

Company:	EQT PRODUCTION	Local Co-ordinate Reference:	Well Well #513775
Project:	Doddridge County, WV	TVD Reference:	RKB=1220+23 @ 1243.00usft (Savanna 803)
Site:	OXF160	MD Reference:	RKB=1220+23 @ 1243.00usft (Savanna 803)
Well:	Well #513775	North Reference:	Grid
Wellbore:	Main Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	Well 513775 As Drilled Surveys	Database:	DB Jul2216dt

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Project	Doddridge County, WV		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	West Virginia North 4701		

JUL 20 2017

WV Department of
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Site	OXF160				
Site Position:		Northing:	250,835.87 usft	Latitude:	39° 10' 52.9707 N
From:	Map	Easting:	1,631,720.38 usft	Longitude:	80° 47' 57.0806 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.83 °

Well	Well #513775					
Well Position	+N/-S	0.00 usft	Northing:	250,880.71 usft	Latitude:	39° 10' 53.4134 N
	+E/-W	0.00 usft	Easting:	1,631,716.66 usft	Longitude:	80° 47' 57.1360 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	1,220.00 usft

Wellbore	Main Wellbore				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	12/16/2016	-7.78	66.50	52,011

Design	Well 513775 As Drilled 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	165.06	

Survey Program	Date	12/20/2016			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
110.00	3,870.00	513775 Gyrodata Gyro (Main Wellbore)	GYD_DP_MS	Gyrodata gyro-compassing and drop	
3,916.00	6,641.00	513775 SDI MWD (Main Wellbore)	SDI MWD	SDI MWD - Standard ver 1.0.1	
6,666.00	10,756.00	513775 MWD (Main Wellbore)	MWD - OWSG	MWD - OWSG	

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110.00	0.35	57.27	110.00	0.18	0.28	-0.10	0.32	0.32	0.00
210.00	0.40	72.90	210.00	0.45	0.87	-0.21	0.11	0.05	15.63
310.00	0.32	79.04	310.00	0.61	1.48	-0.20	0.09	-0.08	6.14
410.00	0.32	73.60	409.99	0.74	2.02	-0.19	0.03	0.00	-5.44
510.00	0.20	73.90	509.99	0.86	2.46	-0.20	0.12	-0.12	0.30
610.00	0.05	48.70	609.99	0.94	2.66	-0.22	0.16	-0.15	-25.20
710.00	0.08	42.10	709.99	1.02	2.74	-0.28	0.03	0.03	-6.60
810.00	0.21	90.27	809.99	1.07	2.97	-0.27	0.17	0.13	48.17



Company: EQT PRODUCTION
Project: Doddridge County, WV
Site: OXF160
Well: Well #513775
Wellbore: Main Wellbore
Design: Well 513775 As Drilled Surveys

Local Co-ordinate Reference: Environmental Protection
TVD Reference: RKB=1220+23 @ 1243.00usft (Savanna 803)
MD Reference: RKB=1220+23 @ 1243.00usft (Savanna 803)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: DB Jul2216dt

