.23	161.00	-300.00	14.12	5,985.31	5,777.23	1,430.14	-300.00	28.48	1,269.14	1,227.53	0.00	30.496
6,000.00	5,977.23	161.00	-300.00	14.52	6,185.31	5,977.23	1,430.14	-300.00	28.67	1,269.14	1,226.91	0.00	30.051
6,200.00	6,177.23	161.00	-300.00	14.92	6,385.31	6,177.23	1,430.14	-300.00	28.86	1,269.14	1,226.28	0.00	29.613
6,400.00	6,377.23	161.00	-300.00	15.32	6,585.31	6,377.23	1,430.14	-300.00	29.06	1,269.14	1,225.65	0.00	29.183
6,600.00	6,576.40	161.00	-286.89	15.64	6,789.75	6,580.73	1,429.89	-285.83	29.22	1,268.90	1,235.07	0.05	37.506
6,800.00	6,764.91	161.00	-222.05	15.74	6,995.73	6,774.05	1,428.66	-216.80	29.23	1,267.71	1,233.67	0.24	37.238
7,000.00	6,928.25	160.99	-107.76	15.89	7,200.75	6,939.14	1,426.52	-96.45	29.14	1,265.63	1,231.14	0.51	36.690
7,200.00	7,053.75	160.98	47.12	16.68	7,404.39	7,062.86	1,423.67	64.42	29.09	1,262.84	1,226.63	0.78	34.880
7,400.00	7,131.71	160.97	230.59	18.60	7,606.41	7,136.11	1,420.33	251.94	29.21	1,259.56	1,219.61	0.97	31.529
7,600.00	7,156.07	160.95	428.45	21.49	7,806.71	7,154.59	1,416.80	450.73	30.22	1,256.05	1,210.62	1.02	27.651
7,800.00	7,151.68	160.94	628.40	23.39	8,006.68	7,150.17	1,413.25	650.62	31.09	1,252.51	1,203.75	1.02	25.689
8,000.00	7,147.27	160.93	828.35	25.62	8,206.65	7,145.76	1,409.70	850.51	32.48	1,248.97	1,195.63	1.02	23.415
8,200.00	7,142.87	160.92	1,028.30	28.60	8,406.62	7,141.35	1,406.15	1,050.40	34.52	1,245.43	1,186.05	1.02	20.976
8,400.00	7,138.46	160.91	1,228.26	32.13	8,606.59	7,136.94	1,402.59	1,250.29	37.23	1,241.89	1,175.43	1.02	18.686
8,600.00	7,134.06	160.89	1,428.21	36.04	8,806.56	7,132.53	1,399.04	1,450.17	40.50	1,238.35	1,164.05	1.02	16.668
8,800.00	7,129.65	160.88	1,628.16	40.22	9,006.52	7,128.11	1,395.49	1,650.06	44.20	1,234.81	1,152.14	1.02	14.937
9,000.00	7,125.25	160.87	1,828.11	44.60	9,206.49	7,123.70	1,391.94	1,849.95	48.20	1,231.27	1,139.85	1.02	13.468
9,200.00	7,120.85	160.86	2,028.06	49.12	9,406.46	7,119.29	1,388.39	2,049.84	52.44	1,227.73	1,127.26	1.02	12.221
9,400.00	7,116.44	160.84	2,228.01	53.75	9,606.43	7,114.88	1,384.84	2,249.73	56.84	1,224.19	1,114.47	1.02	11.158
9,600.00	7,112.04	160.83	2,427.97	58.47	9,806.40	7,110.46	1,381.28	2,449.62	61.36	1,220.65	1,101.51	1.02	10.246
9,800.00	7,107.63	160.82	2,627.92	63.24	10,006.37	7,106.05	1,377.73	2,649.51	65.99	1,217.11	1,088.43	1.02	9.458
10,000.00	7,103.23	160.81	2,827.87	68.07	10,206.34	7,101.64	1,374.18	2,849.39	70.68	1,213.57	1,075.24	1.02	8.773

Anticollision Report for Deering 33-5H - Rev A0 (Permitting Plan Only)

Closest Approach 3D Proximity Scan on Current Survey Data (North Reference)

Offset Design: Sec. 33-T4N-R67W (Deering 33H Pad) - Deering 33-1H - Plan A - Rev A0 (Permitting Plan Only)

Scan Range: 0.00 to 11,840.43 ft. Measured Depth.

Scan Radius is 9,999.99 ft . Clearance Factor cutoff is Unlimited. Max Ellipse Separation is Unlimited

