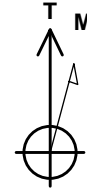




Project: Weld County, CO NAD 83  
Site: Johnson Trust  
Well: Johnson Trust 5  
Wellbore: OH  
Design: Plan 3



Azimuths to True North  
Magnetic North: 8.60°

Magnetic Field  
Strength: 52403.1snT  
Dip Angle: 66.70°  
Date: 12/29/2015  
Model: BGGM2015

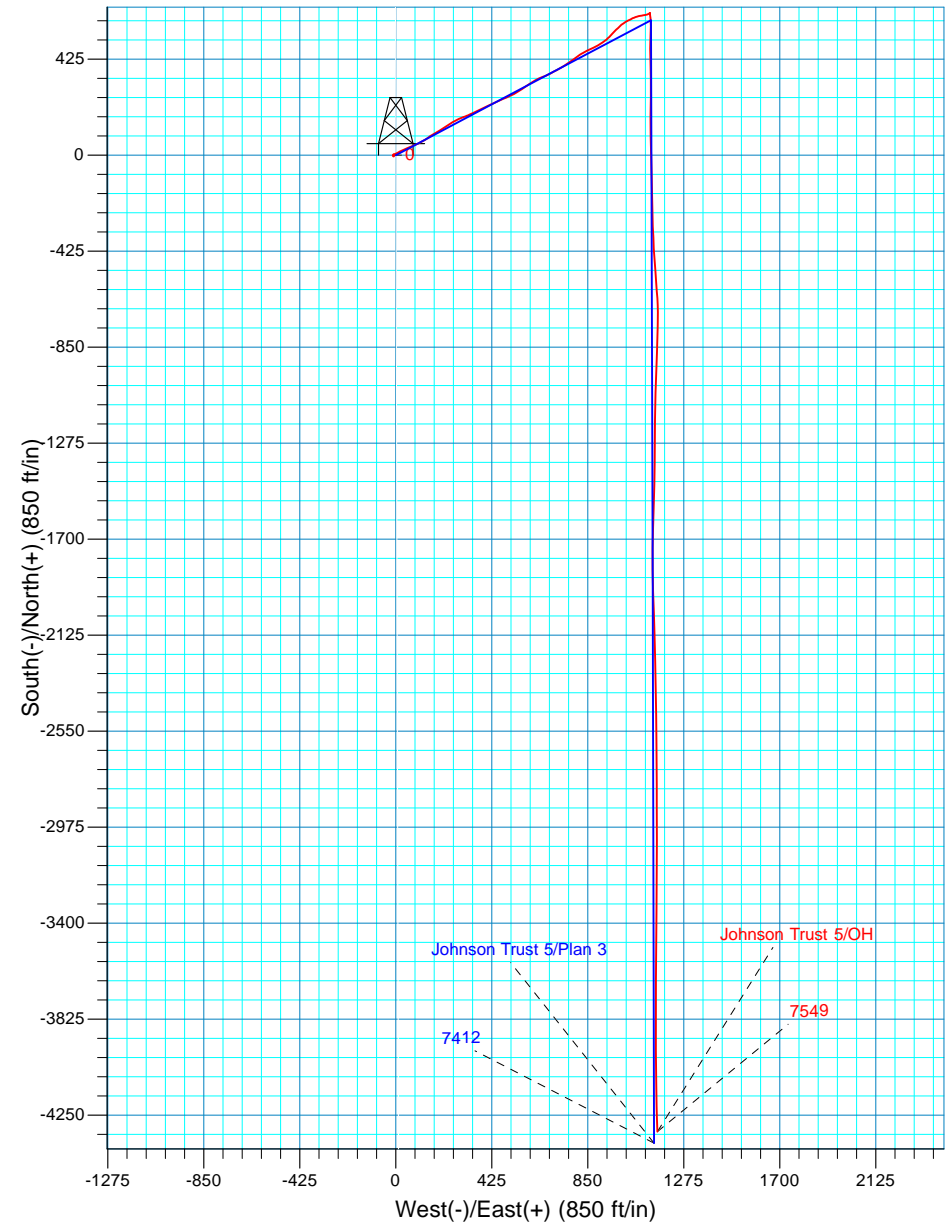
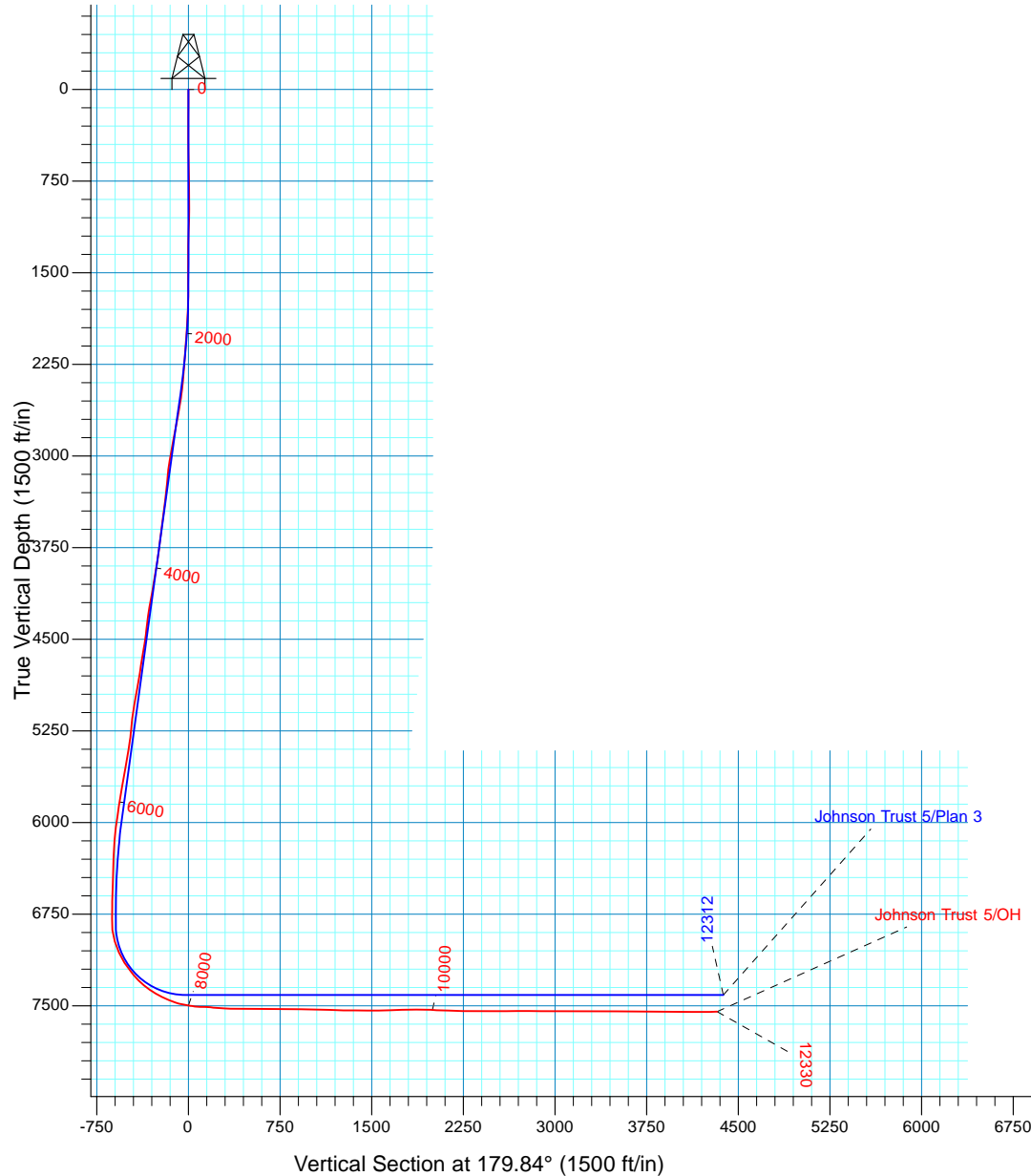
#### WELL DETAILS: Johnson Trust 5

