

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
4093.00	0.68	180.75	4063.88	-26.71	332.91	0.00	0.00	-257.29	Tie-On
6790.85	0.68	180.75	6761.54	-58.73	332.49	0.00	0.00	-279.31	Start Build
7446.40	65.00	325.46	7286.37	212.33	142.88	10.00	144.89	45.60	End Build
7759.01	65.00	325.46	7418.48	445.72	-17.75	0.00	0.00	323.46	Start Build/Turn
8036.81	90.55	314.20	7477.00	650.27	-192.12	10.00	-24.78	591.08	End Build/Turn
15319.65	90.55	314.20	7407.00	5727.27	-5413.12	0.00	0.00	7873.58	TD

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
North Henderson North Unit 3H BHL P6	7407.00	5727.27	-5413.12	14420412.00	1753775.00
North Henderson North Unit 3H LP P6	7477.00	650.27	-192.12	14415335.00	1758996.00

To convert a Magnetic Direction to a Grid Direction, Subtract 8.96°

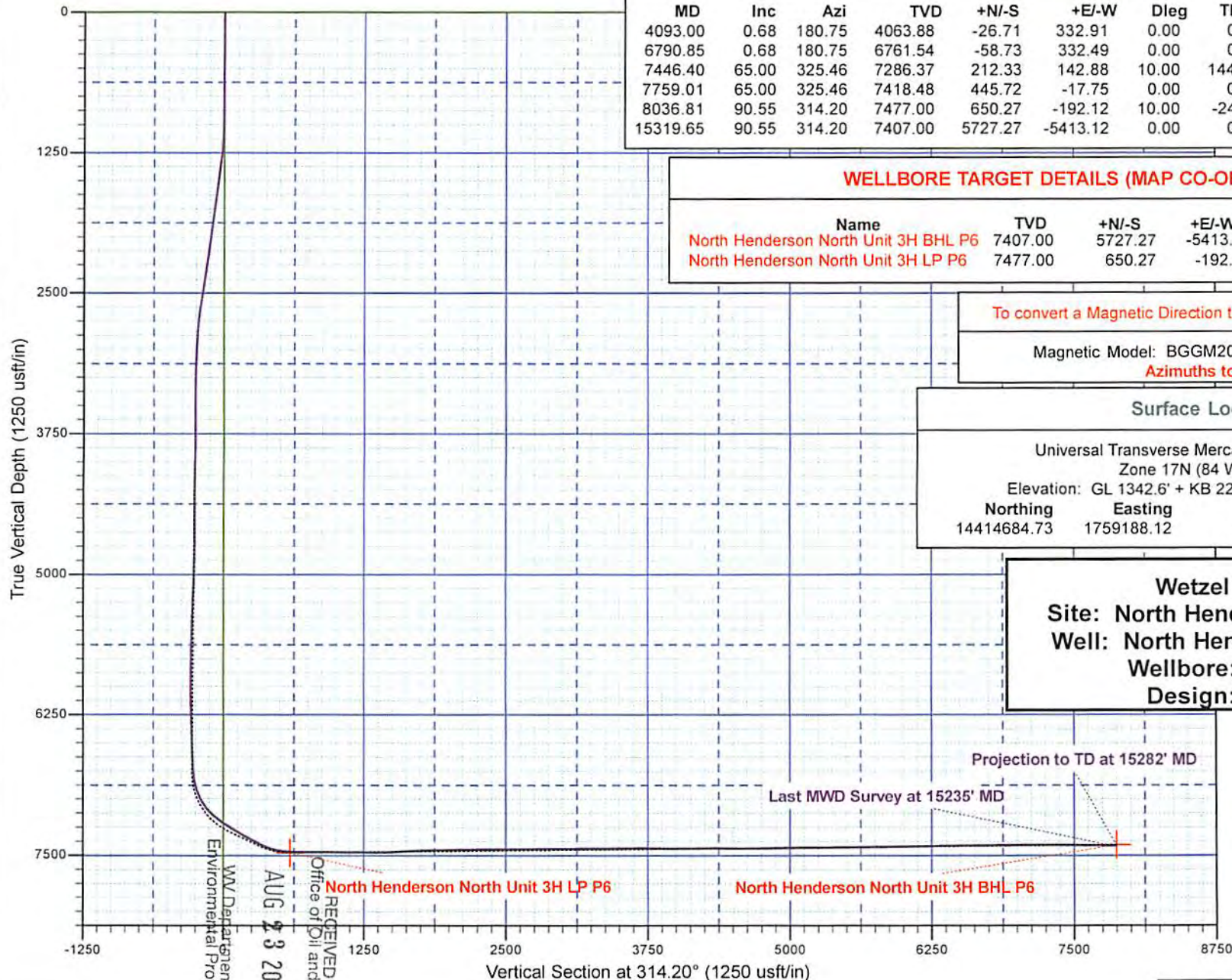
Magnetic Model: BGGM2014 Date: 17-Apr-15
Azimuths to Grid North