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Between Centres (ft)	Between Ellipsoids ft	Relative North Bearing	Clearance Factor
10,200.00	7,098.82	160.79	3,027.82	72.94	10,406.30	7,097.23	1,370.63	3,049.28	75.44	1,210.03	1,061.97	1.02	8.173
10,400.00	7,094.42	160.78	3,227.77	77.84	10,606.27	7,092.82	1,367.08	3,249.17	80.25	1,206.49	1,048.64	1.02	7.643
10,600.00	7,090.01	160.77	3,427.72	82.76	10,806.24	7,088.40	1,363.52	3,449.06	85.10	1,202.95	1,035.25	1.02	7.173
10,800.00	7,085.61	160.76	3,627.67	87.71	11,006.21	7,083.99	1,359.97	3,648.95	89.97	1,199.41	1,021.81	1.02	6.754
11,000.00	7,081.20	160.74	3,827.63	92.68	11,206.18	7,079.58	1,356.42	3,848.84	94.88	1,195.87	1,008.34	1.02	6.377
11,200.00	7,076.80	160.73	4,027.58	97.66	11,406.15	7,075.17	1,352.87	4,048.72	99.81	1,192.33	994.83	1.02	6.037
11,400.00	7,072.40	160.72	4,227.53	102.66	11,606.12	7,070.75	1,349.32	4,248.61	104.76	1,188.79	981.30	1.02	5.729
11,600.00	7,067.99	160.71	4,427.48	107.67	11,806.09	7,066.34	1,345.77	4,448.50	109.73	1,185.25	967.74	1.02	5.449
11,800.00	7,063.59	160.69	4,627.43	112.69	12,006.05	7,061.93	1,342.21	4,648.39	114.71	1,181.71	954.17	1.02	5.193
11,832.37	7,062.87	160.69	4,659.79	113.50	12,017.51	7,061.68	1,342.01	4,659.84	114.99	1,181.32	952.68	0.00	5.167
11,840.43	7,062.70	160.69	4,667.85	113.71	12,017.51	7,061.68	1,342.01	4,659.84	114.99	1,181.35	952.51	359.61	5.162

Anticollision Report for Deering 33-5H - Rev A0 (Permitting Plan Only)

Closest Approach 3D Proximity Scan on Current Survey Data (North Reference)

Offset Design: Sec. 33-T4N-R67W (Deering 33H Pad) - Deering 33-6HX - Plan A - Rev A0 (Permitting Plan Only)

Scan Range: 0.00 to 11,840.43 ft. Measured Depth.

Scan Radius is 9,999.99 ft. Clearance Factor cutoff is Unlimited. Max Ellipse Separation is Unlimited