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
910.00	0.28	86.28	909.99	1.09	3.40	-0.18	0.07	0.07	-3.99	
1,010.00	0.44	78.67	1,009.99	1.18	4.02	-0.10	0.17	0.16	-7.61	
1,110.00	0.57	85.70	1,109.99	1.29	4.69	0.01	0.14	0.13	7.03	
1,210.00	0.68	91.97	1,209.98	1.31	5.98	0.28	0.13	0.11	6.27	
1,310.00	0.75	95.58	1,309.97	1.22	7.22	0.68	0.08	0.07	3.61	
1,410.00	0.91	105.69	1,409.96	0.95	8.64	1.31	0.22	0.15	10.11	
1,510.00	1.08	98.75	1,509.95	0.59	10.33	2.10	0.21	0.17	-6.94	
1,610.00	1.18	97.82	1,609.93	0.30	12.29	2.87	0.10	0.10	-0.93	
1,710.00	1.23	97.03	1,709.90	0.03	14.37	3.67	0.05	0.05	-0.79	
1,810.00	1.21	98.72	1,809.88	-0.26	16.48	4.50	0.04	-0.02	1.69	
1,910.00	1.05	103.29	1,909.86	-0.63	18.42	5.35	0.16	-0.16	4.57	
2,010.00	0.93	107.32	2,009.85	-1.08	20.08	6.22	0.14	-0.12	4.03	
2,110.00	0.84	105.28	2,109.84	-1.52	21.56	7.02	0.10	-0.09	-2.04	
2,210.00	0.53	109.27	2,209.83	-1.86	22.71	7.65	0.31	-0.31	3.99	
2,310.00	0.45	109.91	2,309.82	-2.15	23.51	8.14	0.08	-0.08	0.64	
2,410.00	0.33	101.53	2,409.82	-2.34	24.16	8.49	0.13	-0.12	-8.36	
2,510.00	0.29	98.21	2,509.82	-2.43	24.70	8.72	0.04	-0.04	-3.32	
2,610.00	0.31	108.94	2,609.82	-2.55	25.21	8.96	0.05	0.02	8.73	
2,710.00	0.22	89.64	2,709.82	-2.63	25.66	9.15	0.12	-0.09	-17.30	
2,810.00	0.24	87.28	2,809.82	-2.61	26.06	9.24	0.02	0.02	-2.36	
2,910.00	0.25	91.07	2,909.82	-2.61	26.49	9.35	0.02	0.01	3.79	
3,010.00	0.29	92.66	3,009.82	-2.62	26.98	9.49	0.04	0.04	1.59	
3,110.00	0.39	94.32	3,109.81	-2.66	27.55	9.67	0.10	0.10	1.66	
3,210.00	0.40	85.32	3,209.81	-2.66	28.24	9.85	0.06	0.01	-9.00	
3,310.00	0.37	86.86	3,309.81	-2.61	28.91	9.98	0.03	-0.03	1.54	
3,410.00	0.28	74.84	3,409.81	-2.53	29.46	10.04	0.11	-0.09	-12.02	
3,510.00	0.25	76.46	3,509.81	-2.42	29.91	10.05	0.03	-0.03	1.62	
3,610.00	0.24	61.02	3,609.81	-2.26	30.31	10.00	0.07	-0.01	-15.44	
3,710.00	0.15	61.16	3,709.80	-2.10	30.61	9.92	0.09	-0.09	0.14	
3,810.00	0.08	33.32	3,809.80	-1.98	30.76	9.84	0.09	-0.07	-27.84	
3,870.00	0.11	335.50	3,869.80	-1.89	30.76	9.76	0.16	0.05	-96.37	
KOP @ 3870 MD 3870 TVD										
3,916.00	2.17	269.70	3,915.79	-1.85	29.87	9.49	4.62	4.48	-143.04	
3,958.00	5.91	268.01	3,957.68	-1.93	26.91	8.81	8.91	8.90	-4.02	
4,001.00	10.06	267.80	4,000.26	-2.15	20.94	7.48	9.65	9.65	-0.49	
4,043.00	14.64	267.37	4,041.27	-2.54	11.97	5.54	10.91	10.90	-1.02	
4,086.00	19.11	265.27	4,082.41	-3.37	-0.48	3.13	10.49	10.40	-4.88	
4,128.00	22.81	265.12	4,121.62	-4.63	-15.45	0.49	8.81	8.81	-0.36	
4,170.00	25.28	265.54	4,159.98	-6.02	-32.50	-2.56	5.90	5.88	1.00	
4,212.00	27.25	265.87	4,197.64	-7.41	-51.04	-6.00	4.70	4.69	0.79	
4,253.00	29.82	266.48	4,233.66	-8.71	-70.58	-9.78	6.31	6.27	1.49	
4,295.00	32.70	267.21	4,269.55	-9.91	-92.33	-14.23	6.92	6.86	1.74	
4,338.00	35.56	267.44	4,305.15	-11.03	-116.43	-19.36	6.66	6.65	0.53	



Survey Report

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WV Department of
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PRO-DIRECTIONAL

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Site: OXF160
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Wellbore: Main Wellbore
Design: Well 513775 As Drilled Surveys

