

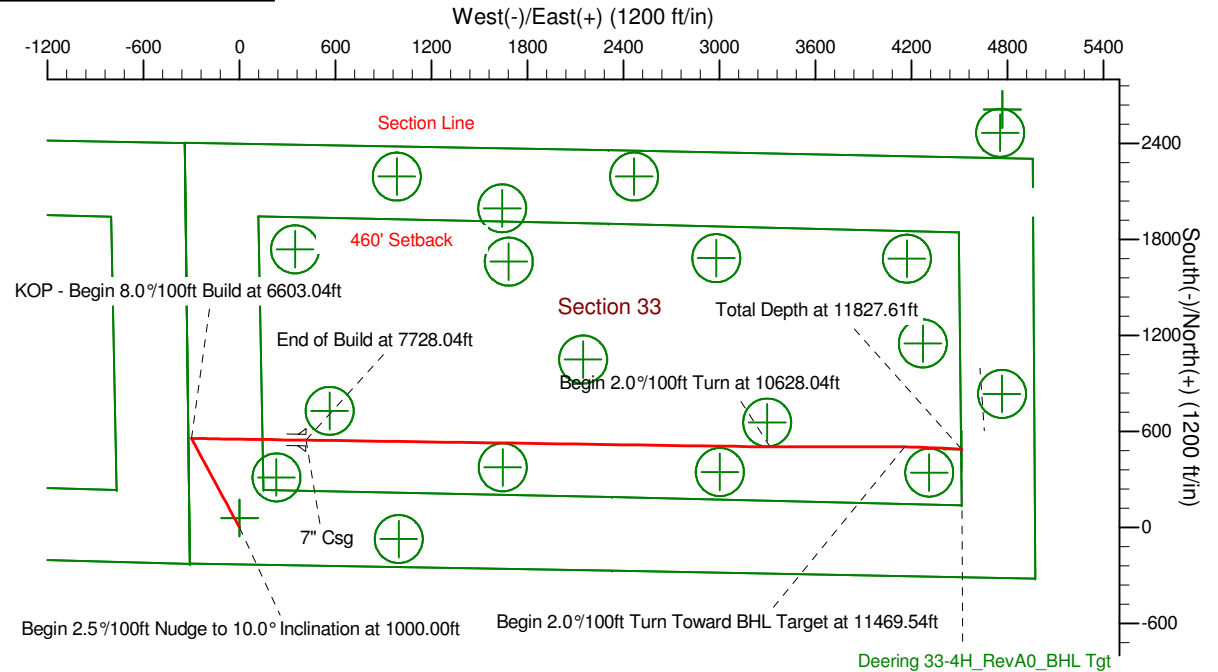
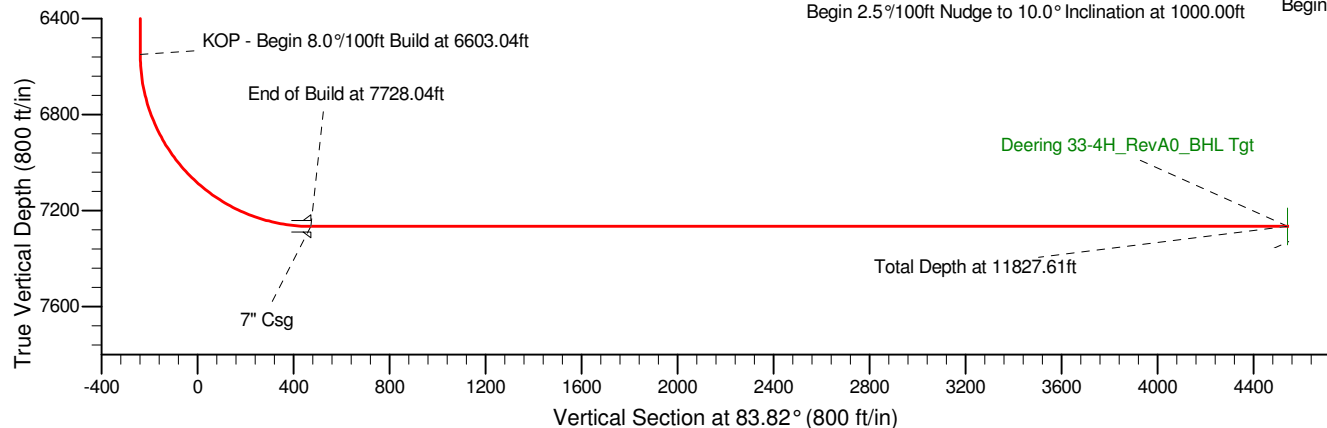
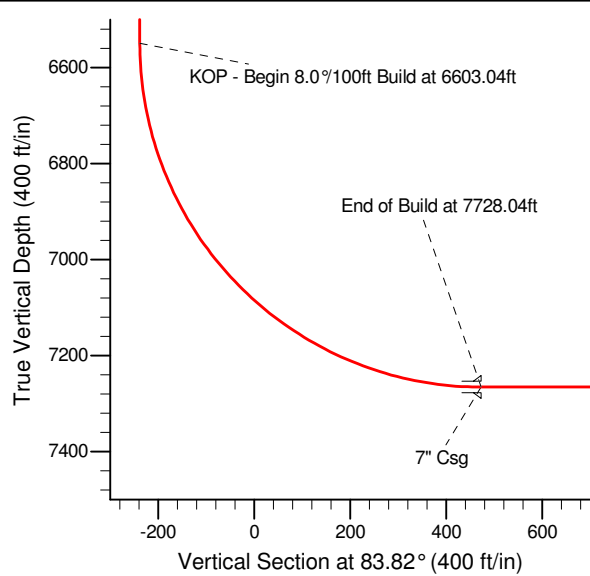
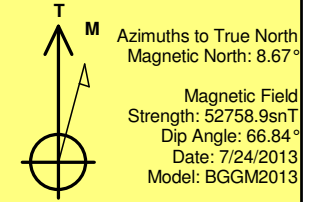
Project: Weld County, CO (NAD 83)
 Site: Sec. 33-T4N-R67W (Deering 33H Pad)
 Well: Deering 33-4H
 Wellbore: Plan A
 Design: Rev A0 (Permitting Plan Only)

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	1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	0.00	
3	1400.00	10.00	331.65	1397.98	30.64	-16.53	2.50	331.65	-13.14	
4	4637.18	10.00	331.65	4585.97	525.36	-283.47	0.00	0.00	-225.30	
5	5037.19	0.00	0.00	4983.95	556.00	-300.00	2.50	180.00	-238.44	
6	6603.04	0.00	0.00	6549.80	556.00	-300.00	0.00	0.00	-238.44	
7	7728.04	90.00	90.83	7266.00	545.63	416.12	8.00	90.83	472.41	
8	10628.04	90.00	90.83	7266.00	503.62	3315.82	0.00	0.00	3350.75	
9	10669.54	90.00	90.00	7266.00	503.32	3357.32	2.00	-90.00	3391.98	
10	11469.54	90.00	90.00	7266.00	503.32	4157.32	0.00	0.00	4187.34	
11	11618.44	90.00	92.98	7266.00	499.45	4306.15	2.00	90.01	4334.89	
12	11827.61	90.00	92.98	7266.00	488.58	4515.04	0.00	0.00	4541.40	Deering 33-4H_RevA0_BHL Tgt



WELL DETAILS: Deering 33-4H

Ground Level: 4904.00
 Northing 1341812.57 Easting 3166345.15
 40° 16' 12.504 N 104° 54' 13.932 W

Plan: Rev A0 (Permitting Plan Only) (Deering 33-4H/Plan A)

Created By: Jay Lantz Date: 12:51, July 25 2013

Approved: _____ Date: _____

K.P. Kauffman Company, Inc.

Weld County, CO (NAD 83)

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

Deering 33-4H

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 33-4H - Plan A - Rev A0 (Permitting Plan Only)

Well Coordinates: 1,341,812.57 N, 3,166,345.15 E (40° 16' 12.50" N, 104° 54' 13.93" W)

Datum Height: GL @ 4904.00ft (Ground Level)

Scan Range: 0.00 to 11,977.61 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 33-4H - 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 11,977.61 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	798.00	800.00	-80.15	0.00	1.68	80.15	76.12	180.00	19.921
1,000.00	1,000.00	0.00	0.00	2.14	991.27	993.04	-87.63	-2.76	2.05	87.95	83.10	181.81	18.153
1,200.00	1,199.75	7.68	-4.14	2.59	1,181.66	1,181.92	-109.79	-10.95	2.47	119.01	113.31	183.32	20.885
1,400.00	1,397.98	30.64	-16.53	3.08	1,374.75	1,372.63	-138.13	-21.41	3.01	170.73	164.18	181.65	26.031
1,600.00	1,594.93	61.21	-33.03	3.68	1,565.70	1,561.22	-166.15	-31.75	3.62	229.85	222.37	179.68	30.729
1,800.00	1,791.90	91.77	-49.52	4.34	1,756.64	1,749.82	-194.17	-42.10	4.26	289.12	280.68	178.51	34.243
2,000.00	1,988.86	122.34	-66.01	5.04	1,947.59	1,938.41	-222.19	-52.45	4.92	348.47	339.04	177.75	36.945
2,200.00	2,185.82	152.90	-82.50	5.76	2,138.53	2,127.00	-250.22	-62.79	5.59	407.86	397.42	177.20	39.066
2,400.00	2,382.78	183.46	-98.99	6.50	2,329.47	2,315.60	-278.24	-73.14	6.28	467.28	455.82	176.80	40.767
2,600.00	2,579.74	214.03	-115.48	7.24	2,520.42	2,504.19	-306.26	-83.49	6.97	526.72	514.22	176.48	42.158
2,800.00	2,776.70	244.59	-131.98	8.00	2,711.36	2,692.79	-334.28	-93.83	7.67	586.17	572.63	176.23	43.313
3,000.00	2,973.66	275.16	-148.47	8.76	2,902.31	2,881.38	-362.30	-104.18	8.37	645.63	631.05	176.03	44.286
3,200.00	3,170.63	305.72	-164.96	9.52	3,124.15	3,100.86	-392.39	-115.29	9.10	703.35	687.68	175.93	44.890
3,400.00	3,367.59	336.29	-181.45	10.29	3,391.37	3,367.59	-405.15	-120.00	9.60	743.98	727.25	175.26	44.489
3,600.00	3,564.55	366.85	-197.94	11.06	3,588.33	3,564.55	-405.15	-120.00	9.88	775.92	758.30	174.23	44.029
3,800.00	3,761.51	397.42	-214.43	11.83	3,785.29	3,761.51	-405.15	-120.00	10.18	808.10	789.57	173.29	43.624
4,000.00	3,958.47	427.98	-230.93	12.61	3,982.25	3,958.47	-405.15	-120.00	10.48	840.48	821.05	172.42	43.264
4,200.00	4,155.43	458.55	-247.42	13.39	4,179.22	4,155.43	-405.15	-120.00	10.79	873.04	852.71	171.61	42.941
4,400.00	4,352.39	489.11	-263.91	14.16	4,376.18	4,352.39	-405.15	-120.00	11.12	905.76	884.52	170.86	42.651
4,600.00	4,549.36	519.67	-280.40	14.94	4,573.14	4,549.36	-405.15	-120.00	11.45	938.63	916.48	170.16	42.388
4,800.00	4,747.19	545.21	-294.18	15.55	4,770.97	4,747.19	-405.15	-120.00	11.79	966.18	943.10	169.61	41.859
5,000.00	4,946.77	555.73	-299.86	15.92	4,970.55	4,946.77	-405.15	-120.00	12.14	977.57	953.72	169.40	40.997
5,200.00	5,146.76	556.00	-300.00	16.21	5,170.55	5,146.76	-405.15	-120.00	12.49	977.86	949.28	169.39	34.224
5,400.00	5,346.76	556.00	-300.00	16.51	5,370.55	5,346.76	-405.15	-120.00	12.85	977.86	948.60	169.39	33.423
5,600.00	5,546.76	556.00	-300.00	16.83	5,570.55	5,546.76	-405.15	-120.00	13.22	977.86	947.90	169.39	32.646
5,800.00	5,746.76	556.00	-300.00	17.15	5,770.55	5,746.76	-405.15	-120.00	13.59	977.86	947.19	169.39	31.893
6,000.00	5,946.76	556.00	-300.00	17.47	5,970.55	5,946.76	-405.15	-120.00	13.97	977.86	946.48	169.39	31.165
6,200.00	6,146.76	556.00	-300.00	17.80	6,170.55	6,146.76	-405.15	-120.00	14.35	977.86	945.75	169.39	30.461
6,400.00	6,346.76	556.00	-300.00	18.14	6,370.55	6,346.76	-405.15	-120.00	14.74	977.86	945.02	169.39	29.780
6,600.00	6,546.76	556.00	-300.00	18.48	6,608.74	6,584.01	-404.87	-134.22	15.24	975.78	942.15	170.21	29.016
6,800.00	6,744.29	555.61	-273.09	18.67	6,828.57	6,789.47	-403.43	-209.94	15.93	962.18	930.50	176.23	30.374
6,914.79	6,851.80	555.03	-233.22	18.66	6,903.60	6,853.05	-402.67	-249.70	16.24	957.85	925.65	180.99	29.745
7,000.00	6,926.75	554.45	-192.79	18.66	6,938.16	6,880.86	-402.28	-270.21	16.42	960.95	928.49	184.63	29.606
7,200.00	7,080.00	552.60	-65.31	18.56	6,969.37	6,905.10	-401.91	-289.86	16.59	996.04	963.10	193.24	30.233
7,400.00	7,192.18	550.21	99.47	18.48	6,950.00	6,890.16	-402.14	-277.54	16.48	1,067.86	1,033.59	201.60	31.162
7,600.00	7,254.58	547.47	288.78	20.07	6,919.35	6,865.84	-402.50	-258.87	16.32	1,163.39	1,127.62	209.96	32.518
7,800.00	7,266.00	544.58	488.08	22.84	6,868.86	6,824.13	-403.04	-230.46	16.09	1,268.67	1,231.85	217.17	34.451
8,000.00	7,266.00	541.69	688.06	24.60	6,824.31	6,785.74	-403.47	-207.88	15.91	1,388.05	1,349.41	223.47	35.923
8,200.00	7,266.00	538.79	888.04	27.15	6,800.00	6,764.22	-403.69	-196.58	15.82	1,521.98	1,480.42	229.01	36.619
8,400.00	7,266.00	535.89	1,088.02	30.33	6,750.00	6,718.81	-404.08	-175.66	15.65	1,667.28	1,622.80	233.36	37.479
8,600.00	7,266.00	532.99	1,287.99	33.97	6,732.86	6,702.93	-404.21	-169.22	15.59	1,821.78	1,773.37	237.25	37.636
8,800.00	7,266.00	530.10	1,487.97	37.95	6,700.00	6,672.06	-404.42	-157.96	15.49	1,983.73	1,931.57	240.41	38.034
9,000.00	7,266.00	527.20	1,687.95	42.18	6,700.00	6,672.06	-404.42	-157.96	15.49	2,151.29	2,094.43	243.22	37.829
9,200.00	7,266.00	524.30	1,887.93	46.59	6,677.45	6,650.60	-404.55	-151.05	15.43	2,323.56	2,262.50	245.51	38.050
9,400.00	7,266.00	521.41	2,087.91	51.14	6,650.00	6,624.19	-404.70	-143.56	15.35	2,499.81	2,434.69	247.46	38.390
9,600.00	7,266.00	518.51	2,287.89	55.79	6,650.00	6,624.19	-404.70	-143.56	15.35	2,678.84	2,608.79	249.21	38.243