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Between Centres (ft)	Between Ellipsoids ft	Relative North Bearing	Clearance Factor
0.00	0.00	0.00	0.00	0.00	0.00	1.00	-18.22	0.00	0.00	18.25	17.59	180.01	27.799
200.00	200.00	0.00	0.00	0.34	199.00	200.00	-18.22	0.00	0.33	18.22	16.89	180.01	13.718
400.00	400.00	0.00	0.00	0.79	399.00	400.00	-18.22	0.00	0.78	18.22	15.99	180.01	8.181
600.00	600.00	0.00	0.00	1.24	599.00	600.00	-18.22	0.00	1.23	18.22	15.09	180.01	5.828
800.00	800.00	0.00	0.00	1.69	799.00	800.00	-18.22	0.00	1.68	18.22	14.20	180.01	4.526
1,000.00	1,000.00	0.00	0.00	2.14	999.00	1,000.00	-18.22	0.00	2.13	18.22	13.30	180.01	3.700
1,200.00	1,200.00	0.00	0.00	2.58	1,199.00	1,200.00	-18.22	0.00	2.58	18.22	12.40	180.01	3.129
1,400.00	1,399.75	4.12	-7.68	3.02	1,398.75	1,399.75	-18.22	0.00	3.03	23.63	16.93	161.03	3.526
1,600.00	1,598.18	15.81	-29.46	3.51	1,597.18	1,598.18	-18.22	0.00	3.48	45.01	37.45	139.12	5.954
1,800.00	1,796.24	28.97	-53.99	4.06	1,795.24	1,796.24	-18.22	0.00	3.92	71.71	63.26	131.16	8.492
2,000.00	1,994.29	42.14	-78.52	4.64	1,993.29	1,994.29	-18.22	0.00	4.37	99.03	89.69	127.55	10.604
2,200.00	2,192.34	55.30	-103.04	5.25	2,191.34	2,192.34	-18.22	0.00	4.81	126.58	116.34	125.51	12.359
2,400.00	2,390.40	68.46	-127.57	5.88	2,389.40	2,390.40	-18.22	0.00	5.26	154.23	143.08	124.20	13.833
2,600.00	2,588.45	81.62	-152.09	6.52	2,587.45	2,588.45	-18.22	0.00	5.70	181.94	169.87	123.28	15.085
2,800.00	2,786.50	94.79	-176.62	7.17	2,785.50	2,786.50	-18.22	0.00	6.15	209.68	196.70	122.61	16.159
3,000.00	2,984.56	107.95	-201.14	7.83	2,983.56	2,984.56	-18.22	0.00	6.59	237.44	223.55	122.10	17.090
3,200.00	3,182.61	121.11	-225.67	8.49	3,181.61	3,182.61	-18.22	0.00	7.04	265.22	250.40	121.69	17.905
3,400.00	3,380.67	134.27	-250.20	9.16	3,379.67	3,380.67	-18.22	0.00	7.48	293.00	277.27	121.36	18.623
3,600.00	3,578.72	147.43	-274.72	9.83	3,577.72	3,578.72	-18.22	0.00	7.93	320.80	304.14	121.09	19.261
3,800.00	3,777.38	158.16	-294.71	10.36	3,776.38	3,777.38	-18.22	0.00	8.38	343.46	325.89	120.90	19.548
4,000.00	3,977.23	161.00	-300.00	10.70	3,976.23	3,977.23	-18.22	0.00	8.82	349.45	329.29	120.85	17.327
4,200.00	4,177.23	161.00	-300.00	11.06	4,176.23	4,177.23	-18.22	0.00	9.27	349.45	328.48	120.85	16.659
4,400.00	4,377.23	161.00	-300.00	11.42	4,376.23	4,377.23	-18.22	0.00	9.72	349.45	327.66	120.85	16.037
4,600.00	4,577.23	161.00	-300.00	11.79	4,576.23	4,577.23	-18.22	0.00	10.17	349.45	326.84	120.85	15.455
4,800.00	4,777.23	161.00	-300.00	12.17	4,776.23	4,777.23	-18.22	0.00	10.62	349.45	326.02	120.85	14.910
5,000.00	4,977.23	161.00	-300.00	12.55	4,976.23	4,977.23	-18.22	0.00	11.07	349.45	325.19	120.85	14.400
5,200.00	5,177.23	161.00	-300.00	12.94	5,176.23	5,177.23	-18.22	0.00	11.52	349.45	324.35	120.85	13.921
5,400.00	5,377.23	161.00	-300.00	13.33	5,376.23	5,377.23	-18.22	0.00	11.97	349.45	323.51	120.85	13.471
5,600.00	5,577.23	161.00	-300.00	13.72	5,576.23	5,577.23	-18.22	0.00	12.42	349.45	322.67	120.85	13.047
5,800.00	5,777.23	161.00	-300.00	14.12	5,776.23	5,777.23	-18.22	0.00	12.87	349.45	321.83	120.85	12.648
6,000.00	5,977.23	161.00	-300.00	14.52	5,976.23	5,977.23	-18.22	0.00	13.32	349.45	320.98	120.85	12.271
6,200.00	6,177.23	161.00	-300.00	14.92	6,176.23	6,177.23	-18.22	0.00	13.77	349.45	320.12	120.85	11.914
6,400.00	6,377.23	161.00	-300.00	15.32	6,398.43	6,399.37	-18.22	-2.26	14.25	348.23	318.01	121.04	11.523
6,600.00	6,576.40	161.00	-286.89	15.64	6,681.85	6,672.79	-18.22	-71.30	14.90	296.46	266.79	129.74	9.990
6,800.00	6,764.91	161.00	-222.05	15.74	6,845.53	6,814.56	-18.22	-152.56	15.48	198.53	167.22	158.81	6.341
6,892.47	6,844.38	160.99	-174.90	15.81	6,882.79	6,844.38	-18.22	-174.91	15.66	179.21	147.04	180.00	5.570
7,000.00	6,928.25	160.99	-107.76	15.89	6,904.47	6,861.25	-18.22	-188.53	15.77	207.67	175.30	204.26	6.415
7,200.00	7,053.75	160.98	47.12	16.68	6,900.00	6,857.80	-18.22	-185.68	15.74	353.14	320.20	232.41	10.722
7,400.00	7,131.71	160.97	230.59	18.60	6,867.48	6,832.25	-18.22	-165.56	15.59	527.94	501.52	245.66	19.982
7,600.00	7,156.07	160.95	428.45	21.49	6,812.61	6,787.41	-18.22	-133.97	15.35	695.94	677.04	252.33	36.824
7,800.00	7,151.68	160.94	628.40	23.39	6,750.00	6,733.78	-18.22	-101.68	15.11	860.09	841.57	256.21	46.447
8,000.00	7,147.27	160.93	828.35	25.62	6,700.00	6,689.28	-18.22	-78.89	14.96	1,031.96	1,013.28	258.83	55.248
8,200.00	7,142.87	160.92	1,028.30	28.60	6,673.83	6,665.46	-18.22	-68.06	14.88	1,209.15	1,189.43	260.72	61.328
8,400.00	7,138.46	160.91	1,228.26	32.13	6,650.00	6,643.48	-18.22	-58.87	14.82	1,390.61	1,369.60	262.08	66.186
8,600.00	7,134.06	160.89	1,428.21	36.04	6,600.00	6,596.53	-18.22	-41.68	14.69	1,575.30	1,553.49	263.05	72.204
8,800.00	7,129.65	160.88	1,628.16	40.22	6,600.00	6,596.53	-18.22	-41.68	14.69	1,762.00	1,738.16	263.88	73.885
9,000.00	7,125.25	160.87	1,828.11	44.60	6,574.13	6,571.86	-18.22	-33.92	14.63	1,950.76	1,925.45	264.51	77.073
9,200.00	7,120.85	160.86	2,028.06	49.12	6,550.00	6,548.63	-18.22	-27.39	14.57	2,141.11	2,114.29	265.02	79.806
9,400.00	7,116.44	160.84	2,228.01	53.75	6,550.00	6,548.63	-18.22	-27.39	14.57	2,332.66	2,303.70	265.46	80.554
9,600.00	7,112.04	160.83	2,427.97	58.47	6,529.09	6,528.35	-18.22	-22.28	14.53	2,525.17	2,494.61	265.82	82.647
9,800.00	7,107.63	160.82	2,627.92	63.24	6,500.00	6,499.94	-18.22	-16.04	14.46	2,718.80	2,686.88	266.13	85.160
10,000.00	7,103.23	160.81	2,827.87	68.07	6,500.00	6,499.94	-18.22	-16.04	14.46	2,912.71	2,878.65	266.40	85.539

Anticollision Report for Deering 33-5H - Rev A0 (Permitting Plan Only)

Closest Approach 3D Proximity Scan on Current Survey Data (North Reference)

Offset Design: Sec. 33-T4N-R67W (Deering 33H Pad) - Deering 33-6HX - Plan A - Rev A0 (Permitting Plan Only)

Scan Range: 0.00 to 11,840.43 ft. Measured Depth.