Surface Location:

Universal Transverse Mercator (US Survey Feet)
Zone 17N (84 W to 78 W)
Elevation: GL 1342.6' + KB 22' @ 1364.60usft (Orion Polaris)

Northing	Easting	Latitude	Longitude
14414684.73	1759188.12	39.693404	-80.577787

Wetzel County WV
Site: North Henderson North Unit Pad
Well: North Henderson North Unit 3H
Wellbore: Wellbore #1
Design: Design #6



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Sperry Drilling

Statoil

Wetzel County WV (NAD 27 UTM 17N us ft)

North Henderson North Unit Pad

North Henderson North Unit 3H - Slot North Henderson 3H

Wellbore #1

Design: Surveys

Standard Survey Report

09 June, 2015

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Company:	Statoil	Local Co-ordinate Reference:	Well North Henderson North Unit 3H - Slot North Henderson 3H
Project:	Wetzel County WV (NAD 27 UTM 17N us ft)	TVD Reference:	GL 1342.6' + KB 22' @ 1364.60usft (Orion Polaris)
Site:	North Henderson North Unit Pad	MD Reference:	GL 1342.6' + KB 22' @ 1364.60usft (Orion Polaris)
Well:	North Henderson North Unit 3H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	EDM 5000.1 Single User Db

Project	Wetzel County WV (NAD 27 UTM 17N us ft)		
Map System:	Universal Transverse Mercator (US Survey Fee	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Zone 17N (84 W to 78 W)		

Site	North Henderson North Unit Pad			
Site Position:	Northing:	14,414,677.53 usft	Latitude:	39.693384
From: Map	Easting:	1,759,189.60 usft	Longitude:	-80.577782
Position Uncertainty: 0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.27 °

Well	North Henderson North Unit 3H - Slot North Henderson 3H			
Well Position	+N/-S	0.00 usft	Northing:	14,414,684.73 usft
	+E/-W	0.00 usft	Easting:	1,759,188.12 usft
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft
			Ground Level:	1,342.60 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	4/17/2015	-8.69	67.08	52,326

Design	Surveys				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	314.20	

Survey Program	Date 6/9/2015				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
53.70	668.00	MS Gyro (Wellbore #1)	NSG-CT_csg+cent	Continuous gyro in casing + centrollers	
708.00	15,282.00	Sperry MWD (Wellbore #1)	MWD+SC	Fixed:v2:standard dec & axial correction	

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Survey	WV Department of Environmental Protection									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
53.70	0.07	217.37	53.70	-0.03	-0.02	0.00	0.13	0.13	0.00	0.00
115.00	0.14	150.13	115.00	-0.12	-0.01	-0.08	0.21	0.11	-109.69	12.01
207.00	0.22	161.18	207.00	-0.39	0.11	-0.35	0.09	0.09	12.01	-25.68
300.00	0.32	137.30	300.00	-0.75	0.34	-0.76	0.16	0.11	-25.68	
392.00	0.43	164.67	392.00	-1.27	0.61	-1.32	0.23	0.12	29.75	
484.00	0.78	181.06	483.99	-2.23	0.69	-2.04	0.42	0.38	17.82	