Local Co-ordinate Reference: Well #513775
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North Reference: Grid
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Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,381.00	37.41	267.94	4,339.72	-12.06	-141.98	-24.95	4.36	4.30	1.16
4,423.00	39.10	267.74	4,372.70	-13.04	-167.96	-30.71	4.03	4.02	-0.48
4,466.00	39.55	266.98	4,405.96	-14.29	-195.18	-36.51	1.53	1.05	-1.77
4,509.00	40.69	266.77	4,438.84	-15.81	-222.85	-42.18	2.67	2.65	-0.49
4,550.00	40.66	265.88	4,469.94	-17.52	-249.52	-47.40	1.42	-0.07	-2.17
4,592.00	40.00	284.70	4,501.95	-19.75	-276.81	-52.23	2.40	-1.57	-2.81
4,635.00	40.16	265.34	4,534.86	-22.15	-304.19	-57.02	1.03	0.37	1.49
4,676.00	41.22	266.14	4,565.94	-24.13	-330.84	-61.98	2.88	2.59	1.95
4,718.00	42.41	266.72	4,597.25	-25.88	-358.79	-67.50	2.98	2.83	1.38
4,760.00	42.17	265.80	4,628.32	-27.72	-386.99	-72.99	1.58	-0.57	-2.19
4,803.00	41.43	264.57	4,660.37	-30.12	-415.55	-78.03	2.57	-1.72	-2.86
4,846.00	41.14	264.94	4,692.68	-32.72	-443.80	-82.81	0.88	-0.67	0.86
4,888.00	41.26	266.08	4,724.28	-34.88	-471.39	-87.83	1.82	0.33	2.71
4,931.00	41.30	266.64	4,756.59	-36.68	-499.71	-93.39	0.85	0.05	1.30
4,973.00	41.50	267.17	4,788.09	-38.18	-527.44	-99.09	0.95	0.48	1.26
5,016.00	41.94	267.35	4,820.19	-39.55	-555.02	-105.14	1.05	1.02	0.42
5,058.00	41.29	266.77	4,851.59	-40.98	-583.88	-110.94	1.60	-1.55	-1.38
5,100.00	40.93	267.37	4,883.24	-42.39	-611.46	-116.68	1.27	-0.86	1.43
5,143.00	41.17	268.84	4,915.66	-43.33	-639.68	-123.06	2.31	0.56	3.42
5,185.00	40.80	268.37	4,947.37	-44.00	-667.22	-129.51	1.15	-0.88	-1.12
5,226.00	41.63	267.47	4,978.21	-44.98	-694.21	-135.52	2.49	2.02	-2.20
5,269.00	41.75	267.32	5,010.32	-46.28	-722.78	-141.63	0.38	0.28	-0.35
5,311.00	41.66	268.00	5,041.68	-47.42	-750.70	-147.72	1.10	-0.21	1.62
5,352.00	41.47	267.80	5,072.35	-48.42	-777.89	-153.77	0.57	-0.46	-0.49
5,395.00	42.19	267.68	5,104.39	-49.55	-806.54	-160.06	1.68	1.67	-0.28
5,440.00	41.41	266.90	5,137.94	-50.96	-836.50	-166.42	2.08	-1.73	-1.73
5,482.00	40.87	267.89	5,169.57	-52.22	-864.10	-172.32	2.01	-1.29	2.36
5,527.00	40.40	267.75	5,203.72	-53.34	-893.39	-178.79	1.06	-1.04	-0.31
5,569.00	41.09	266.78	5,235.54	-54.64	-920.77	-184.59	2.23	1.64	-2.31
5,611.00	40.93	266.02	5,267.23	-56.37	-948.27	-190.01	1.25	-0.38	-1.81
5,654.00	40.79	265.56	5,299.76	-58.44	-976.33	-195.25	0.77	-0.33	-1.07
5,698.00	40.43	266.22	5,333.16	-60.49	-1,004.89	-200.63	1.27	-0.82	1.50
5,739.00	40.06	266.04	5,364.45	-62.28	-1,031.32	-205.71	0.95	-0.90	-0.44
5,782.00	41.24	265.81	5,397.08	-64.27	-1,059.26	-210.99	2.77	2.74	-0.53
5,825.00	41.30	265.13	5,429.40	-66.51	-1,087.54	-216.12	1.05	0.14	-1.58
5,868.00	41.64	266.30	5,461.82	-68.64	-1,115.93	-221.38	1.97	0.79	2.72
5,909.00	41.12	266.28	5,492.38	-70.39	-1,142.98	-226.66	1.27	-1.27	-0.05
5,952.00	40.10	268.87	5,525.03	-71.58	-1,170.94	-232.72	4.58	-2.37	8.02
5,996.00	39.30	269.25	5,558.88	-72.05	-1,199.04	-239.52	1.90	-1.82	0.86
6,039.00	39.72	269.15	5,592.05	-72.43	-1,226.39	-246.20	0.99	0.98	-0.23
6,081.00	40.53	268.78	5,624.17	-72.92	-1,253.45	-252.70	2.01	1.93	-0.88
6,124.00	42.37	267.97	5,656.40	-73.73	-1,281.91	-259.26	4.46	4.28	-1.88
6,166.00	43.11	267.57	5,687.24	-74.84	-1,310.39	-265.53	1.88	1.76	-0.95
6,208.00	41.40	267.03	5,718.33	-76.17	-1,338.60	-271.52	4.16	-4.07	-1.29