Anticollision Report for Deering 33-4H - 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 11,977.61 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	7,266.00	515.61	2,487.87	60.51	6,650.00	6,624.19	-404.70	-143.56	15.35	2,860.65	2,785.61	250.72	38.123
10,000.00	7,266.00	512.71	2,687.85	65.30	6,650.00	6,624.19	-404.70	-143.56	15.35	3,044.74	2,964.67	252.05	38.025
10,200.00	7,266.00	509.82	2,887.83	70.13	6,622.45	6,597.42	-404.82	-137.07	15.28	3,230.10	3,146.06	253.18	38.436
10,400.00	7,266.00	506.92	3,087.81	75.01	6,600.00	6,575.43	-404.91	-132.54	15.22	3,417.45	3,329.32	254.19	38.780
10,600.00	7,266.00	504.02	3,287.78	79.91	6,600.00	6,575.43	-404.91	-132.54	15.22	3,605.78	3,512.64	255.12	38.715
10,800.00	7,266.00	503.32	3,487.78	84.85	6,600.00	6,575.43	-404.91	-132.54	15.22	3,795.85	3,699.29	255.92	39.312
11,000.00	7,266.00	503.32	3,687.78	89.80	6,600.00	6,575.43	-404.91	-132.54	15.22	3,987.05	3,885.54	256.63	39.276
11,200.00	7,266.00	503.32	3,887.78	94.77	6,600.00	6,575.43	-404.91	-132.54	15.22	4,179.08	4,072.60	257.27	39.247
11,400.00	7,266.00	503.32	4,087.78	99.76	6,600.00	6,575.43	-404.91	-132.54	15.22	4,371.83	4,260.36	257.86	39.223
11,600.00	7,266.00	500.35	4,287.73	104.76	6,600.00	6,575.43	-404.91	-132.54	15.22	4,564.56	4,441.55	258.43	37.107
11,800.00	7,266.00	490.01	4,487.47	109.77	6,576.10	6,551.88	-404.98	-128.48	15.16	4,755.84	4,627.95	259.03	37.188
11,977.61	7,266.00	480.79	4,664.84	114.23	6,572.58	6,548.41	-404.99	-127.95	15.15	4,926.50	4,794.08	259.53	37.204

Anticollision Report for Deering 33-4H - 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 11,977.61 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	-102.00	0.00	0.00	102.02	101.36	180.00	155.406
200.00	200.00	0.00	0.00	0.34	198.00	200.00	-102.00	0.00	0.33	102.00	100.67	180.00	76.918
400.00	400.00	0.00	0.00	0.79	398.00	400.00	-102.00	0.00	0.78	102.00	99.77	180.00	45.839
600.00	600.00	0.00	0.00	1.24	598.00	600.00	-102.00	0.00	1.23	102.00	98.87	180.00	32.648
800.00	800.00	0.00	0.00	1.69	789.32	791.11	-109.63	-1.69	1.60	110.00	106.05	180.88	27.876
1,000.00	1,000.00	0.00	0.00	2.14	977.96	978.25	-132.35	-6.74	2.04	134.30	129.50	182.92	28.007
1,200.00	1,199.75	7.68	-4.14	2.59	1,166.11	1,162.73	-168.36	-14.74	2.66	180.20	174.51	183.45	31.661
1,400.00	1,397.98	30.64	-16.53	3.08	1,355.91	1,348.38	-206.88	-23.30	3.40	242.74	236.17	181.63	36.929
1,600.00	1,594.93	61.21	-33.03	3.68	1,543.10	1,531.48	-244.88	-31.75	4.18	312.59	305.08	179.76	41.586
1,800.00	1,791.90	91.77	-49.52	4.34	1,730.30	1,714.59	-282.87	-40.19	4.99	382.65	374.15	178.57	45.047
2,000.00	1,988.86	122.34	-66.01	5.04	1,917.50	1,897.70	-320.86	-48.63	5.81	452.81	443.31	177.75	47.671
2,200.00	2,185.82	152.90	-82.50	5.76	2,104.70	2,080.80	-358.86	-57.08	6.64	523.04	512.52	177.16	49.719
2,400.00	2,382.78	183.46	-98.99	6.50	2,291.90	2,263.91	-396.85	-65.52	7.47	593.31	581.76	176.70	51.353
2,600.00	2,579.74	214.03	-115.48	7.24	2,479.09	2,447.02	-434.85	-73.96	8.31	663.61	651.01	176.34	52.684
2,800.00	2,776.70	244.59	-131.98	8.00	2,666.29	2,630.13	-472.84	-82.40	9.16	733.93	720.28	176.05	53.786
3,000.00	2,973.66	275.16	-148.47	8.76	2,853.49	2,813.23	-510.83	-90.85	10.00	804.26	789.56	175.81	54.712
3,200.00	3,170.63	305.72	-164.96	9.52	3,040.69	2,996.34	-548.83	-99.29	10.85	874.61	858.85	175.61	55.500
3,400.00	3,367.59	336.29	-181.45	10.29	3,227.88	3,179.45	-586.82	-107.73	11.70	944.96	928.14	175.43	56.179
3,600.00	3,564.55	366.85	-197.94	11.06	3,528.78	3,476.46	-632.60	-117.91	12.58	1,006.52	988.49	175.42	55.833
3,800.00	3,761.51	397.42	-214.43	11.83	3,814.13	3,761.51	-642.00	-120.00	13.01	1,043.69	1,024.61	174.81	54.675
4,000.00	3,958.47	427.98	-230.93	12.61	4,011.09	3,958.47	-642.00	-120.00	13.24	1,075.71	1,055.74	174.08	53.849
4,200.00	4,155.43	458.55	-247.42	13.39	4,208.05	4,155.43	-642.00	-120.00	13.48	1,107.89	1,087.03	173.40	53.093
4,400.00	4,352.39	489.11	-263.91	14.16	4,405.01	4,352.39	-642.00	-120.00	13.73	1,140.23	1,118.46	172.75	52.398
4,600.00	4,549.36	519.67	-280.40	14.94	4,601.97	4,549.36	-642.00	-120.00	13.98	1,172.69	1,150.04	172.14	51.759
4,800.00	4,747.19	545.21	-294.18	15.55	4,799.80	4,747.19	-642.00	-120.00	14.25	1,199.91	1,176.29	171.65	50.788
5,000.00	4,946.77	555.73	-299.86	15.92	4,999.38	4,946.77	-642.00	-120.00	14.53	1,211.16	1,186.74	171.46	49.606
5,200.00	5,146.76	556.00	-300.00	16.21	5,199.38	5,146.76	-642.00	-120.00	14.82	1,211.44	1,180.65	171.45	39.345
5,400.00	5,346.76	556.00	-300.00	16.51	5,399.38	5,346.76	-642.00	-120.00	15.11	1,211.44	1,180.04	171.45	38.572
5,600.00	5,546.76	556.00	-300.00	16.83	5,599.38	5,546.76	-642.00	-120.00	15.41	1,211.44	1,179.41	171.45	37.814
5,800.00	5,746.76	556.00	-300.00	17.15	5,799.38	5,746.76	-642.00	-120.00	15.72	1,211.44	1,178.76	171.45	37.070
6,000.00	5,946.76	556.00	-300.00	17.47	5,999.38	5,946.76	-642.00	-120.00	16.04	1,211.44	1,178.11	171.45	36.341
6,200.00	6,146.76	556.00	-300.00	17.80	6,199.38	6,146.76	-642.00	-120.00	16.36	1,211.44	1,177.44	171.45	35.629
6,400.00	6,346.76	556.00	-300.00	18.14	6,399.38	6,346.76	-642.00	-120.00	16.69	1,211.44	1,176.77	171.45	34.933
6,600.00	6,546.76	556.00	-300.00	18.48	6,644.92	6,591.21	-641.41	-135.71	17.14	1,209.45	1,174.02	172.19	34.140
6,800.00	6,744.29	555.61	-273.09	18.67	6,872.48	6,802.57	-638.38	-217.33	17.75	1,196.71	1,164.73	177.33	37.417
6,926.23	6,862.14	554.96	-228.31	18.66	6,953.42	6,870.06	-636.73	-261.92	18.04	1,192.19	1,159.73	181.62	36.726
7,000.00	6,926.75	554.45	-192.79	18.66	6,981.84	6,892.50	-636.08	-279.34	18.16	1,194.16	1,161.51	184.16	36.577
7,200.00	7,080.00	552.60	-65.31	18.56	7,010.70	6,914.56	-635.39	-297.93	18.28	1,221.80	1,188.67	191.08	36.876
7,400.00	7,192.18	550.21	99.47	18.48	7,000.00	6,906.47	-635.65	-290.93	18.23	1,280.75	1,246.19	198.22	37.055
7,600.00	7,254.58	547.47	288.78	20.07	6,950.00	6,867.31	-636.80	-259.88	18.02	1,361.44	1,324.91	204.86	37.267
7,800.00	7,266.00	544.58	488.08	22.84	6,900.00	6,826.08	-637.85	-231.63	17.84	1,452.47	1,414.13	211.33	37.889
8,000.00	7,266.00	541.69	688.06	24.60	6,850.00	6,782.98	-638.79	-206.33	17.67	1,557.81	1,517.47	217.15	38.617
8,200.00	7,266.00	538.79	888.04	27.15	6,821.23	6,757.40	-639.28	-193.15	17.59	1,677.94	1,634.52	222.54	38.647
8,400.00	7,266.00	535.89	1,088.02	30.33	6,800.00	6,738.21	-639.62	-184.09	17.52	1,810.70	1,763.52	227.26	38.383
8,600.00	7,266.00	532.99	1,287.99	33.97	6,750.00	6,692.00	-640.33	-165.03	17.39	1,953.82	1,903.01	231.08	38.451
8,800.00	7,266.00	530.10	1,487.97	37.95	6,750.00	6,692.00	-640.33	-165.03	17.39	2,105.18	2,049.61	234.70	37.887
9,000.00	7,266.00	527.20	1,687.95	42.18	6,724.38	6,667.84	-640.64	-156.52	17.32	2,263.56	2,203.57	237.66	37.728
9,200.00	7,266.00	524.30	1,887.93	46.59	6,700.00	6,644.58	-640.91	-149.23	17.26	2,427.74	2,363.22	240.23	37.627
9,400.00	7,266.00	521.41	2,087.91	51.14	6,700.00	6,644.58	-640.91	-149.23	17.26	2,596.53	2,526.86	242.55	37.269
9,600.00	7,266.00	518.51	2,287.89	55.79	6,700.00	6,644.58	-640.91	-149.23	17.26	2,769.47	2,694.57	244.56	36.975
9,800.00	7,266.00	515.61	2,487.87	60.51	6,670.90	6,616.51	-641.20	-141.57	17.20	2,945.17	2,865.78	246.25	37.099
10,000.00	7,266.00	512.71	2,687.85	65.30	6,650.00	6,596.17	-641.37	-136.78	17.15	3,123.96	3,039.90	247.78	37.165

Anticollision Report for Deering 33-4H - 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 11,977.61 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	7,266.00	509.82	2,887.83	70.13	6,650.00	6,596.17	-641.37	-136.78	17.15	3,304.87	3,215.52	249.16	36.986
10,400.00	7,266.00	506.92	3,087.81	75.01	6,650.00	6,596.17	-641.37	-136.78	17.15	3,487.87	3,393.18	250.40	36.838
10,600.00	7,266.00	504.02	3,287.78	79.91	6,650.00	6,596.17	-641.37	-136.78	17.15	3,672.64	3,572.60	251.51	36.715
10,800.00	7,266.00	503.32	3,487.78	84.85	6,650.00	6,596.17	-641.37	-136.78	17.15	3,859.59	3,755.10	252.47	36.939
11,000.00	7,266.00	503.32	3,687.78	89.80	6,624.90	6,571.56	-641.56	-131.81	17.10	4,047.50	3,938.70	253.31	37.203
11,200.00	7,266.00	503.32	3,887.78	94.77	6,600.00	6,547.00	-641.71	-127.73	17.04	4,237.03	4,124.00	254.08	37.488
11,400.00	7,266.00	503.32	4,087.78	99.76	6,600.00	6,547.00	-641.71	-127.73	17.04	4,427.03	4,308.74	254.80	37.425
11,600.00	7,266.00	500.35	4,287.73	104.76	6,600.00	6,547.00	-641.71	-127.73	17.04	4,617.10	4,489.36	255.50	36.146
11,800.00	7,266.00	490.01	4,487.47	109.77	6,600.00	6,547.00	-641.71	-127.73	17.04	4,806.02	4,672.31	256.22	35.944
11,977.61	7,266.00	480.79	4,664.84	114.23	6,600.00	6,547.00	-641.71	-127.73	17.04	4,974.50	4,835.88	256.82	35.886