Scan Radius is 9,999.99 ft. Clearance Factor cutoff is Unlimited. Max Ellipse Separation is Unlimited

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre +N/-S (ft)	Ellipse Centre +E/-W (ft)	Ellipse Major Axis/2	Between Centres (ft)	Between Ellipsoids ft	Relative North Bearing	Clearance Factor
10,200.00	7,098.82	160.79	3,027.82	72.94	6,500.00	6,499.94	-18.22	-16.04	14.46	3,107.38	3,071.19	266.63	85.858
10,400.00	7,094.42	160.78	3,227.77	77.84	6,500.00	6,499.94	-18.22	-16.04	14.46	3,302.69	3,264.35	266.84	86.132
10,600.00	7,090.01	160.77	3,427.72	82.76	6,500.00	6,499.94	-18.22	-16.04	14.46	3,498.54	3,458.03	267.02	86.368
10,800.00	7,085.61	160.76	3,627.67	87.71	6,473.91	6,474.28	-18.22	-11.31	14.41	3,694.32	3,652.48	267.18	88.297
11,000.00	7,081.20	160.74	3,827.63	92.68	6,450.00	6,450.65	-18.22	-7.70	14.36	3,890.93	3,847.70	267.33	90.007
11,200.00	7,076.80	160.73	4,027.58	97.66	6,450.00	6,450.65	-18.22	-7.70	14.36	4,087.48	4,042.14	267.46	90.148
11,400.00	7,072.40	160.72	4,227.53	102.66	6,450.00	6,450.65	-18.22	-7.70	14.36	4,284.36	4,236.90	267.58	90.274
11,600.00	7,067.99	160.71	4,427.48	107.67	6,450.00	6,450.65	-18.22	-7.70	14.36	4,481.51	4,431.93	267.69	90.387
11,800.00	7,063.59	160.69	4,627.43	112.69	6,450.00	6,450.65	-18.22	-7.70	14.36	4,678.90	4,627.20	267.79	90.490
11,840.43	7,062.70	160.69	4,667.85	113.71	6,450.00	6,450.65	-18.22	-7.70	14.36	4,718.83	4,666.70	267.81	90.509

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	7,603.52	Rev A0 (Permitting Plan Only)	MWD
7,603.52	11,840.43	Rev A0 (Permitting Plan Only)	MWD

Ellipse error terms are correlated across survey tool tie-on points.

Calculated ellipses incorporate surface errors.

Separation is the actual distance between ellipsoids.

Distance Between centres is the straight line distance between wellbore centres.

Clearance Factor = Distance Between Profiles / (Distance Between Profiles - Ellipse Separation).

All station coordinates were calculated using the Minimum Curvature method.

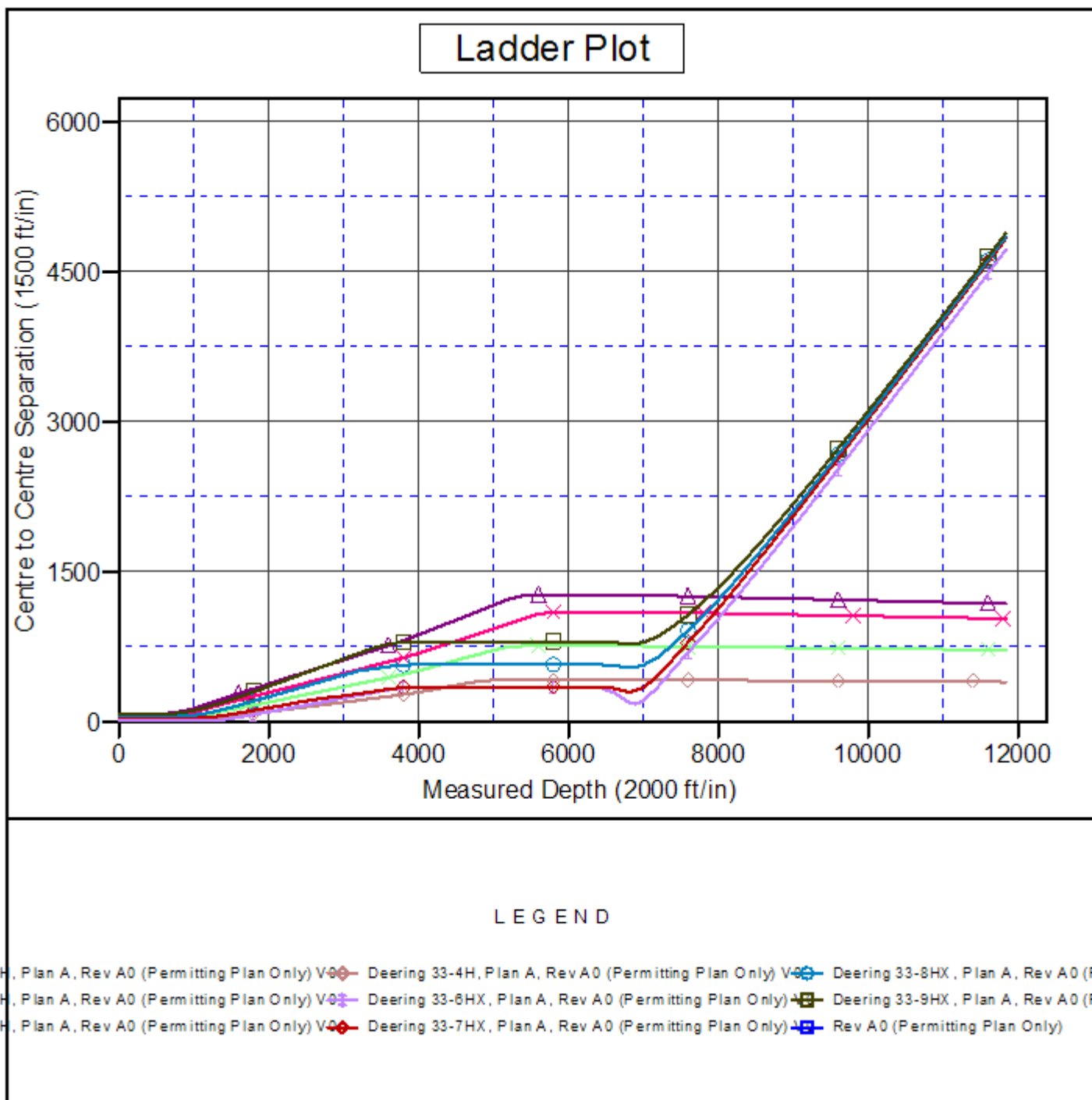
Anticollision Report for Deering 33-5H - Rev A0 (Permitting Plan Only)