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Well #513775

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6,250.00	39.48	266.55	5,750.29	-77.69	-1,365.80	-277.06	4.63	-4.57	-1.14
6,293.00	39.88	266.83	5,783.39	-79.27	-1,393.21	-262.59	1.02	0.93	0.65
6,335.00	39.96	266.86	5,815.60	-80.76	-1,420.12	-288.10	0.20	0.19	0.07
6,379.00	41.69	267.03	5,848.89	-82.29	-1,448.84	-294.02	3.94	3.93	0.39
6,422.00	42.85	267.23	5,880.71	-83.74	-1,477.73	-300.07	2.72	2.70	0.47
6,465.00	44.37	267.67	5,911.85	-85.05	-1,507.36	-306.44	3.60	3.53	1.02
6,508.00	44.73	267.18	5,942.49	-86.41	-1,537.49	-312.90	1.16	0.84	-1.14
6,551.00	43.12	266.44	5,973.46	-88.07	-1,567.27	-318.97	3.93	-3.74	-1.72
6,596.00	40.96	265.48	6,006.88	-90.19	-1,597.33	-324.68	5.01	-4.80	-2.13
6,641.00	40.31	266.06	6,041.03	-92.35	-1,626.56	-330.12	1.57	-1.44	1.29
6,686.00	39.60	266.00	6,060.19	-93.46	-1,642.57	-333.18	2.84	-2.84	-0.24
ProD MWD surveys									
6,697.00	38.40	265.40	6,084.28	-94.92	-1,662.03	-336.78	4.06	-3.67	-1.94
6,729.00	40.70	265.90	6,108.95	-96.46	-1,682.34	-340.53	7.26	7.19	1.56
6,760.00	43.90	266.30	6,131.88	-97.88	-1,703.15	-344.52	10.36	10.32	1.29
6,792.00	43.60	262.20	6,155.00	-100.09	-1,725.16	-348.06	8.91	-0.94	-12.81
6,823.00	43.30	257.50	6,177.51	-103.85	-1,746.14	-349.84	10.47	-0.97	-15.16
6,855.00	43.70	252.10	6,200.73	-109.62	-1,767.38	-349.74	11.88	1.25	-16.88
6,886.00	44.00	247.80	6,223.09	-117.02	-1,787.53	-347.79	10.10	0.97	-14.52
6,918.00	44.50	243.50	6,246.02	-126.28	-1,807.84	-344.09	9.07	1.56	-12.81
6,949.00	45.10	239.40	6,268.02	-136.70	-1,827.02	-338.95	9.52	1.94	-13.23
6,980.00	44.70	237.10	6,289.98	-148.21	-1,845.62	-332.63	5.39	-1.29	-7.42
7,012.00	44.90	233.90	6,312.69	-160.98	-1,864.20	-325.08	7.07	0.63	-10.00
7,043.00	46.10	228.30	6,334.43	-174.86	-1,881.39	-316.10	13.45	3.87	-18.06
7,075.00	47.70	224.40	6,356.29	-190.99	-1,898.28	-304.87	10.21	5.00	-12.19
7,106.00	48.90	220.60	6,376.92	-208.05	-1,913.91	-292.41	9.94	3.87	-12.26
7,138.00	50.60	217.30	6,397.60	-227.05	-1,929.25	-278.01	9.49	5.31	-10.31
7,169.00	52.80	213.60	6,416.82	-246.86	-1,943.34	-262.50	11.75	7.10	-11.94
7,201.00	53.30	210.00	6,436.06	-268.59	-1,956.81	-244.98	9.12	1.56	-11.25
7,232.00	54.00	206.80	6,454.43	-290.55	-1,968.68	-226.82	8.61	2.26	-10.32
7,264.00	56.00	202.70	6,472.79	-314.35	-1,979.64	-206.65	12.21	6.25	-12.81
7,296.00	56.00	199.30	6,490.22	-339.40	-1,989.25	-164.92	10.86	6.25	-10.63
7,327.00	59.20	196.20	6,506.36	-364.60	-1,997.31	-162.66	9.37	3.87	-10.00
7,359.00	61.70	194.10	6,522.16	-391.47	-2,004.56	-138.57	9.68	7.81	-6.56
7,390.00	64.80	192.20	6,536.11	-418.42	-2,010.87	-114.15	11.40	10.00	-6.13
7,422.00	67.20	188.90	6,549.13	-447.16	-2,016.21	-87.77	12.04	7.50	-10.31
7,453.00	68.80	185.50	6,560.74	-475.67	-2,019.81	-61.15	11.40	5.16	-10.97
7,485.00	71.10	183.40	6,571.71	-505.63	-2,022.14	-32.79	9.47	7.19	-6.56
7,516.00	74.60	181.50	6,580.86	-535.22	-2,023.40	-4.53	12.72	11.29	-6.13
7,548.00	76.20	178.90	6,588.92	-566.18	-2,023.50	25.36	9.32	5.00	-6.13
7,579.00	77.30	176.20	6,596.03	-596.33	-2,022.21	54.82	9.19	3.55	-6.71
7,611.00	78.90	173.80	6,602.63	-627.52	-2,019.48	85.65	8.88	5.00	-7.50
7,643.00	79.80	170.20	6,608.54	-658.65	-2,015.10	116.87	11.41	2.81	-11.25



Survey Report

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JUL 20 2017



PRO DIRECTIONAL

Company: EQT PRODUCTION
Project: Doddridge County, WV
Site: OXF160
Well: Well #513775
Wellbore: Main Wellbore
Design: Well 513775 As Drilled Surveys

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

WV Department of
 Environmental Protection
 Well #513775
 RKB=1220+23 @ 1243.00usft (Savanna 803)
 RKB=1220+23 @ 1243.00usft (Savanna 803)
 Grid
 Minimum Curvature
 DB Jul2216dt