Anticollision Report for Deering 33-4H - 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 11,977.61 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	-61.93	0.00	0.00	61.97	61.31	180.00	94.396
200.00	200.00	0.00	0.00	0.34	198.00	200.00	-61.93	0.00	0.33	61.93	60.61	180.00	46.706
400.00	400.00	0.00	0.00	0.79	398.00	400.00	-61.93	0.00	0.78	61.93	59.71	180.00	27.834
600.00	600.00	0.00	0.00	1.24	598.00	600.00	-61.93	0.00	1.23	61.93	58.81	180.00	19.824
800.00	800.00	0.00	0.00	1.69	798.00	800.00	-61.93	0.00	1.68	61.93	57.91	180.00	15.394
1,000.00	1,000.00	0.00	0.00	2.14	998.00	1,000.00	-61.93	0.00	2.13	61.93	57.01	180.00	12.582
1,200.00	1,199.75	7.68	-4.14	2.59	1,193.78	1,195.55	-67.18	-6.29	2.52	75.00	69.24	181.64	13.026
1,400.00	1,397.98	30.64	-16.53	3.08	1,389.38	1,390.12	-79.97	-21.64	2.94	111.01	104.39	182.64	16.773
1,600.00	1,594.93	61.21	-33.03	3.68	1,584.54	1,584.21	-93.03	-37.31	3.41	154.67	147.11	181.59	20.475
1,800.00	1,791.90	91.77	-49.52	4.34	1,779.70	1,778.30	-106.09	-52.98	3.92	198.35	189.82	181.00	23.232
2,000.00	1,988.86	122.34	-66.01	5.04	1,974.86	1,972.39	-119.15	-68.65	4.44	242.06	232.50	180.63	25.336
2,200.00	2,185.82	152.90	-82.50	5.76	2,170.02	2,166.49	-132.21	-84.32	4.99	285.77	275.18	180.37	26.980
2,400.00	2,382.78	183.46	-98.99	6.50	2,365.18	2,360.58	-145.27	-100.00	5.54	329.48	317.84	180.17	28.292
2,600.00	2,579.74	214.03	-115.48	7.24	2,568.05	2,562.45	-158.08	-115.37	6.08	372.51	359.82	179.98	29.344
2,800.00	2,776.70	244.59	-131.98	8.00	2,782.45	2,776.70	-161.93	-120.00	6.49	406.70	393.06	178.31	29.800
3,000.00	2,973.66	275.16	-148.47	8.76	2,979.41	2,973.66	-161.93	-120.00	6.86	438.02	423.46	176.27	30.088
3,200.00	3,170.63	305.72	-164.96	9.52	3,176.37	3,170.63	-161.93	-120.00	7.24	469.81	454.35	174.51	30.374
3,400.00	3,367.59	336.29	-181.45	10.29	3,373.33	3,367.59	-161.93	-120.00	7.63	502.00	485.62	172.97	30.654
3,600.00	3,564.55	366.85	-197.94	11.06	3,570.30	3,564.55	-161.93	-120.00	8.02	534.50	517.21	171.61	30.922
3,800.00	3,761.51	397.42	-214.43	11.83	3,767.26	3,761.51	-161.93	-120.00	8.42	567.27	549.07	170.42	31.176
4,000.00	3,958.47	427.98	-230.93	12.61	3,964.22	3,958.47	-161.93	-120.00	8.82	600.25	581.15	169.35	31.415
4,200.00	4,155.43	458.55	-247.42	13.39	4,161.18	4,155.43	-161.93	-120.00	9.22	633.43	613.41	168.40	31.639
4,400.00	4,352.39	489.11	-263.91	14.16	4,358.14	4,352.39	-161.93	-120.00	9.63	666.76	645.83	167.54	31.849
4,600.00	4,549.36	519.67	-280.40	14.94	4,555.10	4,549.36	-161.93	-120.00	10.04	700.23	678.38	166.76	32.046
4,800.00	4,747.19	545.21	-294.18	15.55	4,752.93	4,747.19	-161.93	-120.00	10.46	728.28	705.51	166.16	31.986
5,000.00	4,946.77	555.73	-299.86	15.92	4,952.51	4,946.77	-161.93	-120.00	10.88	739.86	716.35	165.93	31.463
5,200.00	5,146.76	556.00	-300.00	16.21	5,152.51	5,146.76	-161.93	-120.00	11.31	740.16	712.54	165.92	26.801
5,400.00	5,346.76	556.00	-300.00	16.51	5,352.51	5,346.76	-161.93	-120.00	11.73	740.16	711.79	165.92	26.097
5,600.00	5,546.76	556.00	-300.00	16.83	5,552.51	5,546.76	-161.93	-120.00	12.16	740.16	711.04	165.92	25.422
5,800.00	5,746.76	556.00	-300.00	17.15	5,752.51	5,746.76	-161.93	-120.00	12.59	740.16	710.28	165.92	24.776
6,000.00	5,946.76	556.00	-300.00	17.47	5,952.51	5,946.76	-161.93	-120.00	13.02	740.16	709.52	165.92	24.156
6,200.00	6,146.76	556.00	-300.00	17.80	6,152.51	6,146.76	-161.93	-120.00	13.45	740.16	708.74	165.92	23.562
6,400.00	6,346.76	556.00	-300.00	18.14	6,352.51	6,346.76	-161.93	-120.00	13.89	740.16	707.96	165.92	22.993
6,600.00	6,546.76	556.00	-300.00	18.48	6,587.82	6,581.18	-161.79	-133.65	14.43	737.62	704.61	166.95	22.344
6,800.00	6,744.29	555.61	-273.09	18.67	6,804.52	6,784.20	-161.04	-207.05	15.18	720.80	689.09	174.73	22.736
6,908.55	6,846.13	555.07	-235.83	18.66	6,876.15	6,845.30	-160.66	-244.36	15.54	715.79	683.44	180.68	22.132
7,000.00	6,926.75	554.45	-192.79	18.66	6,914.11	6,876.09	-160.44	-266.56	15.75	720.46	687.78	185.89	22.045
7,200.00	7,080.00	552.60	-65.31	18.56	6,950.00	6,904.08	-160.21	-289.02	15.97	767.52	734.35	197.42	23.140
7,400.00	7,192.18	550.21	99.47	18.48	6,934.48	6,892.12	-160.31	-279.13	15.87	859.19	824.87	208.05	25.034
7,600.00	7,254.58	547.47	288.78	20.07	6,900.00	6,864.78	-160.52	-258.12	15.66	975.85	941.17	217.68	28.134
7,800.00	7,266.00	544.58	488.08	22.84	6,850.00	6,823.43	-160.81	-230.03	15.40	1,099.60	1,065.15	225.51	31.914
8,000.00	7,266.00	541.69	688.06	24.60	6,800.00	6,780.22	-161.07	-204.90	15.16	1,235.80	1,200.10	231.80	34.607
8,200.00	7,266.00	538.79	888.04	27.15	6,768.18	6,751.85	-161.21	-190.50	15.03	1,384.77	1,346.71	237.02	36.385
8,400.00	7,266.00	535.89	1,088.02	30.33	6,750.00	6,735.36	-161.29	-182.84	14.96	1,543.61	1,502.38	241.25	37.438
8,600.00	7,266.00	532.99	1,287.99	33.97	6,700.00	6,689.07	-161.48	-163.97	14.78	1,709.78	1,666.02	244.44	39.073
8,800.00	7,266.00	530.10	1,487.97	37.95	6,700.00	6,689.07	-161.48	-163.97	14.78	1,881.50	1,833.56	247.28	39.248
9,000.00	7,266.00	527.20	1,687.95	42.18	6,674.31	6,664.80	-161.57	-155.54	14.69	2,057.74	2,006.34	249.51	40.029
9,200.00	7,266.00	524.30	1,887.93	46.59	6,650.00	6,641.57	-161.64	-148.37	14.61	2,237.62	2,182.70	251.38	40.740
9,400.00	7,266.00	521.41	2,087.91	51.14	6,650.00	6,641.57	-161.64	-148.37	14.61	2,420.21	2,360.83	253.02	40.758
9,600.00	7,266.00	518.51	2,287.89	55.79	6,650.00	6,641.57	-161.64	-148.37	14.61	2,605.36	2,541.45	254.40	40.770
9,800.00	7,266.00	515.61	2,487.87	60.51	6,622.11	6,614.64	-161.72	-141.12	14.53	2,791.89	2,724.66	255.55	41.531

Anticollision Report for Deering 33-4H - 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 11,977.61 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
10,000.00	7,266.00	512.71	2,687.85	65.30	6,600.00	6,593.11	-161.77	-136.12	14.46	2,980.36	2,909.64	256.57	42.145
10,200.00	7,266.00	509.82	2,887.83	70.13	6,600.00	6,593.11	-161.77	-136.12	14.46	3,169.87	3,094.64	257.48	42.137
10,400.00	7,266.00	506.92	3,087.81	75.01	6,600.00	6,593.11	-161.77	-136.12	14.46	3,360.60	3,280.84	258.28	42.133
10,600.00	7,266.00	504.02	3,287.78	79.91	6,600.00	6,593.11	-161.77	-136.12	14.46	3,552.35	3,468.04	259.00	42.131
10,800.00	7,266.00	503.32	3,487.78	84.85	6,600.00	6,593.11	-161.77	-136.12	14.46	3,745.37	3,659.21	259.60	43.471
11,000.00	7,266.00	503.32	3,687.78	89.80	6,576.95	6,570.50	-161.82	-131.62	14.40	3,938.78	3,849.61	260.12	44.175
11,200.00	7,266.00	503.32	3,887.78	94.77	6,571.58	6,565.22	-161.82	-130.68	14.39	4,132.98	4,039.78	260.60	44.344
11,400.00	7,266.00	503.32	4,087.78	99.76	6,550.00	6,543.91	-161.86	-127.29	14.33	4,327.89	4,231.75	261.03	45.015
11,600.00	7,266.00	500.35	4,287.73	104.76	6,550.00	6,543.91	-161.86	-127.29	14.33	4,522.43	4,410.47	261.47	40.395
11,800.00	7,266.00	490.01	4,487.47	109.77	6,550.00	6,543.91	-161.86	-127.29	14.33	4,716.18	4,598.05	261.96	39.923
11,977.61	7,266.00	480.79	4,664.84	114.23	6,550.00	6,543.91	-161.86	-127.29	14.33	4,888.65	4,766.15	262.36	39.910

Anticollision Report for Deering 33-4H - 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 11,977.61 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	40.07	0.00	0.00	40.07	39.42	0.00	61.045
200.00	200.00	0.00	0.00	0.34	200.00	200.00	40.07	0.00	0.34	40.07	38.74	0.00	30.117
400.00	400.00	0.00	0.00	0.79	400.00	400.00	40.07	0.00	0.79	40.07	37.84	0.00	17.973
600.00	600.00	0.00	0.00	1.24	600.00	600.00	40.07	0.00	1.24	40.07	36.94	0.00	12.808
800.00	800.00	0.00	0.00	1.69	796.18	795.94	48.21	-2.04	1.69	48.43	44.40	357.58	12.027
1,000.00	1,000.00	0.00	0.00	2.14	989.53	987.66	72.11	-8.01	2.18	73.60	68.64	353.66	14.846
1,200.00	1,199.75	7.68	-4.14	2.59	1,179.23	1,173.09	110.71	-17.66	2.84	107.28	101.44	352.53	18.361
1,400.00	1,397.98	30.64	-16.53	3.08	1,376.29	1,363.45	160.10	-30.01	3.72	134.66	127.88	354.06	19.861
1,600.00	1,594.93	61.21	-33.03	3.68	1,575.24	1,555.63	210.05	-42.50	4.67	154.24	146.41	356.36	19.691
1,800.00	1,791.90	91.77	-49.52	4.34	1,774.20	1,747.81	260.01	-54.99	5.67	174.01	165.06	358.14	19.457
2,000.00	1,988.86	122.34	-66.01	5.04	1,973.16	1,939.99	309.97	-67.47	6.68	193.90	183.80	359.55	19.212
2,200.00	2,185.82	152.90	-82.50	5.76	2,172.12	2,132.17	359.92	-79.96	7.71	213.88	202.60	0.70	18.972
2,400.00	2,382.78	183.46	-98.99	6.50	2,371.08	2,324.35	409.88	-92.45	8.74	233.93	221.45	1.65	18.747
2,600.00	2,579.74	214.03	-115.48	7.24	2,570.04	2,516.53	459.84	-104.94	9.78	254.03	240.32	2.46	18.539
2,800.00	2,776.70	244.59	-131.98	8.00	2,769.00	2,708.71	509.80	-117.43	10.83	274.16	259.22	3.14	18.349
3,000.00	2,973.66	275.16	-148.47	8.76	2,967.96	2,900.89	559.75	-129.92	11.87	294.34	278.14	3.73	18.177
3,200.00	3,170.63	305.72	-164.96	9.52	3,166.92	3,093.07	609.71	-142.41	12.92	314.53	297.08	4.24	18.020
3,400.00	3,367.59	336.29	-181.45	10.29	3,365.88	3,285.25	659.67	-154.90	13.97	334.75	316.03	4.69	17.878
3,600.00	3,564.55	366.85	-197.94	11.06	3,564.84	3,477.43	709.62	-167.39	15.02	354.99	334.99	5.09	17.749
3,800.00	3,761.51	397.42	-214.43	11.83	3,763.80	3,669.61	759.58	-179.88	16.08	375.24	353.95	5.45	17.630
4,000.00	3,958.47	427.98	-230.93	12.61	3,962.76	3,861.79	809.54	-192.37	17.13	395.50	372.93	5.77	17.523
4,200.00	4,155.43	458.55	-247.42	13.39	4,161.72	4,053.97	859.49	-204.86	18.18	415.77	391.91	6.06	17.424
4,400.00	4,352.39	489.11	-263.91	14.16	4,360.68	4,246.15	909.45	-217.35	19.24	436.05	410.90	6.32	17.333
4,600.00	4,549.36	519.67	-280.40	14.94	4,559.64	4,438.33	959.41	-229.83	20.29	456.34	429.89	6.56	17.249
4,800.00	4,747.19	545.21	-294.18	15.55	4,758.01	4,629.94	1,009.22	-242.29	21.35	481.40	453.86	6.38	17.483
5,000.00	4,946.77	555.73	-299.86	15.92	4,953.78	4,819.05	1,058.37	-254.58	22.38	520.59	492.39	5.15	18.466
5,200.00	5,146.76	556.00	-300.00	16.21	5,147.04	5,005.72	1,106.90	-266.71	23.41	569.64	531.15	3.46	14.798
5,400.00	5,346.76	556.00	-300.00	16.51	5,340.23	5,192.32	1,155.41	-278.83	24.44	619.35	579.33	2.02	15.479
5,600.00	5,546.76	556.00	-300.00	16.83	5,594.98	5,440.78	1,209.47	-292.35	25.42	662.05	620.56	0.67	15.958
5,800.00	5,746.76	556.00	-300.00	17.15	5,873.03	5,717.12	1,237.84	-299.44	26.04	682.49	639.97	0.05	16.054
6,000.00	5,946.76	556.00	-300.00	17.47	6,102.71	5,946.76	1,240.07	-300.00	26.30	684.07	640.96	0.00	15.865
6,200.00	6,146.76	556.00	-300.00	17.80	6,302.71	6,146.76	1,240.07	-300.00	26.51	684.07	640.40	0.00	15.663
6,400.00	6,346.76	556.00	-300.00	18.14	6,502.71	6,346.76	1,240.07	-300.00	26.73	684.07	639.83	0.00	15.461
6,600.00	6,546.76	556.00	-300.00	18.48	6,703.33	6,546.98	1,239.96	-291.96	26.92	684.01	639.28	0.67	15.292
6,609.45	6,556.22	556.00	-299.94	18.49	6,712.68	6,556.22	1,239.94	-290.50	26.92	684.01	649.92	0.79	20.067
6,800.00	6,744.29	555.61	-273.09	18.67	6,897.36	6,732.60	1,239.21	-237.50	26.96	684.62	649.83	2.98	19.676
7,000.00	6,926.75	554.45	-192.79	18.66	7,084.36	6,891.43	1,237.85	-139.82	26.89	686.37	651.13	4.43	19.476
7,200.00	7,080.00	552.60	-65.31	18.56	7,265.82	7,016.38	1,236.04	-8.92	26.82	688.71	652.73	4.72	19.140
7,400.00	7,192.18	550.21	99.47	18.48	7,443.22	7,103.01	1,233.90	145.36	26.84	691.01	653.02	3.84	18.191
7,600.00	7,254.58	547.47	288.78	20.07	7,618.00	7,148.79	1,231.58	313.56	27.13	692.68	650.75	2.07	16.519
7,800.00	7,266.00	544.58	488.08	22.84	7,799.92	7,154.61	1,229.06	495.10	28.43	693.52	646.64	0.59	14.795
8,000.00	7,266.00	541.69	688.06	24.60	7,999.87	7,150.20	1,226.29	694.98	29.60	694.37	644.40	0.58	13.897
8,200.00	7,266.00	538.79	888.04	27.15	8,199.82	7,145.78	1,223.53	894.87	31.37	695.24	640.46	0.57	12.690
8,400.00	7,266.00	535.89	1,088.02	30.33	8,399.77	7,141.37	1,220.76	1,094.75	33.81	696.14	635.23	0.56	11.429
8,600.00	7,266.00	532.99	1,287.99	33.97	8,599.72	7,136.96	1,217.99	1,294.63	36.86	697.07	629.10	0.56	10.255
8,800.00	7,266.00	530.10	1,487.97	37.95	8,799.67	7,132.55	1,215.22	1,494.52	40.38	698.03	622.32	0.55	9.220
9,000.00	7,266.00	527.20	1,687.95	42.18	8,999.63	7,128.14	1,212.45	1,694.40	44.25	699.01	615.11	0.54	8.331
9,200.00	7,266.00	524.30	1,887.93	46.59	9,199.58	7,123.72	1,209.68	1,894.28	48.38	700.02	607.58	0.53	7.572
9,400.00	7,266.00	521.41	2,087.91	51.14	9,399.53	7,119.31	1,206.92	2,094.17	52.71	701.06	599.83	0.52	6.926
9,600.00	7,266.00	518.51	2,287.89	55.79	9,599.48	7,114.90	1,204.15	2,294.05	57.17	702.12	591.94	0.51	6.372
9,800.00	7,266.00	515.61	2,487.87	60.51	9,799.43	7,110.49	1,201.38	2,493.93	61.75	703.21	583.94	0.51	5.896
10,000.00	7,266.00	512.71	2,687.85	65.30	9,999.38	7,106.07	1,198.61	2,693.82	66.42	704.32	575.87	0.50	5.483