Direction and Coordinates are relative to True North Reference.

Vertical Depths are relative to GL @ 4904.00ft (Ground Level). Northing and Easting are relative to Deering 33-5H - Slot A5

Coordinate System is US State Plane 1983, Colorado Northern Zone

Central Meridian is -105.00°, Grid Convergence at Surface is: 0.39°



K.P. Kauffman Company, Inc.

Weld County, CO (NAD 83)

Sec. 33-T4N-R67W (Deering 33H Pad)

Deering 33-5H - A5

Plan A

Plan: Rev A0 (Permitting Plan Only)

Sperry Drilling Services

Proposal Report

25 July, 2013

Well Coordinates: 1,341,790.72 N, 3,166,345.30 E (40° 16' 12.29" N, 104° 54' 13.93" W)

Ground Level: 4,904.00 ft

Local Coordinate Origin: Centered on Well Deering 33-5H - Slot A5

Viewing Datum: GL @ 4904.00ft (Ground Level)

TVDs to System: N

North Reference: True

Unit System: API - US Survey Feet - Custom

Geodetic Scale Factor Applied

Version: 2003.16 Build: 431

HALLIBURTON

Plan Report for Deering 33-5H - Rev A0 (Permitting Plan Only)

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
Begin 2.5°/100ft Nudge to 8.0° Inclination at 1200.00ft										
1,300.00	2.50	298.22	1,299.97	1.03	-1.92	-1.88	2.50	2.50	0.00	298.22
1,400.00	5.00	298.22	1,399.75	4.12	-7.68	-7.53	2.50	2.50	0.00	0.00
1,500.00	7.50	298.22	1,499.14	9.27	-17.28	-16.94	2.50	2.50	0.00	0.00
1,520.00	8.00	298.22	1,518.96	10.55	-19.65	-19.27	2.50	2.50	0.00	0.00
Begin 2125.87ft Tangent at 1520.00ft										
1,600.00	8.00	298.22	1,598.18	15.81	-29.46	-28.88	0.00	0.00	0.00	0.00
1,700.00	8.00	298.22	1,697.21	22.39	-41.73	-40.90	0.00	0.00	0.00	0.00
1,800.00	8.00	298.22	1,796.24	28.97	-53.99	-52.92	0.00	0.00	0.00	0.00
1,900.00	8.00	298.22	1,895.26	35.56	-66.25	-64.95	0.00	0.00	0.00	0.00
2,000.00	8.00	298.22	1,994.29	42.14	-78.52	-76.97	0.00	0.00	0.00	0.00
2,100.00	8.00	298.22	2,093.32	48.72	-90.78	-88.99	0.00	0.00	0.00	0.00
2,200.00	8.00	298.22	2,192.34	55.30	-103.04	-101.01	0.00	0.00	0.00	0.00
2,300.00	8.00	298.22	2,291.37	61.88	-115.30	-113.03	0.00	0.00	0.00	0.00
2,400.00	8.00	298.22	2,390.40	68.46	-127.57	-125.05	0.00	0.00	0.00	0.00
2,500.00	8.00	298.22	2,489.42	75.04	-139.83	-137.07	0.00	0.00	0.00	0.00
2,600.00	8.00	298.22	2,588.45	81.62	-152.09	-149.10	0.00	0.00	0.00	0.00
2,700.00	8.00	298.22	2,687.48	88.20	-164.36	-161.12	0.00	0.00	0.00	0.00
2,800.00	8.00	298.22	2,786.50	94.79	-176.62	-173.14	0.00	0.00	0.00	0.00
2,900.00	8.00	298.22	2,885.53	101.37	-188.88	-185.16	0.00	0.00	0.00	0.00
3,000.00	8.00	298.22	2,984.56	107.95	-201.14	-197.18	0.00	0.00	0.00	0.00
3,100.00	8.00	298.22	3,083.58	114.53	-213.41	-209.20	0.00	0.00	0.00	0.00
3,200.00	8.00	298.22	3,182.61	121.11	-225.67	-221.22	0.00	0.00	0.00	0.00
3,300.00	8.00	298.22	3,281.64	127.69	-237.93	-233.24	0.00	0.00	0.00	0.00
3,400.00	8.00	298.22	3,380.67	134.27	-250.20	-245.27	0.00	0.00	0.00	0.00
3,500.00	8.00	298.22	3,479.69	140.85	-262.46	-257.29	0.00	0.00	0.00	0.00
3,600.00	8.00	298.22	3,578.72	147.43	-274.72	-269.31	0.00	0.00	0.00	0.00
3,645.87	8.00	298.22	3,624.14	150.45	-280.35	-274.82	0.00	0.00	0.00	0.00
Begin 2.5°/100ft Drop to Vertical at 3645.87ft										
3,700.00	6.65	298.22	3,677.83	153.72	-286.43	-280.78	2.50	-2.50	0.00	180.00
3,800.00	4.15	298.22	3,777.38	158.16	-294.71	-288.91	2.50	-2.50	0.00	180.00
3,900.00	1.65	298.22	3,877.24	160.55	-299.17	-293.27	2.50	-2.50	0.00	180.00
3,965.87	0.00	0.00	3,943.10	161.00	-300.00	-294.09	2.50	-2.50	0.00	180.00
End of Drop at 3965.87ft										
4,000.00	0.00	0.00	3,977.23	161.00	-300.00	-294.09	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,077.23	161.00	-300.00	-294.09	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,177.23	161.00	-300.00	-294.09	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,277.23	161.00	-300.00	-294.09	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,377.23	161.00	-300.00	-294.09	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,477.23	161.00	-300.00	-294.09	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,577.23	161.00	-300.00	-294.09	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,677.23	161.00	-300.00	-294.09	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,777.23	161.00	-300.00	-294.09	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,877.23	161.00	-300.00	-294.09	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	4,977.23	161.00	-300.00	-294.09	0.00	0.00	0.00	0.00