Survey Report

Company:	Statoil	Local Co-ordinate Reference:	Well North Henderson North Unit 3H - Slot North Henderson 3H
Project:	Wetzel County WV (NAD 27 UTM 17N us ft)	TVD Reference:	GL 1342.6' + KB 22' @ 1364.60usft (Orion Polaris)
Site:	North Henderson North Unit Pad	MD Reference:	GL 1342.6' + KB 22' @ 1364.60usft (Orion Polaris)
Well:	North Henderson North Unit 3H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
576.00	0.97	187.40	575.98	-3.62	0.57	-2.94	0.23	0.21	6.89	
668.00	1.12	188.77	667.97	-5.29	0.34	-3.93	0.17	0.16	1.49	
708.00	1.28	210.41	707.96	-6.06	0.05	-4.26	1.19	0.40	54.10	
738.00	1.44	218.07	737.95	-6.64	-0.35	-4.38	0.81	0.53	25.53	
769.00	1.55	220.00	768.94	-7.27	-0.86	-4.45	0.39	0.35	6.23	
800.00	1.67	223.08	799.93	-7.92	-1.44	-4.49	0.48	0.39	9.94	
831.00	1.66	226.11	830.91	-8.56	-2.07	-4.49	0.29	-0.03	9.77	
892.00	1.65	229.58	891.89	-9.74	-3.38	-4.37	0.17	-0.02	5.69	
923.00	1.47	229.08	922.88	-10.29	-4.02	-4.30	0.58	-0.58	-1.61	
954.00	1.41	227.49	953.87	-10.81	-4.60	-4.24	0.23	-0.19	-5.13	
984.00	1.28	210.73	983.86	-11.35	-5.04	-4.30	1.38	-0.43	-55.87	
1,015.00	1.21	191.30	1,014.85	-11.97	-5.28	-4.56	1.37	-0.23	-62.68	
1,046.00	1.45	166.70	1,045.84	-12.67	-5.26	-5.07	1.98	0.77	-79.35	
1,076.00	1.81	156.66	1,075.83	-13.48	-4.98	-5.82	1.53	1.20	-33.47	
1,107.00	2.45	143.40	1,106.81	-14.46	-4.39	-6.93	2.59	2.06	-42.77	
1,138.00	3.22	132.26	1,137.77	-15.57	-3.35	-8.45	3.04	2.48	-35.94	
1,169.00	4.07	123.59	1,168.71	-16.77	-1.79	-10.41	3.26	2.74	-27.97	
1,199.00	5.14	114.30	1,198.61	-17.91	0.32	-12.72	4.34	3.57	-30.97	
1,230.00	6.13	111.27	1,229.46	-19.08	3.13	-15.55	3.33	3.19	-9.77	
1,261.00	7.19	105.98	1,260.25	-20.22	6.54	-18.78	3.95	3.42	-17.06	
1,292.00	8.09	102.06	1,290.98	-21.21	10.53	-22.34	3.35	2.90	-12.65	
1,322.00	8.73	100.20	1,320.65	-22.05	14.84	-26.01	2.32	2.13	-6.20	
1,354.00	9.31	97.35	1,352.26	-22.81	19.80	-30.10	2.29	1.81	-8.91	
1,386.00	9.95	96.54	1,383.81	-23.46	25.11	-34.36	2.04	2.00	-2.53	
1,418.00	10.27	95.18	1,415.31	-24.03	30.70	-38.76	1.25	1.00	-4.25	
1,513.00	10.64	93.25	1,508.73	-25.29	47.89	-51.97	0.54	0.39	-2.03	
1,608.00	10.10	90.40	1,602.18	-25.85	64.97	-64.60	0.78	-0.57	-3.00	
1,703.00	10.52	88.40	1,695.65	-25.66	81.97	-76.66	0.58	0.44	-2.11	
1,799.00	10.30	86.43	1,790.07	-24.89	99.30	-88.54	0.44	-0.23	-2.05	
1,894.00	11.79	88.40	1,883.31	-24.09	117.48	-101.01	1.62	1.57	2.07	
1,989.00	11.41	88.42	1,976.37	-23.56	136.57	-114.33	0.40	-0.40	0.02	
2,084.00	10.88	87.61	2,069.57	-22.92	154.93	-127.05	0.58	-0.56	-0.56	
2,180.00	11.36	90.24	2,163.77	-22.58	173.43	-140.08	0.73	0.50	2.74	
2,274.00	10.74	89.82	2,256.03	-22.60	191.45	-153.00	0.67	-0.66	-0.45	
2,369.00	10.67	92.40	2,349.38	-22.94	209.09	-165.89	0.51	-0.07	2.72	
2,464.00	12.33	96.77	2,442.47	-24.50	227.95	-180.50	1.97	1.75	4.60	
2,558.00	11.97	94.25	2,534.36	-26.41	247.64	-195.94	0.68	-0.38	-2.68	
2,653.00	11.31	91.98	2,627.41	-27.46	266.77	-210.39	0.85	-0.69	-2.39	
2,790.00	7.06	90.25	2,762.62	-27.96	288.63	-226.41	3.11	-3.10	-1.26	
2,852.00	6.37	88.19	2,824.20	-27.87	295.87	-231.54	1.18	-1.11	-3.32	
2,948.00	5.23	86.38	2,919.70	-27.42	305.56	-238.18	1.20	-1.19	-1.89	
3,043.00	4.23	85.47	3,014.38	-26.87	313.38	-243.40	1.06	-1.05	-0.96	