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,674.00	80.10	169.00	6,613.95	-688.67	-2,009.59	147.29	3.93	0.97	-3.87
7,706.00	82.50	168.40	6,618.79	-719.69	-2,003.40	178.86	7.73	7.50	-1.88
7,737.00	86.20	167.80	6,621.85	-749.87	-1,997.04	209.66	12.09	11.94	-1.94
7,768.00	87.20	167.70	6,623.63	-780.12	-1,990.47	240.58	3.24	3.23	-0.32
7,791.00	87.13	167.02	6,624.77	-802.53	-1,985.44	263.53	2.96	-0.32	-2.95
LP @ 7791 MD 6625 TVD									
7,863.00	86.90	164.90	6,628.52	-872.28	-1,968.00	335.42	2.96	-0.31	-2.95
7,957.00	89.10	164.90	6,631.80	-862.97	-1,943.53	429.35	2.34	2.34	0.00
8,052.00	89.60	164.30	6,632.88	-1,054.56	-1,918.31	524.34	0.82	0.53	-0.63
8,146.00	90.70	165.80	6,632.63	-1,145.37	-1,894.06	618.34	1.88	1.17	1.60
8,240.00	91.60	164.20	6,630.75	-1,236.15	-1,869.73	712.32	1.95	0.96	-1.70
8,335.00	92.00	163.70	6,627.76	-1,327.40	-1,843.48	807.25	0.67	0.42	-0.53
8,429.00	90.20	164.70	6,625.96	-1,417.82	-1,817.89	901.22	2.19	-1.91	1.08
8,524.00	89.40	167.90	6,626.29	-1,510.11	-1,795.40	996.18	3.47	-0.84	3.37
8,618.00	89.70	167.30	6,627.03	-1,601.91	-1,775.21	1,090.09	0.71	0.32	-0.64
8,712.00	89.90	167.00	6,627.35	-1,693.56	-1,754.31	1,184.02	0.38	0.21	-0.32
8,807.00	91.60	167.20	6,626.11	-1,786.15	-1,733.10	1,278.95	1.80	1.79	0.21
8,901.00	92.10	166.60	6,623.08	-1,877.65	-1,711.81	1,372.85	0.83	0.53	-0.64
8,995.00	89.60	165.10	6,621.68	-1,968.78	-1,688.83	1,466.82	3.10	-2.66	-1.60
9,090.00	90.10	165.80	6,621.93	-2,060.73	-1,664.97	1,561.82	0.91	0.53	0.74
9,184.00	90.10	164.60	6,621.77	-2,151.61	-1,640.96	1,655.82	1.28	0.00	-1.28
9,278.00	89.30	160.90	6,622.26	-2,241.37	-1,613.09	1,749.72	4.03	-0.85	-3.94
9,373.00	89.00	160.50	6,623.67	-2,331.02	-1,581.69	1,844.44	0.53	-0.32	-0.42
9,467.00	87.20	166.80	6,626.79	-2,421.12	-1,555.26	1,938.31	6.97	-1.91	6.70
9,562.00	89.80	166.10	6,629.27	-2,513.43	-1,533.01	2,033.24	2.83	2.74	-0.74
9,656.00	89.80	164.20	6,629.60	-2,604.29	-1,508.92	2,127.23	2.02	0.00	-2.02
9,750.00	89.80	167.50	6,629.93	-2,695.42	-1,485.94	2,221.21	3.51	0.00	3.51
9,845.00	90.40	166.90	6,629.77	-2,788.06	-1,464.89	2,316.14	0.89	0.63	-0.63
9,939.00	87.70	167.60	6,631.32	-2,879.72	-1,444.15	2,410.05	2.97	-2.87	0.74
10,034.00	88.00	167.60	6,634.89	-2,972.44	-1,423.77	2,504.89	0.32	0.32	0.00
10,128.00	90.80	168.60	6,635.87	-3,064.41	-1,404.39	2,598.74	3.16	2.98	1.06
Deepest point @ 10128 MD 6636 TVD									
10,222.00	91.50	165.80	6,633.98	-3,156.04	-1,383.57	2,692.65	3.07	0.74	-2.98
10,317.00	91.50	165.10	6,631.50	-3,247.96	-1,359.71	2,787.61	0.74	0.00	-0.74
10,411.00	89.40	166.00	6,630.76	-3,338.98	-1,336.26	2,881.60	2.43	-2.23	0.96
10,505.00	89.90	166.90	6,631.33	-3,430.36	-1,314.23	2,975.57	1.10	0.53	0.96
10,600.00	90.30	165.30	6,631.17	-3,522.58	-1,291.41	3,070.55	1.74	0.42	-1.68
10,694.00	88.30	166.20	6,632.32	-3,613.67	-1,268.28	3,164.53	2.33	-2.13	0.96
10,702.00	88.30	166.10	6,632.55	-3,621.43	-1,266.36	3,172.53	1.25	0.00	-1.25
Survey @ 10702.00 MD									
10,756.00	88.30	166.10	6,634.16	-3,673.83	-1,253.40	3,226.49	0.00	0.00	0.00
Survey projected to 10756.00 MD									

Company:	EQT PRODUCTION	Local Co-ordinate Reference:	Well Well #513775
Project:	Doddridge County, WV	TVD Reference:	RKB=1220+23 @ 1243.00usft (Savanna 803)
Site:	OXF160	MD Reference:	RKB=1220+23 @ 1243.00usft (Savanna 803)
Well:	Well #513775	North Reference:	Grid
Wellbore:	Main Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	Well 513775 As Drilled Surveys	Database:	DB Jul2216dt

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
513775 LP as drilled - actual wellpath hits target center - Point	0.00	350.00	6,624.77	-802.53	-1,985.44	250,078.18	1,629,731.22	39° 10' 45.1973 N	80° 48' 22.1991 W
513775 BHL as drilled - actual wellpath misses target center by 0.01usft at 10756.00usft MD (6634.16 TVD, -3673.83 N, -1253.40 E) - Point	0.00	0.00	6,634.16	-3,673.83	-1,253.40	247,206.88	1,630,463.26	39° 10' 16.9249 N	80° 48' 12.3749 W