Plan Report for Deering 33-5H - Rev A0 (Permitting Plan Only)

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 (°)
5,100.00	0.00	0.00	5,077.23	161.00	-300.00	-294.09	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,177.23	161.00	-300.00	-294.09	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,277.23	161.00	-300.00	-294.09	0.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,377.23	161.00	-300.00	-294.09	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,477.23	161.00	-300.00	-294.09	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,577.23	161.00	-300.00	-294.09	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,677.23	161.00	-300.00	-294.09	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,777.23	161.00	-300.00	-294.09	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,877.23	161.00	-300.00	-294.09	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	5,977.23	161.00	-300.00	-294.09	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,077.23	161.00	-300.00	-294.09	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,177.23	161.00	-300.00	-294.09	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,277.23	161.00	-300.00	-294.09	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,377.23	161.00	-300.00	-294.09	0.00	0.00	0.00	0.00
6,462.75	0.00	0.00	6,439.98	161.00	-300.00	-294.09	0.00	0.00	0.00	0.00
KOP - Begin 8.0°/100ft Build at 6462.75ft										
6,500.00	2.98	90.00	6,477.22	161.00	-299.03	-293.12	8.00	8.00	0.00	90.00
6,600.00	10.98	90.00	6,576.40	161.00	-286.89	-280.98	8.00	8.00	0.00	0.00
6,700.00	18.98	90.00	6,672.92	161.00	-261.06	-255.17	8.00	8.00	0.00	0.00
6,800.00	26.98	90.00	6,764.91	161.00	-222.05	-216.19	8.00	8.00	0.00	0.00
6,900.00	34.98	90.00	6,850.57	160.99	-170.62	-164.79	8.00	8.00	0.00	0.00
7,000.00	42.98	90.00	6,928.25	160.99	-107.76	-101.97	8.00	8.00	0.00	0.00
7,100.00	50.98	90.00	6,996.41	160.98	-34.71	-28.97	8.00	8.00	0.00	0.00
7,200.00	58.98	90.00	7,053.75	160.98	47.12	52.81	8.00	8.00	0.00	0.00
7,300.00	66.98	90.00	7,099.15	160.97	136.13	141.77	8.00	8.00	0.00	0.00
7,400.00	74.98	90.00	7,131.71	160.97	230.59	236.17	8.00	8.00	0.00	0.00
7,500.00	82.98	90.00	7,150.81	160.96	328.67	334.18	8.00	8.00	0.00	0.00
7,600.00	90.98	90.00	7,156.07	160.95	428.45	433.90	8.00	8.00	0.00	0.00
7,603.52	91.26	90.00	7,156.00	160.95	431.97	437.42	8.00	8.00	0.00	0.00
End of Build at 7603.52ft - 7" Csg										
7,700.00	91.26	90.00	7,153.88	160.95	528.43	533.81	0.00	0.00	0.00	0.00
7,800.00	91.26	90.00	7,151.68	160.94	628.40	633.73	0.00	0.00	0.00	0.00
7,900.00	91.26	90.00	7,149.47	160.94	728.38	733.64	0.00	0.00	0.00	0.00
8,000.00	91.26	90.00	7,147.27	160.93	828.35	833.55	0.00	0.00	0.00	0.00
8,100.00	91.26	90.00	7,145.07	160.92	928.33	933.46	0.00	0.00	0.00	0.00
8,200.00	91.26	90.00	7,142.87	160.92	1,028.30	1,033.38	0.00	0.00	0.00	0.00
8,300.00	91.26	90.00	7,140.67	160.91	1,128.28	1,133.29	0.00	0.00	0.00	0.00
8,400.00	91.26	90.00	7,138.46	160.91	1,228.26	1,233.20	0.00	0.00	0.00	0.00
8,500.00	91.26	90.00	7,136.26	160.90	1,328.23	1,333.11	0.00	0.00	0.00	0.00
8,600.00	91.26	90.00	7,134.06	160.89	1,428.21	1,433.02	0.00	0.00	0.00	0.00
8,700.00	91.26	90.00	7,131.86	160.89	1,528.18	1,532.94	0.00	0.00	0.00	0.00
8,800.00	91.26	90.00	7,129.65	160.88	1,628.16	1,632.85	0.00	0.00	0.00	0.00
8,900.00	91.26	90.00	7,127.45	160.87	1,728.14	1,732.76	0.00	0.00	0.00	0.00
9,000.00	91.26	90.00	7,125.25	160.87	1,828.11	1,832.67	0.00	0.00	0.00	0.00
9,100.00	91.26	90.00	7,123.05	160.86	1,928.09	1,932.59	0.00	0.00	0.00	0.00
9,200.00	91.26	90.00	7,120.85	160.86	2,028.06	2,032.50	0.00	0.00	0.00	0.00
9,300.00	91.26	90.00	7,118.64	160.85	2,128.04	2,132.41	0.00	0.00	0.00	0.00
9,400.00	91.26	90.00	7,116.44	160.84	2,228.01	2,232.32	0.00	0.00	0.00	0.00
9,500.00	91.26	90.00	7,114.24	160.84	2,327.99	2,332.24	0.00	0.00	0.00	0.00
9,600.00	91.26	90.00	7,112.04	160.83	2,427.97	2,432.15	0.00	0.00	0.00	0.00
Hold Angle at 91.26°										
9,700.00	91.26	90.00	7,109.83	160.82	2,527.94	2,532.06	0.00	0.00	0.00	0.00
9,800.00	91.26	90.00	7,107.63	160.82	2,627.92	2,631.97	0.00	0.00	0.00	0.00
9,900.00	91.26	90.00	7,105.43	160.81	2,727.89	2,731.89	0.00	0.00	0.00	0.00
10,000.00	91.26	90.00	7,103.23	160.81	2,827.87	2,831.80	0.00	0.00	0.00	0.00
10,100.00	91.26	90.00	7,101.03	160.80	2,927.84	2,931.71	0.00	0.00	0.00	0.00
10,200.00	91.26	90.00	7,098.82	160.79	3,027.82	3,031.62	0.00	0.00	0.00	0.00
10,300.00	91.26	90.00	7,096.62	160.79	3,127.80	3,131.53	0.00	0.00	0.00	0.00
10,400.00	91.26	90.00	7,094.42	160.78	3,227.77	3,231.45	0.00	0.00	0.00	0.00