Anticollision Report for Deering 33-4H - 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 11,977.61 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	7,266.00	509.82	2,887.83	70.13	10,199.33	7,101.66	1,195.84	2,893.70	71.15	705.46	567.77	0.49	5.123
10,400.00	7,266.00	506.92	3,087.81	75.01	10,399.29	7,097.25	1,193.08	3,093.58	75.93	706.62	559.63	0.48	4.807
10,600.00	7,266.00	504.02	3,287.78	79.91	10,599.24	7,092.84	1,190.31	3,293.47	80.76	707.82	551.49	0.47	4.528
10,800.00	7,266.00	503.32	3,487.78	84.85	10,799.17	7,088.43	1,187.54	3,493.34	85.62	706.91	541.06	0.47	4.262
11,000.00	7,266.00	503.32	3,687.78	89.80	10,999.11	7,084.01	1,184.77	3,693.20	90.52	705.36	530.19	0.46	4.027
11,200.00	7,266.00	503.32	3,887.78	94.77	11,199.04	7,079.60	1,182.00	3,893.06	95.44	703.84	519.36	0.45	3.815
11,400.00	7,266.00	503.32	4,087.78	99.76	11,398.97	7,075.19	1,179.24	4,092.93	100.38	702.35	508.58	0.44	3.625
11,478.41	7,266.00	502.62	4,166.18	101.72	11,477.36	7,073.46	1,178.15	4,171.29	102.32	702.45	505.30	0.43	3.563
11,600.00	7,266.00	500.35	4,287.73	104.76	11,598.90	7,070.78	1,176.47	4,292.79	105.33	703.76	501.45	0.43	3.479
11,800.00	7,266.00	490.01	4,487.47	109.77	11,798.71	7,066.37	1,173.70	4,492.53	110.31	712.25	500.60	0.42	3.365
11,977.61	7,266.00	480.79	4,664.84	114.23	11,966.19	7,062.68	1,171.38	4,659.96	114.48	719.92	500.07	359.60	3.275

Anticollision Report for Deering 33-4H - 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 33-5H - Plan A - Rev A0 (Permitting Plan Only)

Scan Range: 0.00 to 11,977.61 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	-21.85	0.00	0.00	21.85	21.20	179.99	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	179.99	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	179.99	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	179.99	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	179.99	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	179.99	4.435
1,200.00	1,199.75	7.68	-4.14	2.59	1,199.75	1,199.75	-21.85	0.00	2.58	29.82	24.00	172.01	5.126
1,400.00	1,397.98	30.64	-16.53	3.08	1,400.92	1,400.66	-17.69	-7.75	3.02	49.20	42.53	169.70	7.374
1,600.00	1,594.93	61.21	-33.03	3.68	1,601.65	1,599.81	-5.93	-29.66	3.51	67.40	59.75	177.13	8.806
1,800.00	1,791.90	91.77	-49.52	4.34	1,800.72	1,796.95	7.17	-54.07	4.06	84.87	76.12	183.08	9.699
2,000.00	1,988.86	122.34	-66.01	5.04	1,999.80	1,994.09	20.27	-78.49	4.64	102.96	93.03	186.97	10.375
2,200.00	2,185.82	152.90	-82.50	5.76	2,198.88	2,191.24	33.37	-102.90	5.25	121.38	110.23	189.69	10.887
2,400.00	2,382.78	183.46	-98.99	6.50	2,397.96	2,388.38	46.48	-127.31	5.87	140.00	127.59	191.68	11.281
2,600.00	2,579.74	214.03	-115.48	7.24	2,597.04	2,585.52	59.58	-151.73	6.51	158.75	145.05	193.21	11.589
2,800.00	2,776.70	244.59	-131.98	8.00	2,796.12	2,782.66	72.68	-176.14	7.16	177.60	162.59	194.41	11.835
3,000.00	2,973.66	275.16	-148.47	8.76	2,995.20	2,979.80	85.78	-200.55	7.81	196.51	180.18	195.38	12.036
3,200.00	3,170.63	305.72	-164.96	9.52	3,194.27	3,176.94	98.88	-224.97	8.47	215.46	197.80	196.18	12.201
3,400.00	3,367.59	336.29	-181.45	10.29	3,393.35	3,374.08	111.98	-249.38	9.14	234.45	215.45	196.85	12.340
3,600.00	3,564.55	366.85	-197.94	11.06	3,592.43	3,571.22	125.08	-273.79	9.80	253.47	233.13	197.42	12.457
3,800.00	3,761.51	397.42	-214.43	11.83	3,788.26	3,765.67	135.90	-293.94	10.33	273.37	251.86	196.91	12.711
4,000.00	3,958.47	427.98	-230.93	12.61	3,981.24	3,958.47	139.15	-300.00	10.67	296.98	274.69	193.45	13.326
4,200.00	4,155.43	458.55	-247.42	13.39	4,178.20	4,155.43	139.15	-300.00	11.02	323.70	300.72	189.35	14.086
4,400.00	4,352.39	489.11	-263.91	14.16	4,375.16	4,352.39	139.15	-300.00	11.38	351.82	328.13	185.89	14.851
4,600.00	4,549.36	519.67	-280.40	14.94	4,572.12	4,549.36	139.15	-300.00	11.74	381.03	356.61	182.95	15.606
4,800.00	4,747.19	545.21	-294.18	15.55	4,769.95	4,747.19	139.15	-300.00	12.11	406.10	380.99	180.82	16.170
5,000.00	4,946.77	555.73	-299.86	15.92	4,969.53	4,946.77	139.15	-300.00	12.49	416.59	390.86	180.02	16.192
5,200.00	5,146.76	556.00	-300.00	16.21	5,169.53	5,146.76	139.15	-300.00	12.88	416.85	389.19	180.00	15.069
5,400.00	5,346.76	556.00	-300.00	16.51	5,369.53	5,346.76	139.15	-300.00	13.27	416.85	388.45	180.00	14.677
5,600.00	5,546.76	556.00	-300.00	16.83	5,569.53	5,546.76	139.15	-300.00	13.66	416.85	387.70	180.00	14.300
5,800.00	5,746.76	556.00	-300.00	17.15	5,769.53	5,746.76	139.15	-300.00	14.06	416.85	386.94	180.00	13.939
6,000.00	5,946.76	556.00	-300.00	17.47	5,969.53	5,946.76	139.15	-300.00	14.45	416.85	386.18	180.00	13.592
6,200.00	6,146.76	556.00	-300.00	17.80	6,169.53	6,146.76	139.15	-300.00	14.86	416.85	385.41	180.00	13.259
6,400.00	6,346.76	556.00	-300.00	18.14	6,369.53	6,346.76	139.15	-300.00	15.26	416.85	384.64	180.00	12.940
6,503.20	6,449.96	556.00	-300.00	18.31	6,472.73	6,449.96	139.15	-299.93	15.47	416.85	384.23	179.99	12.780
6,600.00	6,546.76	556.00	-300.00	18.48	6,568.74	6,545.59	139.15	-292.17	15.60	416.93	383.89	178.92	12.621
6,800.00	6,744.29	555.61	-273.09	18.67	6,760.49	6,729.23	139.14	-238.99	15.73	418.13	386.16	175.32	13.078
7,000.00	6,926.75	554.45	-192.79	18.66	6,945.68	6,887.14	139.14	-143.25	15.82	420.12	388.14	173.20	13.134
7,200.00	7,080.00	552.60	-65.31	18.56	7,125.79	7,012.29	139.13	-14.39	16.27	422.06	389.47	172.98	12.950
7,400.00	7,192.18	550.21	99.47	18.48	7,300.00	7,099.15	139.12	136.13	17.50	423.08	388.56	174.90	12.256
7,600.00	7,254.58	547.47	288.78	20.07	7,476.60	7,147.57	139.11	305.50	19.62	422.48	384.19	177.66	11.034
7,800.00	7,266.00	544.58	488.08	22.84	7,657.16	7,154.82	139.10	485.60	22.14	420.46	377.43	180.35	9.771
8,000.00	7,266.00	541.69	688.06	24.60	7,857.10	7,150.42	139.09	685.49	23.96	418.87	372.64	180.37	9.061
8,200.00	7,266.00	538.79	888.04	27.15	8,057.03	7,146.02	139.07	885.37	26.43	417.34	366.43	180.38	8.197
8,400.00	7,266.00	535.89	1,088.02	30.33	8,256.96	7,141.61	139.06	1,085.25	29.58	415.88	359.01	180.40	7.313
8,600.00	7,266.00	532.99	1,287.99	33.97	8,456.89	7,137.21	139.05	1,285.13	33.22	414.47	350.77	180.42	6.506
8,800.00	7,266.00	530.10	1,487.97	37.95	8,656.82	7,132.81	139.04	1,485.02	37.21	413.13	342.00	180.43	5.808
9,000.00	7,266.00	527.20	1,687.95	42.18	8,856.75	7,128.40	139.03	1,684.90	41.45	411.85	332.91	180.45	5.217
9,200.00	7,266.00	524.30	1,887.93	46.59	9,056.68	7,124.00	139.01	1,884.78	45.87	410.63	323.63	180.47	4.720
9,400.00	7,266.00	521.41	2,087.91	51.14	9,256.61	7,119.60	139.00	2,084.66	50.43	409.48	314.26	180.49	4.300
9,600.00	7,266.00	518.51	2,287.89	55.79	9,456.54	7,115.20	138.99	2,284.54	55.08	408.40	304.87	180.51	3.945
9,800.00	7,266.00	515.61	2,487.87	60.51	9,656.47	7,110.79	138.98	2,484.43	59.81	407.38	295.50	180.52	3.641

Anticollision Report for Deering 33-4H - 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 33-5H - Plan A - Rev A0 (Permitting Plan Only)