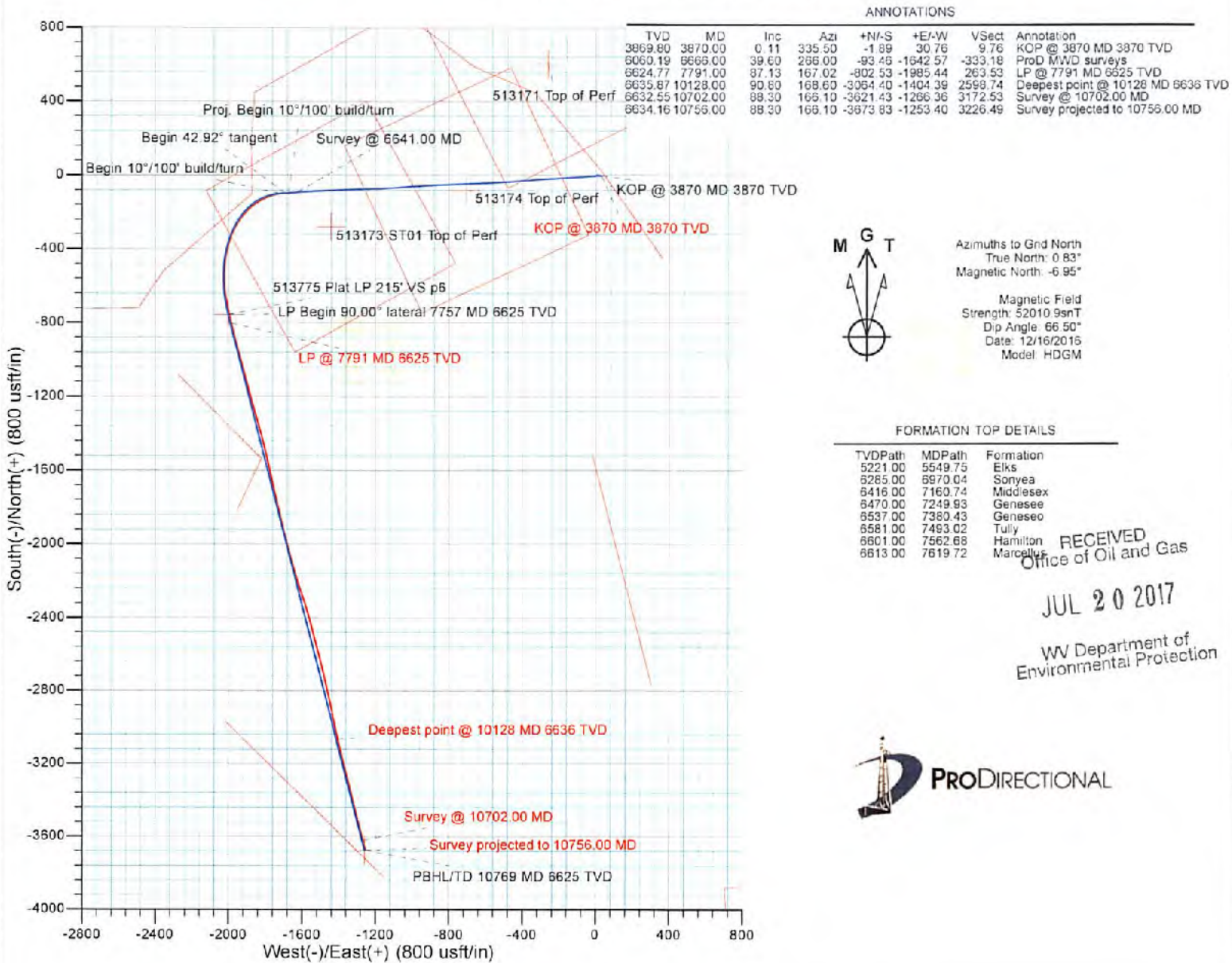
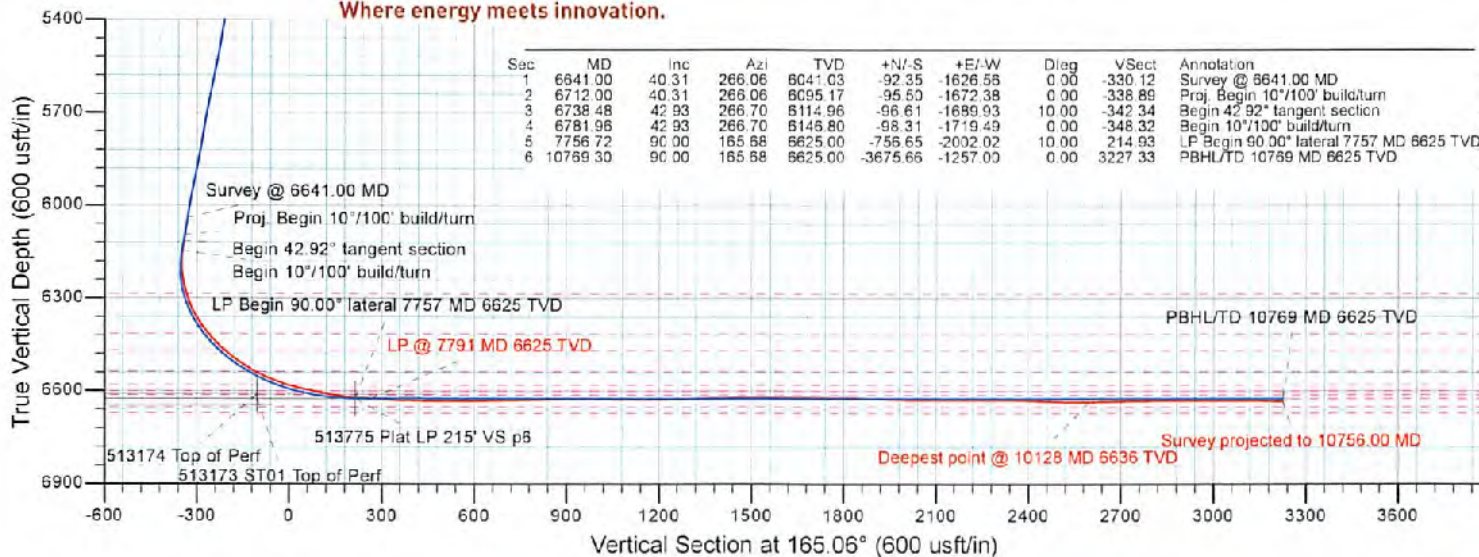
Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
3,870.00	3,869.60	-1.89	30.76	KOP @ 3870 MD 3870 TVD	
6,666.00	6,060.19	-93.46	-1,642.57	ProD MWD surveys	
7,791.00	6,624.77	-802.53	-1,985.44	LP @ 7791 MD 6625 TVD	
10,128.00	6,635.87	-3,064.41	-1,404.39	Deepest point @ 10128 MD 6636 TVD	
10,702.00	6,632.55	-3,621.43	-1,266.36	Survey @ 10702.00 MD	
10,756.00	6,634.16	-3,673.83	-1,253.40	Survey projected to 10756.00 MD	

