



Weatherford International Ltd.

DIRECTIONAL REPORT



Company: CHESAPEAKE	Date: 3/14/2013	Time: 10:50:22	Page: 1
Field: MARSHALL COUNTY (NAD 27)	Co-ordinate(NE) Reference: Well: 3H, Grid North		
Site: FORK RIDGE PAD	Vertical (TVD) Reference: SITE 1413.0		
Well: 3H	Section (VS) Reference: Well (0.00N,0.00E,339.97Azi)		
Wellpath: HORIZONTAL	Survey Calculation Method: Minimum Curvature		Db: Sybase

Survey: WFT MWD	Start Date: 2/18/2013	
Company: Weatherford International Ltd.	Engineer: Adam Bordelon	
Tool: MWD;MWD - Standard	Tied-to: From: MS GYROS	

Field: MARSHALL COUNTY (NAD 27)

Map System: US State Plane Coordinate System 1927	Map Zone: West Virginia, Northern Zone
Geo Datum: NAD27 (Clarke 1866)	Coordinate System: Well Centre
Sys Datum: Mean Sea Level	Geomagnetic Model: IGRF2010

Site: FORK RIDGE PAD

Site Position:	Northing: 501556.11 ft	Latitude: 39 52 17.357 N	
From: Map	Easting: 1680438.31 ft	Longitude: 80 38 18.794 W	
Position Uncertainty: 0.00 ft		North Reference: Grid	
Ground Level: 1391.00 ft		Grid Convergence: -0.73 deg	

Well: 3H

Well Position: +N/-S 0.00 ft	Northing: 501556.11 ft	Latitude: 39 52 17.357 N	Slot Name:
+E/-W 0.00 ft	Easting: 1680438.31 ft	Longitude: 80 38 18.794 W	
Position Uncertainty: 0.00 ft			

Wellpath: HORIZONTAL	Drilled From: Surface	
Current Datum: SITE	Tie-on Depth: 0.00 ft	
Magnetic Data: 1/23/2013	Above System Datum: Mean Sea Level	
Field Strength: 52752 nT	Declination: -8.66 deg	
Vertical Section: Depth From (TVD)	Mag Dip Angle: 67.38 deg	
ft	+N/-S ft	Direction deg
0.00	0.00	0.00 339.97

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MORGANTOWN, WV

Plan Section Information

MD	Incl	Azim	TVD	+N/-S	+E/-W	DLS	Build	Turn	TFO	Target

Survey

MD	Incl	Azim	TVD	N/S	E/W	VS	DLS	MapN	MapE	Comment
ft	deg	deg	ft	ft	ft	ft	deg/100ft	ft	ft	
5550.00	0.93	341.53	5549.88	12.83	-14.91	17.16	0.00	501568.94	1680423.40	LAST GYRO SVY
5655.00	0.70	284.07	5654.87	13.79	-15.81	18.37	0.77	501569.90	1680422.50	FIRST MWD SVY
5748.00	0.64	298.31	5747.87	14.17	-16.81	19.08	0.19	501570.28	1680421.50	
5779.00	0.73	296.36	5778.86	14.34	-17.14	19.35	0.30	501570.45	1680421.17	
5811.00	0.99	27.89	5810.86	14.68	-17.20	19.68	3.89	501570.79	1680421.11	
5842.00	4.52	69.91	5841.82	15.34	-15.92	19.86	12.39	501571.45	1680422.39	
5874.00	8.53	76.72	5873.61	16.31	-12.43	19.58	12.74	501572.42	1680425.88	
5905.00	11.00	76.31	5904.16	17.54	-7.32	18.99	7.97	501573.65	1680430.99	
5937.00	12.06	74.13	5935.51	19.18	-1.13	18.41	3.58	501575.29	1680437.18	
5968.00	12.94	69.33	5965.78	21.29	5.23	18.21	4.39	501577.40	1680443.54	
6000.00	14.95	67.85	5996.83	24.11	12.40	18.40	6.38	501580.22	1680450.71	
6032.00	18.22	68.54	6027.50	27.50	20.89	18.68	10.24	501583.61	1680459.20	
6063.00	20.97	68.26	6056.70	31.33	30.55	18.97	8.88	501587.44	1680468.86	
6095.00	23.81	68.36	6086.28	35.83	41.88	19.32	8.88	501591.94	1680480.19	
6126.00	26.44	67.47	6114.35	40.78	54.07	19.80	8.57	501596.89	1680492.38	
6158.00	29.94	63.91	6142.55	47.03	67.83	20.95	12.13	501603.14	1680506.14	
6190.00	33.07	60.26	6169.83	54.87	82.58	23.27	11.45	501610.98	1680520.89	
6222.00	35.63	57.21	6196.25	64.25	98.00	26.80	9.64	501620.36	1680536.31	
6253.00	36.33	56.41	6221.34	74.22	113.24	30.95	2.72	501630.33	1680551.55	