Scan Range: 0.00 to 11,977.61 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
10,000.00	7,266.00	512.71	2,687.85	65.30	9,856.40	7,106.39	138.96	2,684.31	64.60	406.42	286.19	180.54	3.380
10,200.00	7,266.00	509.82	2,887.83	70.13	10,056.33	7,101.99	138.95	2,884.19	69.44	405.53	276.98	180.56	3.155
10,400.00	7,266.00	506.92	3,087.81	75.01	10,256.26	7,097.58	138.94	3,084.07	74.31	404.71	267.88	180.58	2.958
10,600.00	7,266.00	504.02	3,287.78	79.91	10,456.19	7,093.18	138.93	3,283.96	79.22	403.95	258.90	180.60	2.785
10,628.22	7,266.00	503.64	3,316.00	80.61	10,484.40	7,092.56	138.92	3,312.16	79.91	403.88	257.12	180.60	2.752
10,800.00	7,266.00	503.32	3,487.78	84.85	10,656.14	7,088.78	138.91	3,483.85	84.15	405.23	251.80	180.62	2.641
11,000.00	7,266.00	503.32	3,687.78	89.80	10,856.09	7,084.37	138.90	3,683.76	89.10	407.19	245.47	180.63	2.518
11,200.00	7,266.00	503.32	3,887.78	94.77	11,056.04	7,079.97	138.89	3,883.66	94.08	409.18	239.22	180.65	2.407
11,400.00	7,266.00	503.32	4,087.78	99.76	11,256.00	7,075.57	138.88	4,083.56	99.06	411.21	233.07	180.66	2.308
11,600.00	7,266.00	500.35	4,287.73	104.76	11,455.90	7,071.16	138.86	4,283.42	104.06	410.67	225.14	180.68	2.213
11,800.00	7,266.00	490.01	4,487.47	109.77	11,655.59	7,066.77	138.85	4,483.06	109.06	403.77	211.51	180.72	2.100
11,977.61	7,266.00	480.79	4,664.84	114.23	11,832.91	7,062.86	138.84	4,660.34	113.52	397.76	199.74	180.75	2.009

Anticollision Report for Deering 33-4H - 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 11,977.61 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	58.29	0.00	0.00	58.29	57.63	0.00	88.645
200.00	200.00	0.00	0.00	0.34	201.00	200.00	58.29	0.00	0.34	58.29	56.96	0.00	43.735
400.00	400.00	0.00	0.00	0.79	401.00	400.00	58.29	0.00	0.79	58.29	56.06	0.00	26.117
465.41	465.41	0.00	0.00	0.93	466.41	465.41	58.29	0.00	0.94	58.29	55.76	0.00	23.077
600.00	600.00	0.00	0.00	1.24	598.49	597.46	60.36	-0.45	1.23	60.41	57.28	359.57	19.324
800.00	800.00	0.00	0.00	1.69	792.12	790.33	76.44	-4.03	1.70	77.15	73.12	356.98	19.110
1,000.00	1,000.00	0.00	0.00	2.14	981.64	977.11	107.51	-10.93	2.27	110.47	105.47	354.19	22.105
1,200.00	1,199.75	7.68	-4.14	2.59	1,166.75	1,156.39	152.30	-20.89	3.05	151.91	146.05	353.40	25.903
1,400.00	1,397.98	30.64	-16.53	3.08	1,359.53	1,339.92	209.88	-33.68	4.07	189.19	182.36	354.53	27.718
1,600.00	1,594.93	61.21	-33.03	3.68	1,557.17	1,527.89	269.50	-46.93	5.21	219.26	211.36	356.18	27.739
1,800.00	1,791.90	91.77	-49.52	4.34	1,754.82	1,715.86	329.12	-60.18	6.38	249.46	240.42	357.43	27.605
2,000.00	1,988.86	122.34	-66.01	5.04	1,952.47	1,903.83	388.75	-73.43	7.57	279.75	269.54	358.40	27.413
2,200.00	2,185.82	152.90	-82.50	5.76	2,150.12	2,091.81	448.37	-86.68	8.76	310.09	298.69	359.19	27.202
2,400.00	2,382.78	183.46	-98.99	6.50	2,347.76	2,279.78	507.99	-99.93	9.97	340.48	327.86	359.83	26.990
2,600.00	2,579.74	214.03	-115.48	7.24	2,545.41	2,467.75	567.61	-113.18	11.18	370.90	357.05	0.37	26.788
2,800.00	2,776.70	244.59	-131.98	8.00	2,743.06	2,655.73	627.23	-126.43	12.39	401.35	386.26	0.83	26.600
3,000.00	2,973.66	275.16	-148.47	8.76	2,940.70	2,843.70	686.86	-139.68	13.61	431.81	415.47	1.22	26.425
3,200.00	3,170.63	305.72	-164.96	9.52	3,138.35	3,031.67	746.48	-152.93	14.82	462.29	444.69	1.56	26.264
3,400.00	3,367.59	336.29	-181.45	10.29	3,336.00	3,219.65	806.10	-166.18	16.04	492.79	473.92	1.86	26.117
3,600.00	3,564.55	366.85	-197.94	11.06	3,533.64	3,407.62	865.72	-179.42	17.26	523.30	503.16	2.13	25.982
3,800.00	3,761.51	397.42	-214.43	11.83	3,731.29	3,595.59	925.34	-192.67	18.48	553.81	532.39	2.36	25.858
4,000.00	3,958.47	427.98	-230.93	12.61	3,928.94	3,783.57	984.97	-205.92	19.70	584.33	561.64	2.57	25.744
4,200.00	4,155.43	458.55	-247.42	13.39	4,126.59	3,971.54	1,044.59	-219.17	20.93	614.86	590.88	2.76	25.640
4,400.00	4,352.39	489.11	-263.91	14.16	4,324.23	4,159.52	1,104.21	-232.42	22.15	645.40	620.13	2.93	25.543
4,600.00	4,549.36	519.67	-280.40	14.94	4,521.88	4,347.49	1,163.83	-245.67	23.37	675.94	649.38	3.09	25.453
4,800.00	4,747.19	545.21	-294.18	15.55	4,718.65	4,534.63	1,223.19	-258.86	24.59	711.40	683.77	2.98	25.749
5,000.00	4,946.77	555.73	-299.86	15.92	4,912.02	4,718.53	1,281.52	-271.82	25.79	761.34	733.00	2.21	26.865
5,200.00	5,146.76	556.00	-300.00	16.21	5,173.14	4,969.42	1,351.80	-287.44	27.03	815.41	772.95	0.90	19.203
5,400.00	5,346.76	556.00	-300.00	16.51	5,478.81	5,271.03	1,398.86	-297.90	27.91	846.26	802.50	0.14	19.340
5,600.00	5,546.76	556.00	-300.00	16.83	5,754.84	5,546.76	1,408.29	-300.00	28.27	852.29	807.83	0.00	19.169
5,800.00	5,746.76	556.00	-300.00	17.15	5,954.84	5,746.76	1,408.29	-300.00	28.45	852.29	807.31	0.00	18.949
6,000.00	5,946.76	556.00	-300.00	17.47	6,154.84	5,946.76	1,408.29	-300.00	28.64	852.29	806.78	0.00	18.729
6,200.00	6,146.76	556.00	-300.00	17.80	6,354.84	6,146.76	1,408.29	-300.00	28.83	852.29	806.25	0.00	18.511
6,400.00	6,346.76	556.00	-300.00	18.14	6,554.84	6,346.76	1,408.29	-300.00	29.03	852.29	805.70	0.00	18.293
6,600.00	6,546.76	556.00	-300.00	18.48	6,756.31	6,547.81	1,408.14	-291.68	29.20	852.18	805.11	0.56	18.104
6,654.28	6,600.99	555.97	-297.98	18.53	6,810.16	6,600.68	1,407.96	-281.51	29.23	852.15	817.54	1.11	24.622
6,800.00	6,744.29	555.61	-273.09	18.67	6,951.62	6,734.45	1,407.16	-236.22	29.24	852.40	817.30	2.48	24.287
7,000.00	6,926.75	554.45	-192.79	18.66	7,139.54	6,893.56	1,405.40	-137.26	29.17	853.41	817.88	3.73	24.022
7,200.00	7,080.00	552.60	-65.31	18.56	7,321.60	7,018.13	1,403.05	-5.18	29.10	854.82	818.50	4.04	23.539
7,400.00	7,192.18	550.21	99.47	18.48	7,500.00	7,104.12	1,400.28	150.57	29.11	856.15	817.75	3.44	22.296
7,600.00	7,254.58	547.47	288.78	20.07	7,674.13	7,148.49	1,397.30	318.48	29.34	856.94	814.55	2.00	20.215
7,800.00	7,266.00	544.58	488.08	22.84	7,856.69	7,153.48	1,394.06	500.69	30.40	856.99	809.93	0.85	18.209
8,000.00	7,266.00	541.69	688.06	24.60	8,056.64	7,149.07	1,390.51	700.56	31.38	856.93	806.65	0.84	17.041
8,200.00	7,266.00	538.79	888.04	27.15	8,256.59	7,144.66	1,386.96	900.43	32.93	856.90	801.67	0.84	15.515
8,400.00	7,266.00	535.89	1,088.02	30.33	8,456.54	7,140.25	1,383.41	1,100.30	35.14	856.88	795.41	0.83	13.940
8,411.39	7,266.00	535.73	1,099.40	30.53	8,467.92	7,140.00	1,383.21	1,111.68	35.29	856.88	795.02	0.83	13.851
8,600.00	7,266.00	532.99	1,287.99	33.97	8,656.49	7,135.84	1,379.86	1,300.17	38.00	856.89	788.25	0.82	12.483
8,800.00	7,266.00	530.10	1,487.97	37.95	8,856.44	7,131.43	1,376.31	1,500.04	41.39	856.93	780.45	0.82	11.205
9,000.00	7,266.00	527.20	1,687.95	42.18	9,056.39	7,127.01	1,372.75	1,699.91	45.17	856.98	772.20	0.81	10.108
9,200.00	7,266.00	524.30	1,887.93	46.59	9,256.34	7,122.60	1,369.20	1,899.78	49.24	857.06	763.64	0.80	9.174
9,400.00	7,266.00	521.41	2,087.91	51.14	9,456.29	7,118.19	1,365.65	2,099.65	53.52	857.17	754.85	0.80	8.377
9,600.00	7,266.00	518.51	2,287.89	55.79	9,656.24	7,113.78	1,362.10	2,299.52	57.96	857.29	745.90	0.79	7.696

Anticollision Report for Deering 33-4H - 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 11,977.61 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	7,266.00	515.61	2,487.87	60.51	9,856.19	7,109.37	1,358.55	2,499.39	62.51	857.44	736.85	0.78	7.110
10,000.00	7,266.00	512.71	2,687.85	65.30	10,056.14	7,104.95	1,355.00	2,699.26	67.15	857.62	727.71	0.78	6.602
10,200.00	7,266.00	509.82	2,887.83	70.13	10,256.09	7,100.54	1,351.44	2,899.13	71.86	857.81	718.53	0.77	6.159
10,400.00	7,266.00	506.92	3,087.81	75.01	10,456.04	7,096.13	1,347.89	3,099.00	76.63	858.03	709.31	0.76	5.769
10,600.00	7,266.00	504.02	3,287.78	79.91	10,655.99	7,091.72	1,344.34	3,298.87	81.45	858.27	700.07	0.76	5.425
10,800.00	7,266.00	503.32	3,487.78	84.85	10,855.92	7,087.31	1,340.79	3,498.72	86.31	856.40	688.48	0.75	5.100
11,000.00	7,266.00	503.32	3,687.78	89.80	11,055.84	7,082.90	1,337.24	3,698.56	91.19	853.86	676.44	0.74	4.813
11,200.00	7,266.00	503.32	3,887.78	94.77	11,255.76	7,078.48	1,333.69	3,898.40	96.10	851.35	664.43	0.73	4.555
11,400.00	7,266.00	503.32	4,087.78	99.76	11,455.68	7,074.07	1,330.14	4,098.24	101.04	848.87	652.45	0.72	4.322
11,501.56	7,266.00	502.14	4,189.33	102.30	11,557.20	7,071.83	1,328.33	4,199.72	103.55	848.77	647.88	0.72	4.225
11,600.00	7,266.00	500.35	4,287.73	104.76	11,655.60	7,069.66	1,326.59	4,298.08	105.99	849.31	644.20	0.72	4.141
11,800.00	7,266.00	490.01	4,487.47	109.77	11,855.44	7,065.25	1,323.04	4,497.84	110.96	856.93	642.35	0.71	3.994
11,977.61	7,266.00	480.79	4,664.84	114.23	12,017.51	7,061.68	1,320.16	4,659.84	114.99	863.90	641.13	359.66	3.878