Plan Report for Deering 33-5H - Rev A0 (Permitting Plan Only)

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 (°)
10,500.00	91.26	90.00	7,092.22	160.77	3,327.75	3,331.36	0.00	0.00	0.00	0.00
10,600.00	91.26	90.00	7,090.01	160.77	3,427.72	3,431.27	0.00	0.00	0.00	0.00
10,700.00	91.26	90.00	7,087.81	160.76	3,527.70	3,531.18	0.00	0.00	0.00	0.00
10,800.00	91.26	90.00	7,085.61	160.76	3,627.67	3,631.10	0.00	0.00	0.00	0.00
10,900.00	91.26	90.00	7,083.41	160.75	3,727.65	3,731.01	0.00	0.00	0.00	0.00
11,000.00	91.26	90.00	7,081.20	160.74	3,827.63	3,830.92	0.00	0.00	0.00	0.00
11,100.00	91.26	90.00	7,079.00	160.74	3,927.60	3,930.83	0.00	0.00	0.00	0.00
11,200.00	91.26	90.00	7,076.80	160.73	4,027.58	4,030.75	0.00	0.00	0.00	0.00
11,300.00	91.26	90.00	7,074.60	160.73	4,127.55	4,130.66	0.00	0.00	0.00	0.00
11,400.00	91.26	90.00	7,072.40	160.72	4,227.53	4,230.57	0.00	0.00	0.00	0.00
11,500.00	91.26	90.00	7,070.19	160.71	4,327.50	4,330.48	0.00	0.00	0.00	0.00
11,600.00	91.26	90.00	7,067.99	160.71	4,427.48	4,430.39	0.00	0.00	0.00	0.00
11,690.43	91.26	90.00	7,066.00	160.70	4,517.89	4,520.75	0.00	0.00	0.00	0.00
Total Depth at 11690.43ft										

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,200.00	1,200.00	0.00	0.00	Begin 2.5°/100ft Nudge to 8.0° Inclination at 1200.00ft
1,520.00	1,518.96	10.55	-19.65	Begin 2125.87ft Tangent at 1520.00ft
3,645.87	3,624.14	150.45	-280.35	Begin 2.5°/100ft Drop to Vertical at 3645.87ft
3,965.87	3,943.10	161.00	-300.00	End of Drop at 3965.87ft
6,462.75	6,439.98	161.00	-300.00	KOP - Begin 8.0°/100ft Build at 6462.75ft
7,603.52	7,156.00	160.95	431.97	End of Build at 7603.52ft
9,600.00	7,112.04	160.83	2,427.97	Hold Angle at 91.26°
11,690.43	7,066.00	160.70	4,517.89	Total Depth at 11690.43ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/-S (ft)	+E/-W (ft)	
Target	Deering 33-5H_RevA0_BHL Tgt	87.96	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	7,603.52	Rev A0 (Permitting Plan Only)	MWD
7,603.52	11,840.43	Rev A0 (Permitting Plan Only)	MWD