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Survey Report

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Project:	Wetzel County WV (NAD 27 UTM 17N us ft)	TVD Reference:	GL 1342.6' + KB 22' @ 1364.60usft (Orion Polaris)
Site:	North Henderson North Unit Pad	MD Reference:	GL 1342.6' + KB 22' @ 1364.60usft (Orion Polaris)
Well:	North Henderson North Unit 3H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	EDM 5000.1 Single User Db

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
3,139.00	3.35	84.64	3,110.17	-26.33	319.70	-247.55	0.92	-0.92	-0.86
3,234.00	2.39	81.87	3,205.05	-25.79	324.43	-250.56	1.02	-1.01	-2.92
3,330.00	2.01	76.10	3,300.98	-25.10	328.04	-252.68	0.46	-0.40	-6.01
3,426.00	1.34	80.15	3,396.93	-24.51	330.78	-254.23	0.71	-0.70	4.22
3,521.00	0.66	53.40	3,491.92	-23.99	332.31	-254.97	0.85	-0.72	-28.16
3,616.00	0.44	345.20	3,586.92	-23.31	332.66	-254.74	0.68	-0.23	-71.79
3,711.00	0.38	308.42	3,681.91	-22.76	332.32	-254.11	0.28	-0.06	-38.72
3,807.00	0.36	183.25	3,777.91	-22.87	332.05	-254.00	0.68	-0.02	-130.39
3,901.00	0.99	161.80	3,871.91	-23.93	332.29	-254.91	0.71	0.67	-22.82
3,997.00	0.88	169.10	3,967.89	-25.44	332.69	-256.25	0.17	-0.11	7.60
4,093.00	0.68	180.75	4,063.88	-26.74	332.82	-257.24	0.26	-0.21	12.14
4,186.00	0.31	196.77	4,156.88	-27.53	332.74	-257.74	0.42	-0.40	17.23
4,280.00	0.31	181.64	4,250.88	-28.03	332.66	-258.03	0.09	0.00	-16.10
4,376.00	0.45	204.06	4,346.88	-28.63	332.50	-258.33	0.21	0.15	23.35
4,470.00	0.49	204.38	4,440.87	-29.34	332.18	-258.60	0.04	0.04	0.34
4,565.00	0.68	213.24	4,535.87	-30.18	331.71	-258.84	0.22	0.20	9.33
4,661.00	1.10	213.21	4,631.86	-31.42	330.89	-259.13	0.44	0.44	-0.03
4,754.00	1.36	214.93	4,724.84	-33.08	329.77	-259.47	0.28	0.28	1.85
4,850.00	1.60	207.86	4,820.80	-35.20	328.49	-260.04	0.31	0.25	-7.36
4,946.00	1.83	190.49	4,916.76	-37.89	327.59	-261.26	0.59	0.24	-18.09
5,040.00	2.39	184.29	5,010.70	-41.32	327.17	-263.35	0.64	0.60	-6.60
5,136.00	2.96	177.30	5,106.59	-45.79	327.13	-266.45	0.68	0.59	-7.28
5,230.00	3.72	177.53	5,200.43	-51.26	327.38	-270.44	0.81	0.81	0.24
5,325.00	3.82	176.03	5,295.23	-57.50	327.73	-275.04	0.15	0.11	-1.58
5,421.00	2.50	174.10	5,391.08	-62.77	328.17	-279.03	1.38	-1.37	-2.01
5,516.00	2.18	162.83	5,486.00	-66.56	328.91	-282.20	0.59	-0.34	-11.86
5,611.00	1.12	115.57	5,580.96	-68.68	330.28	-284.67	1.73	-1.12	-49.75
5,706.00	1.45	115.66	5,675.94	-69.61	332.20	-286.69	0.35	0.35	0.09
5,802.00	1.29	101.01	5,771.91	-70.34	334.36	-288.74	0.40	-0.17	-15.26
5,896.00	2.06	53.28	5,865.87	-69.53	336.75	-289.90	1.62	0.82	-50.78
5,992.00	2.28	55.97	5,961.81	-67.43	339.72	-290.56	0.25	0.23	-11.47
6,087.00	2.30	45.07	6,056.73	-65.03	342.63	-290.97	0.46	0.02	-43.06
6,183.00	2.40	3.73	6,152.66	-61.66	344.13	-289.70	1.73	0.10	2.54
6,277.00	2.88	6.12	6,246.56	-57.35	344.51	-286.96	0.52	0.51	-5.28
6,371.00	2.84	1.16	6,340.44	-52.67	344.81	-283.92	0.27	-0.04	-22.03
6,467.00	1.83	340.01	6,436.36	-48.85	344.33	-280.91	1.37	-1.05	1.81
6,562.00	2.31	341.73	6,531.30	-45.61	343.21	-277.85	0.51	0.51	-0.17
6,657.00	2.49	341.57	6,626.21	-41.83	341.96	-274.32	0.19	0.19	4.38
6,699.00	2.52	343.41	6,668.17	-40.08	341.41	-272.70	0.20	0.07	-8.56
6,758.00	2.54	338.36	6,727.12	-37.62	340.56	-270.38	0.38	0.03	-20.86
6,854.00	9.45	318.33	6,822.54	-29.75	334.52	-260.56	7.41	7.20	