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Company: CHESAPEAKE Field: MARSHALL COUNTY (NAD 27) Site: FORK RIDGE PAD Well: 3H Wellpath: HORIZONTAL	Date: 3/14/2013 Time: 10:50:22 Co-ordinate(NE) Reference: Well: 3H, Grid North Vertical (TVD) Reference: SITE 1413.0 Section (VS) Reference: Well (0.00N,0.00E,339.97Azi) Survey Calculation Method: Minimum Curvature Db: Sybase	Page: 2
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Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	MapN ft	MapE ft	Comment
6285.00	36.17	56.46	6247.14	84.69	129.01	35.38	0.51	501640.80	1680567.32	
6316.00	35.87	53.44	6272.22	95.15	143.93	40.10	5.81	501651.26	1680582.24	
6348.00	35.62	48.97	6298.20	106.85	158.49	46.11	8.20	501662.96	1680596.80	
6380.00	35.15	45.91	6324.29	119.38	172.14	53.20	5.73	501675.49	1680610.45	
6411.00	34.45	42.56	6349.74	132.05	184.48	60.88	6.57	501688.16	1680622.79	
6442.00	33.03	34.76	6375.53	145.46	195.24	69.79	14.70	501701.57	1680633.55	
6474.00	33.42	26.59	6402.32	160.51	204.16	80.88	14.03	501716.62	1680642.47	
6505.00	34.37	22.07	6428.05	176.26	211.27	93.23	8.69	501732.37	1680649.58	
6537.00	34.22	21.26	6454.49	193.01	217.92	106.70	1.50	501749.12	1680656.23	
6568.00	33.77	20.90	6480.19	209.19	224.16	119.76	1.59	501765.30	1680662.47	
6599.00	34.93	18.64	6505.79	225.65	230.07	133.20	5.56	501781.76	1680668.38	
6631.00	37.79	13.45	6531.56	243.87	235.28	148.53	13.12	501799.98	1680673.59	
6662.00	41.63	9.58	6555.41	263.27	239.20	165.42	14.73	501819.38	1680677.51	
6694.00	45.26	6.50	6578.64	285.05	242.26	184.83	13.13	501841.16	1680680.57	
6725.00	47.79	4.47	6599.97	307.44	244.40	205.14	9.44	501863.55	1680682.71	
6757.00	49.10	3.21	6621.19	331.33	246.00	227.03	5.04	501887.44	1680684.31	
6788.00	50.56	2.48	6641.19	354.99	247.18	248.86	5.04	501911.10	1680685.49	
6820.00	53.00	0.92	6660.99	380.12	247.92	272.21	8.53	501936.23	1680686.23	
6851.00	56.04	359.65	6678.98	405.36	248.04	295.88	10.36	501961.47	1680686.35	
6883.00	57.71	358.59	6696.46	432.15	247.62	321.20	5.91	501988.26	1680685.93	
6914.00	61.33	356.50	6712.19	458.84	246.47	346.66	13.04	502014.95	1680684.78	
6946.00	64.44	354.47	6726.77	487.23	244.22	374.11	11.24	502043.34	1680682.53	
6977.00	67.88	353.00	6739.30	515.41	241.12	401.64	11.91	502071.52	1680679.43	