Anticollision Report for Deering 33-4H - 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 11,977.61 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	18.22	0.00	0.00	18.22	17.56	0.01	27.710
200.00	200.00	0.00	0.00	0.34	201.00	200.00	18.22	0.00	0.34	18.22	16.89	0.01	13.671
400.00	400.00	0.00	0.00	0.79	401.00	400.00	18.22	0.00	0.79	18.22	15.99	0.01	8.164
600.00	600.00	0.00	0.00	1.24	601.00	600.00	18.22	0.00	1.24	18.22	15.09	0.01	5.820
733.00	733.00	0.00	0.00	1.54	734.00	733.00	18.22	0.00	1.54	18.22	14.49	0.01	4.887
800.00	800.00	0.00	0.00	1.69	800.99	799.99	18.22	0.00	1.69	18.22	14.19	0.01	4.521
1,000.00	1,000.00	0.00	0.00	2.14	999.00	997.75	26.39	-2.78	2.14	26.64	21.71	353.98	5.403
1,200.00	1,199.75	7.68	-4.14	2.59	1,195.27	1,192.32	50.40	-10.97	2.63	43.90	38.08	350.92	7.544
1,400.00	1,397.98	30.64	-16.53	3.08	1,391.92	1,384.63	89.13	-24.17	3.28	60.48	53.75	352.56	8.995
1,600.00	1,594.93	61.21	-33.03	3.68	1,591.53	1,579.12	131.63	-38.66	4.07	72.40	64.65	355.42	9.345
1,800.00	1,791.90	91.77	-49.52	4.34	1,791.15	1,773.63	174.14	-53.15	4.91	84.44	75.62	357.47	9.566
2,000.00	1,988.86	122.34	-66.01	5.04	1,990.77	1,968.13	216.64	-67.64	5.79	96.57	86.62	359.01	9.704
2,200.00	2,185.82	152.90	-82.50	5.76	2,190.39	2,162.63	259.14	-82.13	6.69	108.74	97.63	0.20	9.790
2,400.00	2,382.78	183.46	-98.99	6.50	2,390.01	2,357.13	301.64	-96.62	7.60	120.95	108.66	1.15	9.843
2,600.00	2,579.74	214.03	-115.48	7.24	2,589.63	2,551.63	344.15	-111.11	8.52	133.19	119.70	1.93	9.875
2,800.00	2,776.70	244.59	-131.98	8.00	2,789.24	2,746.14	386.65	-125.60	9.44	145.44	130.74	2.57	9.893
3,000.00	2,973.66	275.16	-148.47	8.76	2,988.86	2,940.64	429.15	-140.09	10.37	157.72	141.79	3.11	9.902
3,200.00	3,170.63	305.72	-164.96	9.52	3,188.48	3,135.14	471.65	-154.58	11.30	170.00	152.84	3.58	9.905
3,400.00	3,367.59	336.29	-181.45	10.29	3,388.10	3,329.64	514.15	-169.07	12.24	182.29	163.88	3.98	9.904
3,600.00	3,564.55	366.85	-197.94	11.06	3,587.72	3,524.14	556.66	-183.56	13.17	194.59	174.94	4.33	9.900
3,800.00	3,761.51	397.42	-214.43	11.83	3,787.33	3,718.65	599.16	-198.04	14.11	206.90	185.99	4.64	9.895
4,000.00	3,958.47	427.98	-230.93	12.61	3,986.95	3,913.15	641.66	-212.53	15.05	219.21	197.04	4.92	9.889
4,200.00	4,155.43	458.55	-247.42	13.39	4,186.57	4,107.65	684.16	-227.02	15.99	231.52	208.09	5.16	9.882
4,400.00	4,352.39	489.11	-263.91	14.16	4,386.19	4,302.15	726.67	-241.51	16.94	243.84	219.15	5.39	9.874
4,600.00	4,549.36	519.67	-280.40	14.94	4,585.81	4,496.65	769.17	-256.00	17.88	256.16	230.20	5.59	9.867
4,800.00	4,747.19	545.21	-294.18	15.55	4,785.00	4,690.75	811.58	-270.46	18.82	273.32	246.34	5.09	10.129
5,000.00	4,946.77	555.73	-299.86	15.92	4,989.38	4,890.04	854.40	-285.06	19.75	304.37	276.89	2.84	11.078
5,200.00	5,146.76	556.00	-300.00	16.21	5,216.84	5,114.81	886.93	-296.15	20.40	332.49	296.83	0.67	9.324
5,400.00	5,346.76	556.00	-300.00	16.51	5,448.95	5,346.50	898.22	-300.00	20.78	342.22	305.77	0.00	9.388
5,600.00	5,546.76	556.00	-300.00	16.83	5,649.21	5,546.76	898.22	-300.00	21.02	342.22	305.20	0.00	9.243
5,800.00	5,746.76	556.00	-300.00	17.15	5,849.21	5,746.76	898.22	-300.00	21.27	342.22	304.61	0.00	9.098
6,000.00	5,946.76	556.00	-300.00	17.47	6,049.21	5,946.76	898.22	-300.00	21.53	342.22	304.01	0.00	8.955
6,200.00	6,146.76	556.00	-300.00	17.80	6,249.21	6,146.76	898.22	-300.00	21.80	342.22	303.39	0.00	8.814
6,400.00	6,346.76	556.00	-300.00	18.14	6,449.21	6,346.76	898.22	-300.00	22.07	342.22	302.77	0.00	8.675
6,527.92	6,474.68	556.00	-300.00	18.36	6,577.23	6,474.77	898.21	-299.10	22.23	342.22	302.38	0.15	8.591
6,600.00	6,546.76	556.00	-300.00	18.48	6,648.80	6,545.96	898.16	-291.96	22.30	342.25	302.34	1.35	8.575
6,800.00	6,744.29	555.61	-273.09	18.67	6,841.10	6,729.99	897.73	-238.21	22.35	344.19	309.89	5.82	10.033
7,000.00	6,926.75	554.45	-192.79	18.66	7,026.65	6,887.93	896.97	-141.82	22.29	348.46	313.62	8.46	10.002
7,200.00	7,080.00	552.60	-65.31	18.56	7,206.97	7,012.79	895.95	-12.39	22.21	353.84	318.53	8.76	10.020
7,400.00	7,192.18	550.21	99.47	18.48	7,383.55	7,100.04	894.74	140.61	22.23	359.00	322.16	6.81	9.744
7,600.00	7,254.58	547.47	288.78	20.07	7,557.80	7,146.95	893.41	307.97	22.74	362.81	322.40	3.17	8.979
7,800.00	7,266.00	544.58	488.08	22.84	7,738.61	7,153.76	891.99	488.35	24.60	365.09	320.00	0.04	8.097
8,000.00	7,266.00	541.69	688.06	24.60	7,938.56	7,149.35	890.41	688.24	26.24	367.71	319.67	0.03	7.654
8,200.00	7,266.00	538.79	888.04	27.15	8,138.51	7,144.94	888.83	888.13	28.57	370.38	317.74	0.02	7.036
8,400.00	7,266.00	535.89	1,088.02	30.33	8,338.46	7,140.53	887.25	1,088.03	31.54	373.08	314.62	0.00	6.382
8,600.00	7,266.00	532.99	1,287.99	33.97	8,538.40	7,136.12	885.66	1,287.92	35.01	375.82	310.68	359.99	5.769
8,800.00	7,266.00	530.10	1,487.97	37.95	8,738.35	7,131.71	884.08	1,487.81	38.87	378.60	306.17	359.97	5.227
9,000.00	7,266.00	527.20	1,687.95	42.18	8,938.30	7,127.30	882.50	1,687.70	42.99	381.41	301.28	359.96	4.760
9,200.00	7,266.00	524.30	1,887.93	46.59	9,138.24	7,122.89	880.92	1,887.59	47.32	384.26	296.15	359.95	4.361
9,400.00	7,266.00	521.41	2,087.91	51.14	9,338.19	7,118.48	879.34	2,087.49	51.80	387.14	290.87	359.93	4.021
9,600.00	7,266.00	518.51	2,287.89	55.79	9,538.14	7,114.08	877.76	2,287.38	56.39	390.06	285.49	359.92	3.730
9,800.00	7,266.00	515.61	2,487.87	60.51	9,738.08	7,109.67	876.18	2,487.27	61.07	393.00	280.06	359.91	3.480

Anticollision Report for Deering 33-4H - 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 11,977.61 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
10,000.00	7,266.00	512.71	2,687.85	65.30	9,938.03	7,105.26	874.60	2,687.16	65.82	395.98	274.62	359.89	3.263
10,200.00	7,266.00	509.82	2,887.83	70.13	10,137.98	7,100.85	873.02	2,887.06	70.62	398.99	269.18	359.88	3.074
10,400.00	7,266.00	506.92	3,087.81	75.01	10,337.93	7,096.44	871.44	3,086.95	75.46	402.03	263.76	359.87	2.908
10,600.00	7,266.00	504.02	3,287.78	79.91	10,537.87	7,092.03	869.86	3,286.84	80.34	405.09	258.39	359.85	2.761
10,800.00	7,266.00	503.32	3,487.78	84.85	10,737.82	7,087.62	868.28	3,486.73	85.25	406.22	251.08	359.84	2.618
11,000.00	7,266.00	503.32	3,687.78	89.80	10,937.76	7,083.21	866.70	3,686.62	90.18	406.77	243.47	359.82	2.491
11,200.00	7,266.00	503.32	3,887.78	94.77	11,137.71	7,078.80	865.12	3,886.51	95.13	407.36	235.98	359.80	2.377
11,400.00	7,266.00	503.32	4,087.78	99.76	11,337.65	7,074.39	863.54	4,086.40	100.10	408.01	228.63	359.78	2.275
11,600.00	7,266.00	500.35	4,287.73	104.76	11,537.58	7,069.98	861.96	4,286.27	105.09	411.32	224.39	359.77	2.200
11,800.00	7,266.00	490.01	4,487.47	109.77	11,737.34	7,065.58	860.38	4,485.98	110.08	421.12	225.34	359.77	2.151
11,977.61	7,266.00	480.79	4,664.84	114.23	11,913.55	7,061.69	858.98	4,662.14	114.50	429.86	226.12	359.59	2.110

Anticollision Report for Deering 33-4H - 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 11,977.61 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		Ellipse Major Axis/2	Measured Depth (ft)	Vertical Depth (ft)	Ellipse Centre		Ellipse Major Axis/2	Between Centres (ft)	Between Ellipsoids ft	Relative North Bearing	Clearance Factor
		+N/-S (ft)	+E/-W (ft)				+N/-S (ft)	+E/-W (ft)					
0.00	0.00	0.00	0.00	0.00	0.00	1.00	-40.07	0.00	0.00	40.09	39.43	180.00	61.064
200.00	200.00	0.00	0.00	0.34	199.00	200.00	-40.07	0.00	0.33	40.07	38.74	180.00	30.168
400.00	400.00	0.00	0.00	0.79	399.00	400.00	-40.07	0.00	0.78	40.07	37.85	180.00	17.991
600.00	600.00	0.00	0.00	1.24	599.00	600.00	-40.07	0.00	1.23	40.07	36.95	180.00	12.817
800.00	800.00	0.00	0.00	1.69	799.00	800.00	-40.07	0.00	1.68	40.07	36.05	180.00	9.955
1,000.00	1,000.00	0.00	0.00	2.14	999.00	1,000.00	-40.07	0.00	2.13	40.07	35.15	180.00	8.137
1,200.00	1,199.75	7.68	-4.14	2.59	1,198.75	1,199.75	-40.07	0.00	2.58	47.93	42.11	175.04	8.242
1,400.00	1,397.98	30.64	-16.53	3.08	1,396.98	1,397.98	-40.07	0.00	3.03	72.62	65.94	166.84	10.870
1,600.00	1,594.93	61.21	-33.03	3.68	1,593.93	1,594.93	-40.07	0.00	3.47	106.53	98.95	161.94	14.049
1,800.00	1,791.90	91.77	-49.52	4.34	1,790.90	1,791.90	-40.07	0.00	3.91	140.84	132.34	159.41	16.578
2,000.00	1,988.86	122.34	-66.01	5.04	1,987.86	1,988.86	-40.07	0.00	4.36	175.31	165.89	157.88	18.619
2,200.00	2,185.82	152.90	-82.50	5.76	2,184.82	2,185.82	-40.07	0.00	4.80	209.87	199.53	156.85	20.294
2,400.00	2,382.78	183.46	-98.99	6.50	2,381.78	2,382.78	-40.07	0.00	5.24	244.48	233.20	156.11	21.690
2,600.00	2,579.74	214.03	-115.48	7.24	2,578.74	2,579.74	-40.07	0.00	5.68	279.11	266.91	155.56	22.870
2,800.00	2,776.70	244.59	-131.98	8.00	2,775.70	2,776.70	-40.07	0.00	6.13	313.77	300.63	155.13	23.879
3,000.00	2,973.66	275.16	-148.47	8.76	2,972.66	2,973.66	-40.07	0.00	6.57	348.44	334.37	154.78	24.752
3,200.00	3,170.63	305.72	-164.96	9.52	3,169.63	3,170.63	-40.07	0.00	7.01	383.13	368.11	154.50	25.514
3,400.00	3,367.59	336.29	-181.45	10.29	3,366.59	3,367.59	-40.07	0.00	7.45	417.82	401.86	154.26	26.184
3,600.00	3,564.55	366.85	-197.94	11.06	3,563.55	3,564.55	-40.07	0.00	7.90	452.51	435.62	154.06	26.779
3,800.00	3,761.51	397.42	-214.43	11.83	3,760.51	3,761.51	-40.07	0.00	8.34	487.22	469.37	153.89	27.309
4,000.00	3,958.47	427.98	-230.93	12.61	3,957.47	3,958.47	-40.07	0.00	8.78	521.92	503.14	153.74	27.786
4,200.00	4,155.43	458.55	-247.42	13.39	4,154.43	4,155.43	-40.07	0.00	9.23	556.63	536.90	153.61	28.216
4,400.00	4,352.39	489.11	-263.91	14.16	4,351.39	4,352.39	-40.07	0.00	9.67	591.34	570.67	153.49	28.607
4,600.00	4,549.36	519.67	-280.40	14.94	4,548.36	4,549.36	-40.07	0.00	10.11	626.05	604.44	153.39	28.962
4,800.00	4,747.19	545.21	-294.18	15.55	4,746.19	4,747.19	-40.07	0.00	10.56	655.05	632.48	153.31	29.017
5,000.00	4,946.77	555.73	-299.86	15.92	4,945.77	4,946.77	-40.07	0.00	11.00	667.01	643.66	153.28	28.568
5,200.00	5,146.76	556.00	-300.00	16.21	5,145.76	5,146.76	-40.07	0.00	11.45	667.31	639.00	153.28	23.571
5,400.00	5,346.76	556.00	-300.00	16.51	5,345.76	5,346.76	-40.07	0.00	11.90	667.31	638.24	153.28	22.958
5,600.00	5,546.76	556.00	-300.00	16.83	5,545.76	5,546.76	-40.07	0.00	12.35	667.31	637.48	153.28	22.371
5,800.00	5,746.76	556.00	-300.00	17.15	5,745.76	5,746.76	-40.07	0.00	12.80	667.31	636.71	153.28	21.809
6,000.00	5,946.76	556.00	-300.00	17.47	5,945.76	5,946.76	-40.07	0.00	13.25	667.31	635.94	153.28	21.270
6,200.00	6,146.76	556.00	-300.00	17.80	6,145.76	6,146.76	-40.07	0.00	13.70	667.31	635.16	153.28	20.754
6,400.00	6,346.76	556.00	-300.00	18.14	6,350.44	6,351.44	-40.07	-0.10	14.16	667.28	634.34	153.29	20.254
6,600.00	6,546.76	556.00	-300.00	18.48	6,650.05	6,643.53	-40.07	-58.89	14.82	650.23	616.39	157.98	19.213
6,800.00	6,744.29	555.61	-273.09	18.67	6,861.06	6,827.12	-40.07	-161.71	15.56	611.64	579.73	169.41	19.168
6,962.57	6,894.43	554.72	-211.64	18.66	6,944.57	6,891.47	-40.07	-214.87	16.00	594.81	561.91	180.31	18.080
7,000.00	6,926.75	554.45	-192.79	18.66	6,955.15	6,899.23	-40.07	-222.07	16.06	595.88	562.85	182.82	18.044
7,200.00	7,080.00	552.60	-65.31	18.56	6,974.03	6,912.84	-40.07	-235.15	16.19	638.79	605.40	195.99	19.131
7,400.00	7,192.18	550.21	99.47	18.48	6,950.00	6,895.46	-40.07	-218.55	16.03	733.22	699.25	208.31	21.585
7,600.00	7,254.58	547.47	288.78	20.07	6,900.00	6,857.80	-40.07	-185.68	15.74	853.09	819.92	218.92	25.719
7,800.00	7,266.00	544.58	488.08	22.84	6,850.00	6,818.20	-40.07	-155.17	15.50	977.81	945.49	227.73	30.252
8,000.00	7,266.00	541.69	688.06	24.60	6,800.00	6,776.81	-40.07	-127.13	15.29	1,114.58	1,081.24	234.49	33.434
8,200.00	7,266.00	538.79	888.04	27.15	6,750.00	6,733.78	-40.07	-101.67	15.11	1,264.06	1,229.13	239.68	36.184
8,400.00	7,266.00	535.89	1,088.02	30.33	6,700.00	6,689.28	-40.07	-78.89	14.96	1,423.38	1,386.51	243.73	38.609
8,600.00	7,266.00	532.99	1,287.99	33.97	6,677.11	6,668.46	-40.07	-69.37	14.89	1,589.94	1,550.14	247.11	39.953
8,800.00	7,266.00	530.10	1,487.97	37.95	6,650.00	6,643.48	-40.07	-58.87	14.82	1,762.20	1,719.48	249.77	41.257
9,000.00	7,266.00	527.20	1,687.95	42.18	6,627.72	6,622.69	-40.07	-50.85	14.76	1,938.84	1,893.00	251.93	42.299
9,200.00	7,266.00	524.30	1,887.93	46.59	6,600.00	6,596.53	-40.07	-41.68	14.69	2,118.98	2,070.22	253.70	43.459
9,400.00	7,266.00	521.41	2,087.91	51.14	6,600.00	6,596.53	-40.07	-41.68	14.69	2,301.86	2,249.12	255.23	43.640
9,600.00	7,266.00	518.51	2,287.89	55.79	6,575.13	6,572.81	-40.07	-34.20	14.63	2,486.89	2,431.17	256.47	44.629
9,800.00	7,266.00	515.61	2,487.87	60.51	6,550.00	6,548.63	-40.07	-27.38	14.57	2,673.93	2,615.31	257.54	45.616
10,000.00	7,266.00	512.71	2,687.85	65.30	6,550.00	6,548.63	-40.07	-27.38	14.57	2,862.28	2,799.68	258.49	45.718