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6,949.00	18.36	319.59	6,914.66	-12.50	319.61	-237.84	9.38	9.38	1.33
7,044.00	26.86	321.76	7,002.28	15.80	296.59	-201.61	8.99	8.95	2.28
7,139.00	39.71	322.59	7,081.53	56.94	264.73	-150.09	13.53	13.53	0.87
7,235.00	49.72	322.05	7,149.67	110.31	223.48	-83.31	10.43	10.43	-0.56
7,330.00	56.72	321.00	7,206.51	169.82	176.14	-7.88	7.42	7.37	-1.11
7,424.00	56.78	320.22	7,258.05	230.57	126.25	70.23	0.70	0.06	-0.83
7,519.00	61.76	321.64	7,306.58	293.97	74.83	151.30	5.40	5.24	1.49
7,614.00	62.61	325.51	7,350.93	361.56	24.96	234.18	3.71	0.89	4.07
7,709.00	62.21	324.61	7,394.92	430.58	-23.26	316.86	0.94	-0.42	-0.95
7,805.00	70.31	320.88	7,433.55	500.40	-76.47	403.69	9.15	8.44	-3.89
7,900.00	81.02	318.88	7,457.04	570.65	-135.72	495.14	11.46	11.27	-2.11
7,995.00	86.04	318.85	7,467.74	641.72	-197.80	589.19	5.28	5.28	-0.03
8,091.00	90.81	317.17	7,470.38	713.03	-261.98	684.91	5.27	4.97	-1.75
8,186.00	89.90	316.49	7,469.79	782.31	-326.97	779.81	1.20	-0.96	-0.72
8,282.00	89.66	316.43	7,470.16	851.90	-393.10	875.73	0.26	-0.25	-0.06
8,376.00	89.09	316.86	7,471.19	920.24	-457.63	969.64	0.76	-0.61	0.46
8,468.00	89.97	313.43	7,471.94	985.45	-522.51	1,061.61	3.85	0.96	-3.73
8,560.00	89.73	313.28	7,472.18	1,048.61	-589.40	1,153.60	0.31	-0.26	-0.16
8,652.00	89.83	314.19	7,472.53	1,112.21	-655.88	1,245.60	1.00	0.11	0.99
8,745.00	88.22	312.75	7,474.12	1,176.18	-723.36	1,338.57	2.32	-1.73	-1.55
8,837.00	91.68	311.53	7,474.20	1,237.89	-791.56	1,430.50	3.99	3.76	-1.33
8,929.00	93.94	312.04	7,469.69	1,299.12	-860.08	1,522.30	2.52	2.46	0.55
9,021.00	93.32	312.90	7,463.86	1,361.11	-927.80	1,614.07	1.15	-0.67	0.93
9,113.00	92.08	313.85	7,459.53	1,424.22	-994.60	1,705.96	1.70	-1.35	1.03
9,206.00	91.85	314.44	7,456.34	1,488.96	-1,061.29	1,798.90	0.68	-0.25	0.63
9,298.00	92.08	314.16	7,453.19	1,553.17	-1,127.10	1,890.85	0.39	0.25	-0.30
9,390.00	92.08	313.74	7,449.85	1,616.98	-1,193.29	1,982.78	0.46	0.00	-0.46
9,482.00	90.10	315.29	7,448.10	1,681.47	-1,258.87	2,074.76	2.73	-2.15	1.68
9,574.00	89.83	315.18	7,448.15	1,746.79	-1,323.66	2,166.74	0.32	-0.29	-0.12
9,667.00	90.77	314.76	7,447.67	1,812.51	-1,389.45	2,259.73	1.11	1.01	-0.45
9,762.00	90.64	314.27	7,446.50	1,879.11	-1,457.19	2,354.72	0.53	-0.14	-0.52
9,857.00	90.50	314.24	7,445.55	1,945.40	-1,525.23	2,449.72	0.15	-0.15	-0.03
9,951.00	90.77	314.19	7,444.51	2,010.95	-1,592.60	2,543.71	0.29	0.29	-0.05
10,045.00	90.87	314.09	7,443.16	2,076.41	-1,660.05	2,637.70	0.15	0.11	-0.39
10,138.00	90.64	313.73	7,441.94	2,140.90	-1,727.04	2,730.69	0.46	-0.25	-0.39
10,234.00	90.57	313.13	7,440.93	2,206.89	-1,796.75	2,826.68	0.63	-0.07	-0.62
10,330.00	89.80	312.39	7,440.62	2,272.07	-1,867.24	2,922.65	1.11	-0.80	-0.77
10,424.00	89.30	312.21	7,441.35	2,335.33	-1,936.76	3,016.59	0.57	-0.53	-0.48
10,519.00	90.70	313.60	7,441.35	2,400.00	-2,006.34	3,111.56	2.08	1.47	1.46
10,615.00	90.60	313.71	7,440.26	2,466.27	-2,075.79	3,207.55	0.15	-0.10	0.11
10,710.00	90.54	313.16	7,439.32	2,531.58	-2,144.78	3,302.54	0.58	-0.06	-0.58
10,806.00	90.47	312.90	7,438.47	2,597.08	-2,214.95	3,398.52	0.28	-0.07	-0.27