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,603.52	7,156.00	7" Csg	7	8-3/4

Plan Report for Deering 33-5H - Rev A0 (Permitting Plan Only)**Targets associated with this wellbore**

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
Deering_Camenisch 32-9	-1.00	-990.89	-1,021.39	Circle
Stroh_Sunmarke 19-28-11_BHL	-85.00	4,378.16	1,628.27	Circle
Stroh_Stroh 28-10	-32.00	4,353.60	2,971.43	Circle
Stroh_Stroh 23-28	-32.00	3,573.94	2,466.50	Circle
Stroh_Spaur 1	-32.00	4,358.94	1,608.48	Circle
Deering_Anderson 12-32	-1.00	-870.25	-4,649.24	Circle
Deering_Anderson 1	-1.00	-852.25	-3,334.83	Circle
Stroh_Frank 1 (B)	-32.00	1,171.60	4,271.03	Circle
Deering_Hepp 32-5	-1.00	597.91	-4,749.42	Circle
Deering_Stroh 7-33	-1.00	368.12	3,002.60	Circle
Stroh_Koester 18-33-6_BHL	-34.00	397.61	1,645.40	Circle
Stroh_Stroh 33-2	-32.00	1,705.11	2,980.12	Circle
Stroh_Koester 3-33-3_BHL	-65.00	1,683.34	1,683.44	Circle
Stroh_Sunmarke 15-28	-32.00	3,322.46	1,021.21	Circle
Deering_Stroh 33-4	-1.00	364.67	4,311.35	Circle
Stroh_Stroh 28-16	-32.00	2,998.78	5,320.96	Circle
Deering 33-5H_RevA0_BHL Tgt	7,066.00	160.70	4,517.89	Point
Stroh_Stroh 2	-32.00	3,395.52	3,303.57	Circle
Deering_Camenisch 32-10	-1.00	-695.72	-2,277.16	Circle
Stroh_Sunmarke 19-28-14_BHL	-85.00	3,049.02	1,620.01	Circle
Stroh_Koester 18-33	-32.00	750.47	563.68	Circle
Stroh_Stroh 39-28R	-32.00	3,490.48	4,748.87	Circle
Stroh 28-1H_Sec. 33 Lines	-32.00	2,634.37	4,768.56	Polygon
Stroh_Sunmarke 19-28-12_BHL	-85.00	4,359.50	305.95	Circle
Deering_Hepp 22-32R	-1.00	73.20	-4,107.69	Circle
Deering 33-1H_Sec. 32 N Half 460' Setback	-1.00	80.14	0.00	Polygon
Stroh_Stroh 38-28R	-32.00	2,488.64	4,754.64	Circle
Stroh_Koester 3-33-21_BHL	-64.00	1,071.53	2,147.99	Circle
Stroh_Stroh 33-1	-32.00	1,701.64	4,171.60	Circle
Deering 33-1H_Sec. 32 N Half Lines	-1.00	80.14	0.00	Polygon
Deering_Camenisch 9-32-40R	-1.00	-958.10	-996.27	Circle
Stroh_Frank 1	-32.00	2,016.47	1,642.11	Circle
Stroh_Stroh 28-33R	-32.00	2,215.08	2,466.64	Circle
Stroh_Sunmarke 19-28-13_BHL	-85.00	3,050.92	269.98	Circle
Stroh_Koester 18-33-4_BHL	-32.00	1,760.09	347.46	Circle
Stroh 28-1H_Sec. 33 460' Setback	-32.00	2,634.37	4,768.56	Polygon
Stroh_Stroh 1	-32.00	677.82	3,298.35	Circle
Deering_Camenisch 7-32-25R	-1.00	269.70	-2,408.23	Circle
Stroh_Koester 18-33-5_BHL	-31.00	334.73	231.53	Circle
Stroh_Stroh 15-28	-32.00	2,994.74	2,943.69	Circle
Stroh_Koester 18-33-22_BHL	-32.00	-50.27	995.48	Circle
Stroh_Stroh 41-33R	-32.00	856.57	4,766.11	Circle
Stroh_Koester 3-33-29_BHL	-66.00	2,214.81	983.27	Circle
Deering_Hepp 32-6	-1.00	539.41	-3,502.08	Circle
Deering_Camenisch 41-32	-1.00	306.12	-2,369.16	Circle
Stroh_Stroh 28-9	-32.00	4,313.72	4,288.35	Circle

North Reference Sheet for Sec. 33-T4N-R67W (Deering 33H Pad) - Deering 33-5H - 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 GL @ 4904.00ft (Ground Level). Northing and Easting are relative to Deering 33-5H - Slot A5

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° 0' 0.000 E°, Latitude Origin:40° 47' 0.000 N°

False Easting: 3,000,000.00ft, False Northing: 1,000,000.00ft, Scale Reduction: 0.99995690

Grid Coordinates of Well: 1,341,790.72 ft N, 3,166,345.30 ft E

Geographical Coordinates of Well: 40° 16' 12.29" N, 104° 54' 13.93" W

Grid Convergence at Surface is: 0.39°

Based upon Minimum Curvature type calculations, at a Measured Depth of 11,840.43ft

the Bottom Hole Displacement is 4,670.62ft in the Direction of 88.03° (True).

Magnetic Convergence at surface is: -8.29° (24 July 2013, , BGGM2013)