Anticollision Report for Deering 33-4H - 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 11,977.61 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	7,266.00	509.82	2,887.83	70.13	6,550.00	6,548.63	-40.07	-27.38	14.57	3,052.12	2,985.50	259.32	45.811
10,400.00	7,266.00	506.92	3,087.81	75.01	6,528.45	6,527.73	-40.07	-22.13	14.53	3,242.83	3,173.29	260.02	46.636
10,600.00	7,266.00	504.02	3,287.78	79.91	6,500.00	6,499.94	-40.07	-16.04	14.46	3,434.84	3,362.84	260.65	47.706
10,800.00	7,266.00	503.32	3,487.78	84.85	6,500.00	6,499.94	-40.07	-16.04	14.46	3,627.52	3,555.07	261.18	50.067
11,000.00	7,266.00	503.32	3,687.78	89.80	6,500.00	6,499.94	-40.07	-16.04	14.46	3,821.05	3,744.83	261.65	50.135
11,200.00	7,266.00	503.32	3,887.78	94.77	6,500.00	6,499.94	-40.07	-16.04	14.46	4,015.21	3,935.23	262.08	50.198
11,400.00	7,266.00	503.32	4,087.78	99.76	6,500.00	6,499.94	-40.07	-16.04	14.46	4,209.93	4,126.16	262.46	50.257
11,600.00	7,266.00	500.35	4,287.73	104.76	6,500.00	6,499.94	-40.07	-16.04	14.46	4,404.70	4,302.53	262.84	43.112
11,800.00	7,266.00	490.01	4,487.47	109.77	6,500.00	6,499.94	-40.07	-16.04	14.46	4,598.85	4,490.50	263.29	42.444
11,977.61	7,266.00	480.79	4,664.84	114.23	6,474.81	6,475.17	-40.07	-11.46	14.41	4,771.21	4,660.56	263.64	43.118

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	7,728.04	Rev A0 (Permitting Plan Only)	MWD
7,728.04	11,977.61	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.

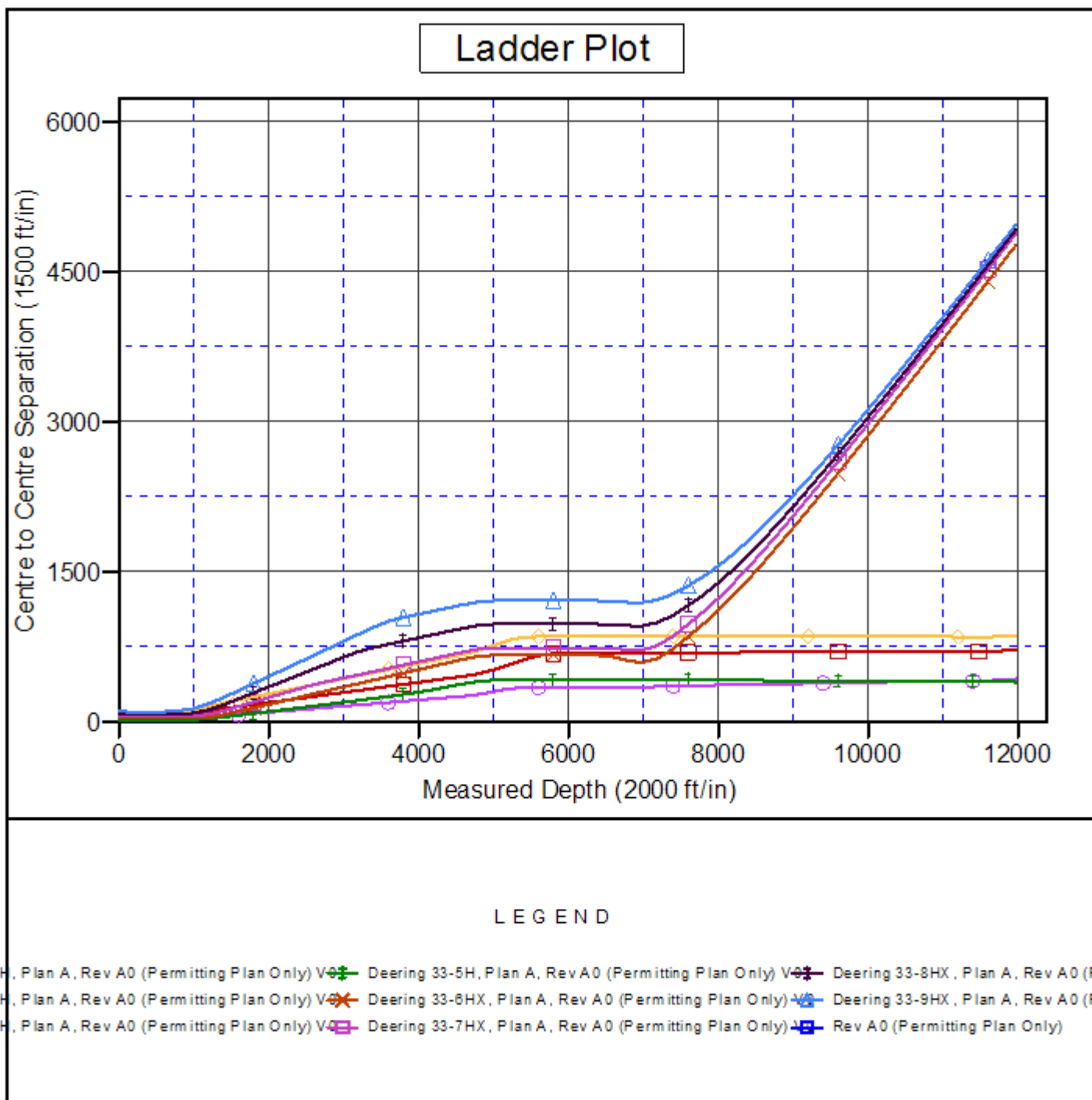
Anticollision Report for Deering 33-4H - Rev A0 (Permitting Plan Only)

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 33-4H - Slot A4

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 33-4H - A4

Plan A

Plan: Rev A0 (Permitting Plan Only)

Sperry Drilling Services

Proposal Report

25 July, 2013

Well Coordinates: 1,341,812.57 N, 3,166,345.15 E (40° 16' 12.50" N, 104° 54' 13.93" W)

Ground Level: 4,904.00 ft

Local Coordinate Origin: Centered on Well Deering 33-4H - Slot A4

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 33-4H - 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
Begin 2.5°/100ft Nudge to 10.0° Inclination at 1000.00ft										
1,100.00	2.50	331.65	1,099.97	1.92	-1.04	-0.82	2.50	2.50	0.00	331.65
1,200.00	5.00	331.65	1,199.75	7.68	-4.14	-3.29	2.50	2.50	0.00	0.00
1,300.00	7.50	331.65	1,299.14	17.26	-9.31	-7.40	2.50	2.50	0.00	0.00
1,400.00	10.00	331.65	1,397.97	30.64	-16.53	-13.14	2.50	2.50	0.00	0.00
Begin 3237.18ft Tangent at 1400.00ft										
1,500.00	10.00	331.65	1,496.45	45.92	-24.78	-19.69	0.00	0.00	0.00	0.00
1,600.00	10.00	331.65	1,594.93	61.21	-33.03	-26.25	0.00	0.00	0.00	0.00
1,700.00	10.00	331.65	1,693.41	76.49	-41.27	-32.80	0.00	0.00	0.00	0.00
1,800.00	10.00	331.65	1,791.90	91.77	-49.52	-39.36	0.00	0.00	0.00	0.00
1,900.00	10.00	331.65	1,890.38	107.05	-57.76	-45.91	0.00	0.00	0.00	0.00
2,000.00	10.00	331.65	1,988.86	122.34	-66.01	-52.46	0.00	0.00	0.00	0.00
2,100.00	10.00	331.65	2,087.34	137.62	-74.25	-59.02	0.00	0.00	0.00	0.00
2,200.00	10.00	331.65	2,185.82	152.90	-82.50	-65.57	0.00	0.00	0.00	0.00
2,300.00	10.00	331.65	2,284.30	168.18	-90.75	-72.13	0.00	0.00	0.00	0.00
2,400.00	10.00	331.65	2,382.78	183.46	-98.99	-78.68	0.00	0.00	0.00	0.00
2,500.00	10.00	331.65	2,481.26	198.75	-107.24	-85.23	0.00	0.00	0.00	0.00
2,600.00	10.00	331.65	2,579.74	214.03	-115.48	-91.79	0.00	0.00	0.00	0.00
2,700.00	10.00	331.65	2,678.22	229.31	-123.73	-98.34	0.00	0.00	0.00	0.00
2,800.00	10.00	331.65	2,776.70	244.59	-131.98	-104.89	0.00	0.00	0.00	0.00
2,900.00	10.00	331.65	2,875.18	259.88	-140.22	-111.45	0.00	0.00	0.00	0.00
3,000.00	10.00	331.65	2,973.66	275.16	-148.47	-118.00	0.00	0.00	0.00	0.00
3,100.00	10.00	331.65	3,072.15	290.44	-156.71	-124.56	0.00	0.00	0.00	0.00
3,200.00	10.00	331.65	3,170.63	305.72	-164.96	-131.11	0.00	0.00	0.00	0.00
3,300.00	10.00	331.65	3,269.11	321.01	-173.20	-137.66	0.00	0.00	0.00	0.00
3,400.00	10.00	331.65	3,367.59	336.29	-181.45	-144.22	0.00	0.00	0.00	0.00
3,500.00	10.00	331.65	3,466.07	351.57	-189.70	-150.77	0.00	0.00	0.00	0.00
3,600.00	10.00	331.65	3,564.55	366.85	-197.94	-157.33	0.00	0.00	0.00	0.00
3,700.00	10.00	331.65	3,663.03	382.13	-206.19	-163.88	0.00	0.00	0.00	0.00
3,800.00	10.00	331.65	3,761.51	397.42	-214.43	-170.43	0.00	0.00	0.00	0.00
3,900.00	10.00	331.65	3,859.99	412.70	-222.68	-176.99	0.00	0.00	0.00	0.00
4,000.00	10.00	331.65	3,958.47	427.98	-230.93	-183.54	0.00	0.00	0.00	0.00
4,100.00	10.00	331.65	4,056.95	443.26	-239.17	-190.09	0.00	0.00	0.00	0.00
4,200.00	10.00	331.65	4,155.43	458.55	-247.42	-196.65	0.00	0.00	0.00	0.00
4,300.00	10.00	331.65	4,253.91	473.83	-255.66	-203.20	0.00	0.00	0.00	0.00
4,400.00	10.00	331.65	4,352.39	489.11	-263.91	-209.76	0.00	0.00	0.00	0.00
4,500.00	10.00	331.65	4,450.88	504.39	-272.15	-216.31	0.00	0.00	0.00	0.00
4,600.00	10.00	331.65	4,549.36	519.67	-280.40	-222.86	0.00	0.00	0.00	0.00
4,637.18	10.00	331.65	4,585.97	525.36	-283.47	-225.30	0.00	0.00	0.00	0.00
Begin 2.5°/100ft Drop to Vertical at 4637.18ft										
4,700.00	8.43	331.65	4,647.98	534.21	-288.24	-229.10	2.50	-2.50	0.00	180.00
4,800.00	5.93	331.65	4,747.19	545.21	-294.18	-233.81	2.50	-2.50	0.00	180.00
4,900.00	3.43	331.65	4,846.85	552.39	-298.05	-236.89	2.50	-2.50	0.00	180.00
5,000.00	0.93	331.65	4,946.77	555.73	-299.86	-238.33	2.50	-2.50	0.00	180.00
5,037.19	0.00	0.00	4,983.95	556.00	-300.00	-238.44	2.50	-2.50	0.00	180.00
End of Drop at 5037.19ft										
5,100.00	0.00	0.00	5,046.76	556.00	-300.00	-238.44	0.00	0.00	0.00	0.00