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WV Department of Environmental Protection

Survey Report

Company:	Statoil	Local Co-ordinate Reference:	Well North Henderson North Unit 3H - Slot North Henderson 3H
Project:	Wetzel County WV (NAD 27 UTM 17N us ft)	TVD Reference:	GL 1342.6' + KB 22' @ 1364.60usft (Orion Polaris)
Site:	North Henderson North Unit Pad	MD Reference:	GL 1342.6' + KB 22' @ 1364.60usft (Orion Polaris)
Well:	North Henderson North Unit 3H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
10,901.00	90.30	312.66	7,437.83	2,661.60	-2,284.67	3,493.48	0.31	-0.18	-0.25
10,997.00	90.67	312.79	7,437.02	2,726.74	-2,355.19	3,589.45	0.41	0.39	0.14
11,092.00	90.44	312.24	7,436.10	2,790.93	-2,425.21	3,684.40	0.63	-0.24	-0.58
11,187.00	89.19	314.31	7,436.41	2,856.05	-2,494.38	3,779.38	2.55	-1.32	2.18
11,283.00	89.03	315.15	7,437.90	2,923.60	-2,562.57	3,875.37	0.89	-0.17	0.87
11,378.00	89.50	314.30	7,439.12	2,990.45	-2,630.06	3,970.35	1.02	0.49	-0.89
11,473.00	90.17	316.84	7,439.39	3,058.28	-2,696.56	4,065.32	2.77	0.71	2.67
11,568.00	90.87	316.63	7,438.53	3,127.46	-2,761.66	4,160.22	0.77	0.74	-0.22
11,664.00	91.41	317.31	7,436.62	3,197.62	-2,827.16	4,256.09	0.90	0.56	0.71
11,758.00	89.50	315.10	7,435.87	3,265.46	-2,892.21	4,350.02	3.11	-2.03	-2.35
11,852.00	89.23	315.17	7,436.92	3,332.08	-2,958.51	4,444.00	0.30	-0.29	0.07
11,946.00	89.73	315.84	7,437.77	3,399.13	-3,024.39	4,537.97	0.89	0.53	0.71
12,041.00	89.23	315.46	7,438.63	3,467.06	-3,090.79	4,632.93	0.66	-0.53	-0.40
12,136.00	90.84	314.92	7,438.57	3,534.45	-3,157.74	4,727.92	1.79	1.69	-0.57
12,232.00	91.01	314.82	7,437.02	3,602.17	-3,225.77	4,823.90	0.21	0.18	-0.10
12,327.00	91.44	314.78	7,434.99	3,669.10	-3,293.17	4,918.87	0.45	0.45	-0.04
12,422.00	91.17	314.71	7,432.83	3,735.95	-3,360.62	5,013.84	0.29	-0.28	-0.07
12,518.00	90.84	313.80	7,431.14	3,802.94	-3,429.37	5,109.83	1.01	-0.34	-0.95