7009.00	70.41	352.25	6750.69	545.06	237.28	430.82	8.20	502101.17	1680675.59	
7040.00	73.49	350.91	6760.30	574.21	232.97	459.68	10.75	502130.32	1680671.28	
7072.00	75.44	350.32	6768.87	604.63	227.94	489.98	6.35	502160.74	1680666.25	
7103.00	76.16	348.27	6776.47	634.15	222.36	519.64	6.82	502190.26	1680660.67	
7135.00	76.66	343.87	6783.99	664.34	214.87	550.56	13.46	502220.45	1680653.18	
7166.00	77.75	340.93	6790.86	693.15	205.73	580.76	9.89	502249.26	1680644.04	
7198.00	80.32	339.66	6796.95	722.72	195.13	612.17	8.93	502278.83	1680633.44	
7229.00	82.08	339.77	6801.69	751.45	184.51	642.80	5.69	502307.56	1680622.82	
7261.00	85.52	339.40	6805.15	781.26	173.42	674.61	10.81	502337.37	1680611.73	
7324.00	87.41	338.89	6809.03	840.02	151.03	737.48	3.11	502396.13	1680589.34	
7418.00	88.53	337.80	6812.36	927.33	116.37	831.38	1.66	502483.44	1680554.68	
7511.00	89.37	337.23	6814.06	1013.24	80.81	924.28	1.09	502569.35	1680519.12	
7605.00	89.16	337.27	6815.27	1099.92	44.46	1018.16	0.23	502656.03	1680482.77	
7700.00	88.95	337.10	6816.84	1187.48	7.63	1113.04	0.28	502743.59	1680445.94	
7795.00	88.95	339.68	6818.58	1275.78	-27.35	1207.98	2.72	502831.89	1680410.96	
7889.00	89.23	340.70	6820.07	1364.20	-59.20	1301.96	1.13	502920.31	1680379.11	
7981.00	90.84	341.02	6820.01	1451.11	-89.37	1393.95	1.78	503007.22	1680348.94	
8077.00	90.56	339.77	6818.84	1541.54	-121.57	1489.94	1.33	503097.65	1680316.74	
8172.00	91.12	340.76	6817.45	1630.95	-153.65	1584.93	1.20	503187.06	1680284.66	
8267.00	91.40	340.86	6815.36	1720.65	-184.87	1679.89	0.31	503276.76	1680253.44	
8361.00	91.19	340.36	6813.24	1809.29	-216.07	1773.86	0.58	503365.40	1680222.24	
8455.00	91.05	340.28	6811.40	1897.79	-247.72	1867.84	0.17	503453.90	1680190.59	
8548.00	91.40	340.51	6809.41	1985.37	-278.92	1960.82	0.45	503541.48	1680159.39	
8644.00	91.33	339.93	6807.12	2075.68	-311.39	2056.79	0.61	503631.79	1680126.92	
8738.00	89.58	338.76	6806.38	2163.63	-344.55	2150.78	2.24	503719.74	1680093.76	
8832.00	89.44	339.75	6807.18	2251.54	-377.84	2244.76	1.06	503807.65	1680060.47	
8927.00	89.44	340.11	6808.11	2340.76	-410.44	2339.76	0.38	503896.87	1680027.87	
9021.00	89.86	337.97	6808.68	2428.54	-444.06	2433.74	2.32	503984.65	1679994.25	
9115.00	89.72	337.20	6809.03	2515.43	-479.91	2527.66	0.83	504071.54	1679958.40	