Plan Report for Deering 33-4H - 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 (°)
5,200.00	0.00	0.00	5,146.76	556.00	-300.00	-238.44	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,246.76	556.00	-300.00	-238.44	0.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,346.76	556.00	-300.00	-238.44	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,446.76	556.00	-300.00	-238.44	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,546.76	556.00	-300.00	-238.44	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,646.76	556.00	-300.00	-238.44	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,746.76	556.00	-300.00	-238.44	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,846.76	556.00	-300.00	-238.44	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	5,946.76	556.00	-300.00	-238.44	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,046.76	556.00	-300.00	-238.44	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,146.76	556.00	-300.00	-238.44	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,246.76	556.00	-300.00	-238.44	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,346.76	556.00	-300.00	-238.44	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,446.76	556.00	-300.00	-238.44	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,546.76	556.00	-300.00	-238.44	0.00	0.00	0.00	0.00
6,603.04	0.00	0.00	6,549.80	556.00	-300.00	-238.44	0.00	0.00	0.00	0.00
KOP - Begin 8.0°/100ft Build at 6603.04ft										
6,700.00	7.76	90.83	6,646.47	555.91	-293.45	-231.94	8.00	8.00	0.00	90.83
6,800.00	15.76	90.83	6,744.29	555.61	-273.09	-211.73	8.00	8.00	0.00	0.00
6,900.00	23.76	90.83	6,838.33	555.12	-239.32	-178.21	8.00	8.00	0.00	0.00
7,000.00	31.76	90.83	6,926.75	554.45	-192.79	-132.02	8.00	8.00	0.00	0.00
7,100.00	39.76	90.83	7,007.83	553.60	-134.41	-74.07	8.00	8.00	0.00	0.00
7,200.00	47.76	90.83	7,080.00	552.60	-65.31	-5.48	8.00	8.00	0.00	0.00
7,300.00	55.76	90.83	7,141.85	551.46	13.16	72.41	8.00	8.00	0.00	0.00
7,400.00	63.76	90.83	7,192.18	550.21	99.47	158.09	8.00	8.00	0.00	0.00
7,500.00	71.76	90.83	7,230.00	548.87	191.94	249.88	8.00	8.00	0.00	0.00
7,600.00	79.76	90.83	7,254.58	547.47	288.78	346.00	8.00	8.00	0.00	0.00
7,700.00	87.76	90.83	7,265.45	546.03	388.10	444.59	8.00	8.00	0.00	0.00
7,728.04	90.00	90.83	7,266.00	545.63	416.13	472.41	8.00	8.00	0.00	0.00
End of Build at 7728.04ft - 7" Csg										
7,800.00	90.00	90.83	7,266.00	544.58	488.08	543.83	0.00	0.00	0.00	0.00
7,900.00	90.00	90.83	7,266.00	543.13	588.07	643.09	0.00	0.00	0.00	0.00
8,000.00	90.00	90.83	7,266.00	541.69	688.06	742.34	0.00	0.00	0.00	0.00
8,100.00	90.00	90.83	7,266.00	540.24	788.05	841.59	0.00	0.00	0.00	0.00
8,200.00	90.00	90.83	7,266.00	538.79	888.04	940.85	0.00	0.00	0.00	0.00
8,300.00	90.00	90.83	7,266.00	537.34	988.03	1,040.10	0.00	0.00	0.00	0.00
8,400.00	90.00	90.83	7,266.00	535.89	1,088.02	1,139.35	0.00	0.00	0.00	0.00
8,500.00	90.00	90.83	7,266.00	534.44	1,188.00	1,238.61	0.00	0.00	0.00	0.00
8,600.00	90.00	90.83	7,266.00	532.99	1,287.99	1,337.86	0.00	0.00	0.00	0.00
8,700.00	90.00	90.83	7,266.00	531.55	1,387.98	1,437.11	0.00	0.00	0.00	0.00
8,800.00	90.00	90.83	7,266.00	530.10	1,487.97	1,536.37	0.00	0.00	0.00	0.00
8,900.00	90.00	90.83	7,266.00	528.65	1,587.96	1,635.62	0.00	0.00	0.00	0.00
9,000.00	90.00	90.83	7,266.00	527.20	1,687.95	1,734.87	0.00	0.00	0.00	0.00
9,100.00	90.00	90.83	7,266.00	525.75	1,787.94	1,834.13	0.00	0.00	0.00	0.00
9,200.00	90.00	90.83	7,266.00	524.30	1,887.93	1,933.38	0.00	0.00	0.00	0.00
9,300.00	90.00	90.83	7,266.00	522.85	1,987.92	2,032.63	0.00	0.00	0.00	0.00
9,400.00	90.00	90.83	7,266.00	521.41	2,087.91	2,131.89	0.00	0.00	0.00	0.00
9,500.00	90.00	90.83	7,266.00	519.96	2,187.90	2,231.14	0.00	0.00	0.00	0.00
9,600.00	90.00	90.83	7,266.00	518.51	2,287.89	2,330.39	0.00	0.00	0.00	0.00
9,700.00	90.00	90.83	7,266.00	517.06	2,387.88	2,429.65	0.00	0.00	0.00	0.00
9,800.00	90.00	90.83	7,266.00	515.61	2,487.87	2,528.90	0.00	0.00	0.00	0.00
9,900.00	90.00	90.83	7,266.00	514.16	2,587.86	2,628.15	0.00	0.00	0.00	0.00
10,000.00	90.00	90.83	7,266.00	512.71	2,687.85	2,727.41	0.00	0.00	0.00	0.00
10,100.00	90.00	90.83	7,266.00	511.27	2,787.84	2,826.66	0.00	0.00	0.00	0.00
10,200.00	90.00	90.83	7,266.00	509.82	2,887.83	2,925.91	0.00	0.00	0.00	0.00
10,300.00	90.00	90.83	7,266.00	508.37	2,987.82	3,025.17	0.00	0.00	0.00	0.00
10,400.00	90.00	90.83	7,266.00	506.92	3,087.81	3,124.42	0.00	0.00	0.00	0.00
10,500.00	90.00	90.83	7,266.00	505.47	3,187.79	3,223.67	0.00	0.00	0.00	0.00
10,600.00	90.00	90.83	7,266.00	504.02	3,287.78	3,322.93	0.00	0.00	0.00	0.00

Plan Report for Deering 33-4H - 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 (°)
10,628.04	90.00	90.83	7,266.00	503.62	3,315.82	3,350.76	0.00	0.00	0.00	0.00
Begin 2.0°/100ft Turn at 10628.04ft										
10,669.54	90.00	90.00	7,266.00	503.32	3,357.32	3,391.98	2.00	0.00	-2.00	-90.00
End of Turn at 10669.54ft										
10,700.00	90.00	90.00	7,266.00	503.32	3,387.78	3,422.27	0.00	0.00	0.00	0.00
10,800.00	90.00	90.00	7,266.00	503.32	3,487.78	3,521.69	0.00	0.00	0.00	0.00
10,900.00	90.00	90.00	7,266.00	503.32	3,587.78	3,621.11	0.00	0.00	0.00	0.00
11,000.00	90.00	90.00	7,266.00	503.32	3,687.78	3,720.52	0.00	0.00	0.00	0.00
11,100.00	90.00	90.00	7,266.00	503.32	3,787.78	3,819.94	0.00	0.00	0.00	0.00
11,200.00	90.00	90.00	7,266.00	503.32	3,887.78	3,919.36	0.00	0.00	0.00	0.00
11,300.00	90.00	90.00	7,266.00	503.32	3,987.78	4,018.78	0.00	0.00	0.00	0.00
11,400.00	90.00	90.00	7,266.00	503.32	4,087.78	4,118.20	0.00	0.00	0.00	0.00
11,469.54	90.00	90.00	7,266.00	503.32	4,157.32	4,187.34	0.00	0.00	0.00	0.00
Begin 2.0°/100ft Turn Toward BHL Target at 11469.54ft										
11,500.00	90.00	90.61	7,266.00	503.15	4,187.78	4,217.60	2.00	0.00	2.00	90.01
11,600.00	90.00	92.61	7,266.00	500.35	4,287.73	4,316.68	2.00	0.00	2.00	90.01
11,618.44	90.00	92.98	7,266.00	499.45	4,306.15	4,334.89	2.00	0.00	2.00	90.01
End of Turn at 11618.44ft										
11,700.00	90.00	92.98	7,266.00	495.21	4,387.60	4,415.41	0.00	0.00	0.00	90.01
11,800.00	90.00	92.98	7,266.00	490.01	4,487.47	4,514.14	0.00	0.00	0.00	0.00
11,827.61	90.00	92.98	7,266.00	488.58	4,515.04	4,541.40	0.00	0.00	0.00	0.00
Total Depth at 11827.61ft										

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,000.00	1,000.00	0.00	0.00	Begin 2.5°/100ft Nudge to 10.0° Inclination at 1000.00ft
1,400.00	1,397.97	30.64	-16.53	Begin 3237.18ft Tangent at 1400.00ft
4,637.18	4,585.97	525.36	-283.47	Begin 2.5°/100ft Drop to Vertical at 4637.18ft
5,037.19	4,983.95	556.00	-300.00	End of Drop at 5037.19ft
6,603.04	6,549.80	556.00	-300.00	KOP - Begin 8.0°/100ft Build at 6603.04ft
7,728.04	7,266.00	545.63	416.13	End of Build at 7728.04ft
10,628.04	7,266.00	503.62	3,315.82	Begin 2.0°/100ft Turn at 10628.04ft
10,669.54	7,266.00	503.32	3,357.32	End of Turn at 10669.54ft
11,469.54	7,266.00	503.32	4,157.32	Begin 2.0°/100ft Turn Toward BHL Target at 11469.54ft
11,618.44	7,266.00	499.45	4,306.15	End of Turn at 11618.44ft
11,827.61	7,266.00	488.58	4,515.04	Total Depth at 11827.61ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/-S (ft)	+E/-W (ft)	
Target	Deering 33-4H_RevA0_BHL Tgt	83.82	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	7,728.04	Rev A0 (Permitting Plan Only)	MWD
7,728.04	11,977.61	Rev A0 (Permitting Plan Only)	MWD

Plan Report for Deering 33-4H - Rev A0 (Permitting Plan Only)

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,728.04	7,266.00	7" Csg	7	8-3/4

Plan Report for Deering 33-4H - 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	-1,012.74	-1,021.38	Circle
Stroh_Sunmarke 19-28-11_BHL	-85.00	4,356.31	1,628.27	Circle
Stroh_Stroh 28-10	-32.00	4,331.75	2,971.43	Circle
Stroh_Stroh 23-28	-32.00	3,552.08	2,466.50	Circle
Stroh_Spaur 1	-32.00	4,337.09	1,608.48	Circle
Deering_Anderson 12-32	-1.00	-892.10	-4,649.23	Circle
Deering_Anderson 1	-1.00	-874.10	-3,334.83	Circle
Stroh_Frank 1 (B)	-32.00	1,149.75	4,271.04	Circle
Deering_Hepp 32-5	-1.00	576.06	-4,749.42	Circle
Deering_Stroh 7-33	-1.00	346.27	3,002.60	Circle
Stroh_Koester 18-33-6_BHL	-34.00	375.76	1,645.41	Circle
Stroh_Stroh 33-2	-32.00	1,683.26	2,980.12	Circle
Stroh_Koester 3-33-3_BHL	-65.00	1,661.49	1,683.45	Circle
Stroh_Sunmarke 15-28	-32.00	3,300.61	1,021.21	Circle
Deering_Stroh 33-4	-1.00	342.82	4,311.36	Circle
Stroh_Stroh 28-16	-32.00	2,976.93	5,320.96	Circle
Stroh_Stroh 2	-32.00	3,373.67	3,303.58	Circle
Deering_Camenisch 32-10	-1.00	-717.57	-2,277.16	Circle
Stroh_Sunmarke 19-28-14_BHL	-85.00	3,027.17	1,620.02	Circle
Stroh_Koester 18-33	-32.00	728.61	563.68	Circle
Stroh_Stroh 39-28R	-32.00	3,468.63	4,748.87	Circle
Deering 33-4H_RevA0_BHL Tgt	7,266.00	488.58	4,515.04	Point
Stroh 28-1H_Sec. 33 Lines	-32.00	2,612.52	4,768.57	Polygon
Stroh_Sunmarke 19-28-12_BHL	-85.00	4,337.65	305.95	Circle
Deering_Hepp 22-32R	-1.00	51.35	-4,107.69	Circle
Deering 33-1H_Sec. 32 N Half 460' Setback	-1.00	58.29	0.00	Polygon
Stroh_Stroh 38-28R	-32.00	2,466.79	4,754.64	Circle
Stroh_Koester 3-33-21_BHL	-64.00	1,049.68	2,147.99	Circle
Stroh_Stroh 33-1	-32.00	1,679.79	4,171.61	Circle
Deering 33-1H_Sec. 32 N Half Lines	-1.00	58.29	0.00	Polygon
Deering_Camenisch 9-32-40R	-1.00	-979.95	-996.26	Circle
Stroh_Frank 1	-32.00	1,994.62	1,642.12	Circle
Stroh_Stroh 28-33R	-32.00	2,193.23	2,466.64	Circle
Stroh_Sunmarke 19-28-13_BHL	-85.00	3,029.07	269.99	Circle
Stroh_Koester 18-33-4_BHL	-32.00	1,738.24	347.46	Circle
Stroh 28-1H_Sec. 33 460' Setback	-32.00	2,612.52	4,768.57	Polygon
Stroh_Stroh 1	-32.00	655.97	3,298.36	Circle
Deering_Camenisch 7-32-25R	-1.00	247.85	-2,408.22	Circle
Stroh_Koester 18-33-5_BHL	-31.00	312.88	231.53	Circle
Stroh_Stroh 15-28	-32.00	2,972.89	2,943.69	Circle
Stroh_Koester 18-33-22_BHL	-32.00	-72.12	995.48	Circle
Stroh_Stroh 41-33R	-32.00	834.72	4,766.12	Circle
Stroh_Koester 3-33-29_BHL	-66.00	2,192.96	983.28	Circle
Deering_Hepp 32-6	-1.00	517.56	-3,502.07	Circle
Deering_Camenisch 41-32	-1.00	284.27	-2,369.15	Circle
Stroh_Stroh 28-9	-32.00	4,291.87	4,288.35	Circle

North Reference Sheet for Sec. 33-T4N-R67W (Deering 33H Pad) - Deering 33-4H - 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 33-4H - Slot A4

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: 1,341,812.57 ft N, 3,166,345.15 ft E

Geographical Coordinates of Well: 40° 16' 12.50" N, 104° 54' 13.93" W

Grid Convergence at Surface is: 0.39°

Based upon Minimum Curvature type calculations, at a Measured Depth of 11,977.61ft

the Bottom Hole Displacement is 4,689.55ft in the Direction of 84.12° (True).

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