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Project: Doddridge County, WV
 Site: OXF160
 Well: Well #513775
 Wellbore: Main Wellbore
 Design: 513775 plan6

Where energy meets innovation.



Azimuths to Grd North
 True North: 0.83°
 Magnetic North: -6.95°
 Magnetic Field Strength: 52010.9nT
 Dip Angle: 66.50°
 Date: 12/16/2016
 Model: HDGM

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
5221.00	5549.75	Elks
5285.00	8970.04	Sonyea
6416.00	7160.74	Middlesex
6470.00	7249.93	Genesee
6537.00	7380.43	Genesee
6581.00	7493.02	Hamilton
6601.00	7562.68	Marcellus
6613.00	7619.72	Marcellus

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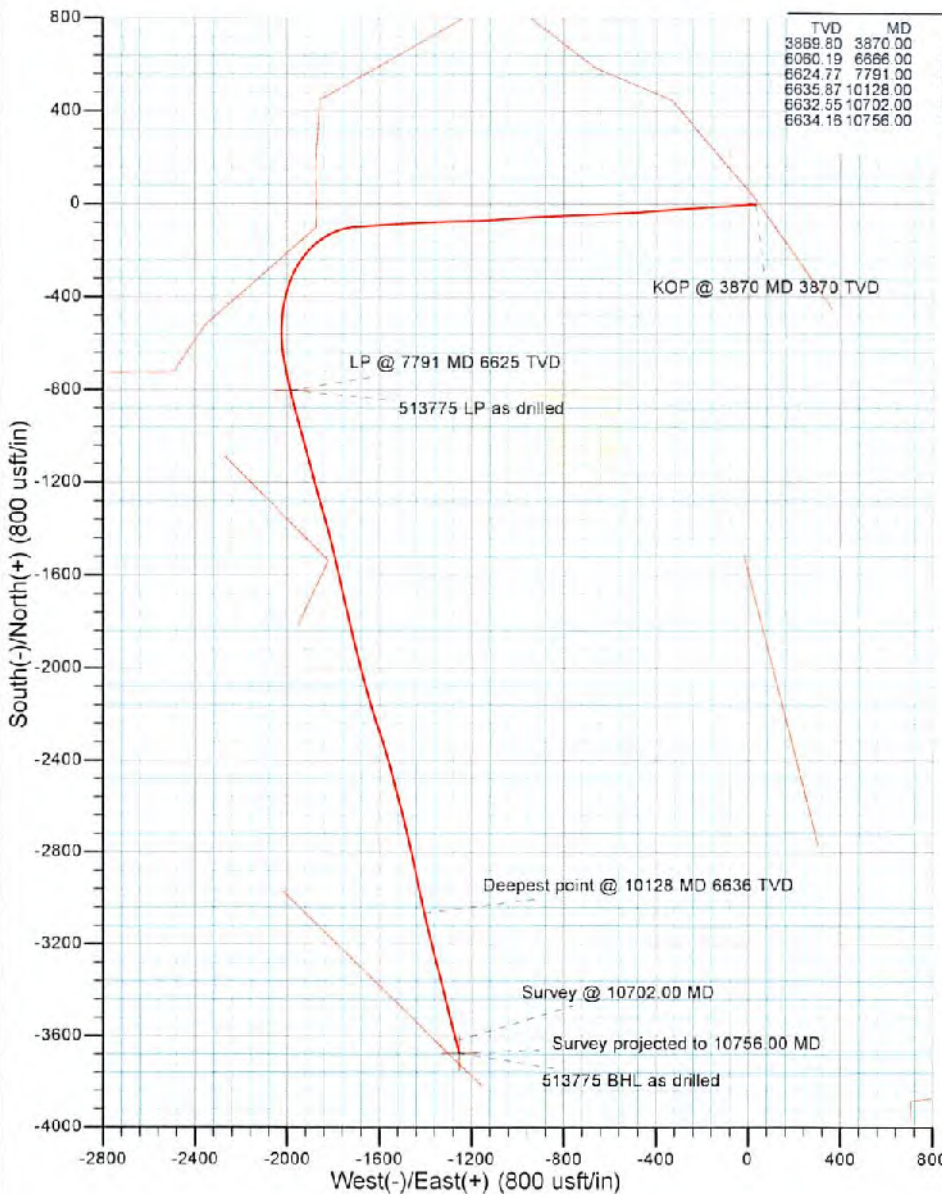
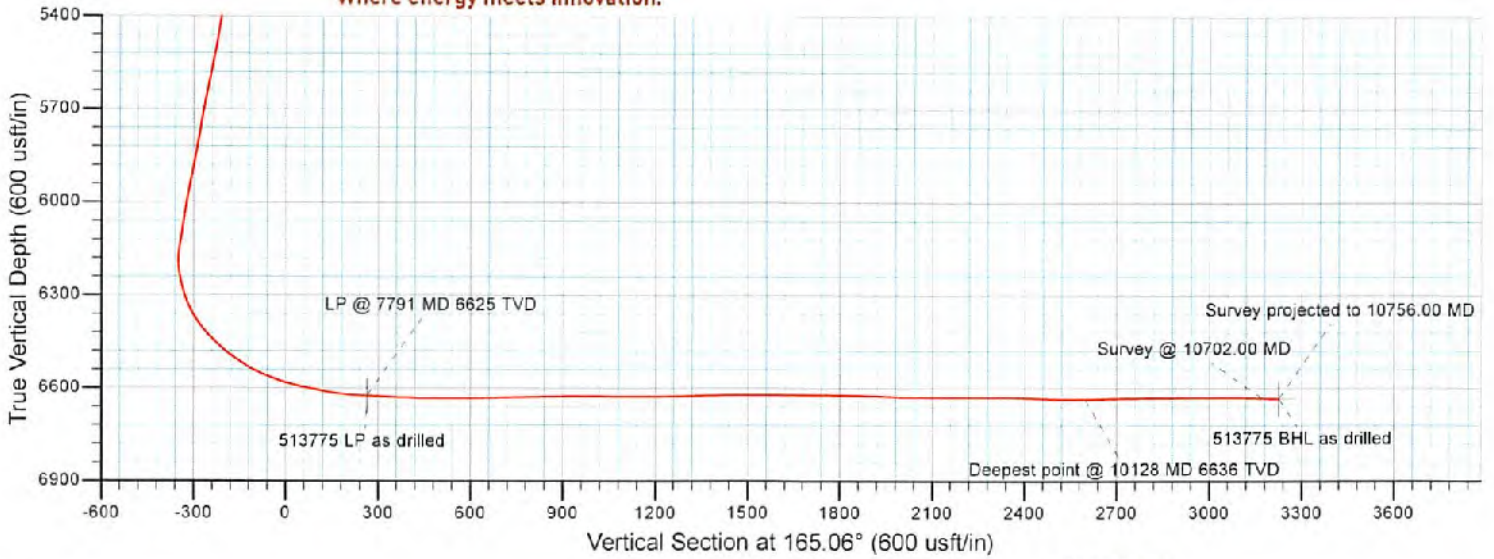


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Where energy meets innovation.

Project: Doddridge County, WV
 Site: OXF160
 Well: Well #513775
 Wellbore: Main Wellbore
 Design: Well 513775 As Drilled Surveys



ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	V Sect	Annotation
3869.80	3870.00	0.11	335.50	-1.89	30.76	9.76	KOP @ 3870 MD 3870 TVD
6060.19	6666.00	39.60	266.00	-93.46	-1642.57	-333.18	Prod MWD surveys
6624.77	7791.00	87.13	167.02	-802.53	-1985.44	263.53	LP @ 7791 MD 6625 TVD
6635.87	10128.00	90.80	166.60	-3064.40	-1404.39	2598.74	Deepest point @ 10128 MD 6636 TVD
6632.55	10702.00	88.30	166.10	-3621.43	-1266.36	3172.53	Survey @ 10702.00 MD
6634.15	10756.00	88.30	166.10	-3673.83	-1253.40	3226.49	Survey projected to 10756.00 MD



Azimuths to Grid North
 True North: 0.83°
 Magnetic North: -5.95°

Magnetic Field
 Strength: 52010.9snT
 Dip Angle: 66.50°
 Date: 12/16/2016
 Model: HDGM

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