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MORGANTOWN, WV



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Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	MapN ft	MapE ft	Comment
9207.00	90.00	337.86	6809.25	2600.45	-515.07	2619.57	0.78	504156.56	1679923.24	
9302.00	89.86	337.48	6809.37	2688.32	-551.16	2714.50	0.43	504244.43	1679887.15	
9396.00	90.07	337.81	6809.43	2775.26	-586.92	2808.42	0.42	504331.37	1679851.39	
9491.00	90.14	338.39	6809.25	2863.40	-622.35	2903.37	0.61	504419.51	1679815.96	
9586.00	90.91	340.21	6808.38	2952.26	-655.93	2998.35	2.08	504508.37	1679782.38	
9680.00	91.68	341.18	6806.26	3040.95	-686.99	3092.32	1.32	504597.06	1679751.32	
9773.00	91.89	341.00	6803.36	3128.89	-717.12	3185.26	0.30	504685.00	1679721.19	
9868.00	92.24	340.88	6799.94	3218.62	-748.12	3280.18	0.39	504774.73	1679690.19	
9962.00	92.03	341.02	6796.43	3307.41	-778.78	3374.10	0.27	504863.52	1679659.53	
10057.00	92.38	340.97	6792.78	3397.17	-809.70	3469.01	0.37	504953.28	1679628.61	
10151.00	91.12	340.66	6789.91	3485.90	-840.57	3562.96	1.38	505042.01	1679597.74	
10244.00	91.40	340.83	6787.86	3573.68	-871.23	3655.93	0.35	505129.79	1679567.08	
10339.00	90.42	340.96	6786.36	3663.43	-902.32	3750.90	1.04	505219.54	1679535.99	
10436.00	90.56	341.32	6785.53	3755.22	-933.68	3847.88	0.40	505311.33	1679504.63	
10529.00	90.63	341.49	6784.56	3843.36	-963.33	3940.84	0.20	505399.47	1679474.98	
10623.00	90.56	341.88	6783.58	3932.60	-992.87	4034.80	0.42	505488.71	1679445.44	
10718.00	90.28	341.07	6782.89	4022.67	-1023.05	4129.76	0.90	505578.78	1679415.26	
10812.00	90.00	341.32	6782.66	4111.65	-1053.35	4223.74	0.40	505667.76	1679384.96	
10906.00	90.00	338.42	6782.66	4199.90	-1085.70	4317.73	3.09	505756.01	1679352.61	
10999.00	89.79	338.82	6782.83	4286.50	-1119.60	4410.70	0.49	505842.61	1679318.71	
11094.00	89.86	339.14	6783.12	4375.18	-1153.68	4505.69	0.34	505931.29	1679284.63	
11189.00	90.00	339.48	6783.23	4464.05	-1187.24	4600.68	0.39	506020.16	1679251.07	
11282.00	89.72	340.06	6783.46	4551.31	-1219.40	4693.68	0.69	506107.42	1679218.91	
11376.00	89.79	340.29	6783.86	4639.74	-1251.28	4787.68	0.26	506195.85	1679187.03	
11471.00	90.28	340.70	6783.81	4729.29	-1283.00	4882.67	0.67	506285.40	1679155.31	
11564.00	91.19	341.82	6782.61	4817.35	-1312.87	4975.64	1.55	506373.46	1679125.44	
11659.00	90.21	339.19	6781.45	4906.89	-1344.57	5070.62	2.95	506463.00	1679093.74	
11753.00	89.79	338.20	6781.45	4994.46	-1378.72	5164.59	1.14	506550.57	1679059.59	
11847.00	90.14	338.26	6781.51	5081.76	-1413.59	5258.55	0.38	506637.87	1679024.72	
11941.00	90.56	339.00	6780.94	5169.29	-1447.84	5352.52	0.91	506725.40	1678990.47	PLAN 5 TIE ON
12036.00	91.40	340.28	6779.31	5258.34	-1480.88	5447.50	1.61	506814.45	1678957.43	
12130.00	90.70	337.35	6777.59	5345.96	-1514.84	5541.46	3.20	506902.07	1678923.47	
12225.00	91.19	337.36	6776.02	5433.63	-1551.42	5636.35	0.52	506989.74	1678886.89	
12317.00	91.40	337.47	6773.94	5518.55	-1586.74	5728.23	0.26	507074.66	1678851.57	
12411.00	90.14	338.55	6772.68	5605.70	-1621.93	5822.16	1.77	507161.81	1678816.38	
12506.00	90.07	338.79	6772.50	5694.19	-1656.49	5917.14	0.26	507250.30	1678781.82	
12601.00	90.07	340.81	6772.39	5783.35	-1689.29	6012.13	2.13	507339.46	1678749.02	
12696.00	91.12	343.13	6771.40	5873.67	-1718.69	6107.06	2.68	507429.78	1678719.62	
12790.00	91.61	343.63	6769.16	5963.72	-1745.57	6200.87	0.74	507519.83	1678692.74	
12884.00	91.89	343.08	6766.29	6053.74	-1772.48	6294.66	0.66	507609.85	1678665.83	
12935.00	91.89	343.17	6764.61	6102.51	-1787.28	6345.56	0.18	507658.62	1678651.03	LAST MWD SVY
12994.00	91.89	343.17	6762.66	6158.95	-1804.35	6404.43	0.00	507715.06	1678633.96	PROJ TO BIT

Targets

Name	Description Dip.	TVD Dir.	+N/-S	+E/-W	Map	Map	<--- Latitude --->			<--- Longitude --->		
					Northing	Easting	Deg	Min	Sec	Deg	Min	Sec

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DIRECTIONAL REPORT



Company: CHESAPEAKE	Date: 3/14/2013	Time: 10:50:22	Page: 4
Field: MARSHALL COUNTY (NAD 27)	Co-ordinate(NE) Reference: Well: 3H, Grid North		
Site: FORK RIDGE PAD	Vertical (TVD) Reference: SITE 1413.0		
Well: 3H	Section (VS) Reference: Well (0.00N,0.00E,339.97Azi)		
Wellpath: HORIZONTAL	Survey Calculation Method: Minimum Curvature		Db: Sybase

Casing Points

MD	TVD	Diameter	Hole Size	Name

Annotation

MD ft	TVD ft	
5550.00	5549.88	LAST GYRO SVY
5655.00	5654.87	FIRST MWD SVY
12935.00	6764.61	LAST MWD SVY
12994.00	6762.66	PROJ TO BIT
11941.00	6780.94	PLAN 5 TIE ON

Formations

MD	TVD	Formations	Lithology	Dip Angle Dip Direction

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