12,613.00	90.13	313.83	7,430.34	3,868.71	-3,497.92	5,204.82	0.75	-0.75	0.03
12,709.00	89.80	313.55	7,430.40	3,935.02	-3,567.33	5,300.82	0.45	-0.34	-0.29
12,804.00	90.97	315.12	7,429.76	4,001.40	-3,635.28	5,395.81	2.06	1.23	1.65
12,899.00	90.94	314.90	7,428.18	4,068.58	-3,702.43	5,490.79	0.23	-0.03	-0.23
12,995.00	90.94	315.89	7,426.60	4,136.92	-3,769.83	5,586.75	1.03	0.00	1.03
13,089.00	90.74	315.92	7,425.22	4,204.42	-3,835.24	5,680.70	0.22	-0.21	0.03
13,185.00	90.44	315.15	7,424.24	4,272.93	-3,902.48	5,776.67	0.86	-0.31	-0.80
13,282.00	89.97	315.45	7,423.89	4,341.88	-3,970.71	5,873.65	0.57	-0.48	0.31
13,378.00	91.51	313.59	7,422.65	4,409.18	-4,039.14	5,969.63	2.52	1.60	-1.94
13,474.00	90.91	314.67	7,420.62	4,476.01	-4,108.03	6,065.61	1.29	-0.62	1.12
13,569.00	91.34	315.17	7,418.76	4,543.07	-4,175.29	6,160.58	0.69	0.45	0.53
13,664.00	91.21	314.91	7,416.64	4,610.28	-4,242.40	6,255.55	0.31	-0.14	-0.27
13,759.00	90.23	313.43	7,415.45	4,676.47	-4,310.53	6,350.54	1.87	-1.03	-1.56
13,854.00	90.57	312.53	7,414.79	4,741.23	-4,380.03	6,445.51	1.01	0.36	-0.95
13,949.00	91.01	311.39	7,413.48	4,804.74	-4,450.67	6,540.43	1.29	0.46	-1.20
14,045.00	91.04	311.77	7,411.76	4,868.44	-4,522.47	6,636.31	0.40	0.03	0.40
14,141.00	89.90	312.94	7,410.97	4,933.12	-4,593.40	6,732.26	1.70	-1.19	1.22
14,235.00	90.44	312.94	7,410.69	4,997.15	-4,662.22	6,826.23	0.57	0.57	0.00
14,329.00	90.47	313.01	7,409.95	5,061.23	-4,730.99	6,920.21	0.08	0.03	0.07
14,422.00	90.54	312.01	7,409.13	5,124.07	-4,799.54	7,013.16	1.08	0.08	-1.08
14,517.00	90.77	311.26	7,408.04	5,187.18	-4,870.54	7,108.06	0.83	0.24	-0.79
14,612.00	89.56	314.91	7,407.77	5,252.06	-4,939.91	7,203.02	4.05	-1.27	3.84
14,707.00	89.56	314.69	7,408.50	5,319.00	-5,007.32	7,298.02	0.23	0.00	-0.23
14,802.00	89.83	315.62	7,409.00	5,386.35	-5,074.31	7,393.00	1.02	0.28	0.98

Company:	Statoil	Local Co-ordinate Reference:	Well North Henderson North Unit 3H - Slot North Henderson 3H
Project:	Wetzel County WW (NAD 27 UTM 17N us ft)	TVD Reference:	GL 1342.6' + KB 22' @ 1364.60usft (Orion Polaris)
Site:	North Henderson North Unit Pad	MD Reference:	GL 1342.6' + KB 22' @ 1364.60usft (Orion Polaris)
Well:	North Henderson North Unit 3H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
14,898.00	89.40	315.20	7,409.65	5,454.72	-5,141.70	7,488.98	0.63	-0.45	-0.44
14,993.00	89.40	315.28	7,410.64	5,522.17	-5,208.59	7,583.96	0.08	0.00	0.08
15,087.00	89.33	315.03	7,411.68	5,588.81	-5,274.87	7,677.94	0.28	-0.07	-0.27
15,182.00	89.56	314.57	7,412.60	5,655.75	-5,342.28	7,772.93	0.54	0.24	-0.48
15,235.00	89.53	314.99	7,413.02	5,693.08	-5,379.90	7,825.92	0.79	-0.06	0.79
Last MWD Survey at 15235' MD									
15,282.00	89.53	314.99	7,413.41	5,726.31	-5,413.14	7,872.92	0.00	0.00	0.00
Projection to TD at 15282' MD									

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
674.00	673.96	5 1/2"	5.500	6.000

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
15,235.00	7,413.02	5,693.08	-5,379.90	Last MWD Survey at 15235' MD
15,282.00	7,413.41	5,726.31	-5,413.14	Projection to TD at 15282' MD

Checked By: _____ Approved By: _____ Date: _____