GL 4925' & KB 24.5' @ 4949.50ft (Patterson 346) 4925.00  
Northing Easting Latitude Longitude  
1293336.56 3151083.59 40° 8' 14.420 N 104° 57' 34.632 W

#### PROJECT DETAILS: Weld County, CO NAD 83

Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Northern Zone

System Datum: Mean Sea Level  
Local North: True





## **Extraction Oil & Gas**

**Weld County, CO NAD 83**

**Johnson Trust**

**Johnson Trust 5**

**OH**

**Design: OH**

## **Standard Survey Report**

**01 February, 2016**



<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Johnson Trust 5
<b>Project:</b>	Weld County, CO NAD 83	<b>TVD Reference:</b>	GL 4925' & KB 24.5' @ 4949.50ft (Patterson 346)
<b>Site:</b>	Johnson Trust	<b>MD Reference:</b>	GL 4925' & KB 24.5' @ 4949.50ft (Patterson 346)
<b>Well:</b>	Johnson Trust 5	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Casper District

<b>Project</b>	Weld County, CO NAD 83		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

Site	Johnson Trust, Site Center : Johnson Trust 1				
Site Position:		Northing:	1,293,448.40 usft	Latitude:	40° 8' 15.526 N
From:	Lat/Long	Easting:	3,151,083.18 usft	Longitude:	104° 57' 34.628 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.35 °

Well	Johnson Trust 5, 2153' FSL 389' FWL Sec 13 T2N R68W					
Well Position	+N/-S	0.00 ft	Northing:	1,293,336.56 usft	Latitude:	40° 8' 14.420 N
	+E/-W	0.00 ft	Easting:	3,151,083.59 usft	Longitude:	104° 57' 34.632 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	4,925.00 ft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	BGGM2015	12/29/2015	8.60	66.70	52,403

<b>Design</b>	OH				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	179.84	

<b>Survey Program</b>	<b>Date</b>	2/1/2016			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
228.00	1,534.00	Survey #1 - Surface (OH)	SDI MWD	SDI MWD - Standard ver 1.0.1	
1,600.00	12,330.00	Survey #2 - Production (OH)	SDI MWD	SDI MWD - Standard ver 1.0.1	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
228.00	1.35	289.54	227.98	0.90	-2.53	-0.91	0.59	0.59	0.00	
<b>First SDI MWD Survey</b>										
320.00	0.79	272.51	319.96	1.29	-4.19	-1.30	0.69	-0.61	-18.51	
412.00	0.82	242.98	411.95	1.02	-5.41	-1.03	0.45	0.03	-32.10	
508.00	0.78	202.81	507.95	0.10	-6.27	-0.12	0.57	-0.04	-41.84	
603.00	0.98	194.88	602.93	-1.28	-6.73	1.26	0.25	0.21	-8.35	
698.00	1.38	204.72	697.91	-3.10	-7.42	3.08	0.47	0.42	10.36	

<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Johnson Trust 5
<b>Project:</b>	Weld County, CO NAD 83	<b>TVD Reference:</b>	GL 4925' & KB 24.5' @ 4949.50ft (Patterson 346)
<b>Site:</b>	Johnson Trust	<b>MD Reference:</b>	GL 4925' & KB 24.5' @ 4949.50ft (Patterson 346)
<b>Well:</b>	Johnson Trust 5	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Casper District

Survey									
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)
793.00	1.51	219.75	792.88	-5.10	-8.70	5.08	0.42	0.14	15.82
887.00	1.08	271.49	886.86	-6.03	-10.37	6.00	1.27	-0.46	55.04
982.00	0.94	304.57	981.85	-5.57	-11.91	5.53	0.62	-0.15	34.82
1,077.00	1.09	5.59	1,076.84	-4.23	-12.46	4.19	1.09	0.16	64.23
1,171.00	1.91	2.83	1,170.80	-1.77	-12.30	1.74	0.88	0.87	-2.94
1,266.00	1.41	20.13	1,265.76	0.91	-11.82	-0.94	0.74	-0.53	18.21
1,360.00	0.76	46.88	1,359.75	2.42	-10.97	-2.45	0.86	-0.69	28.46
1,456.00	0.56	65.47	1,455.74	3.05	-10.08	-3.08	0.30	-0.21	19.36
1,534.00	0.50	193.31	1,533.74	2.88	-9.81	-2.90	1.22	-0.08	163.90
Last SDI MWD Surface Survey									
1,600.00	1.09	201.31	1,599.73	2.01	-10.10	-2.04	0.91	0.89	12.12
1,663.00	1.11	78.96	1,662.73	1.57	-9.72	-1.60	3.06	0.03	-194.21
1,757.00	3.79	64.24	1,756.63	3.09	-6.03	-3.11	2.91	2.85	-15.66
1,852.00	5.95	62.44	1,851.28	6.74	1.17	-6.73	2.28	2.27	-1.89
1,947.00	7.99	62.77	1,945.58	12.04	11.40	-12.01	2.15	2.15	0.35
2,041.00	9.61	65.45	2,038.47	18.29	24.35	-18.22	1.78	1.72	2.85
2,136.00	10.60	64.62	2,131.99	25.33	39.46	-25.22	1.05	1.04	-0.87
2,230.00	10.79	65.56	2,224.36	32.67	55.28	-32.52	0.27	0.20	1.00
2,325.00	10.94	67.68	2,317.66	39.78	71.71	-39.58	0.45	0.16	2.23
2,420.00	14.01	67.37	2,410.40	47.63	90.67	-47.37	3.23	3.23	-0.33
2,516.00	15.12	62.57	2,503.32	57.87	112.51	-57.55	1.71	1.16	-5.00
2,611.00	18.15	54.56	2,594.35	72.16	135.57	-71.78	3.99	3.19	-8.43
2,705.00	19.97	57.80	2,683.19	89.20	161.09	-88.75	2.24	1.94	3.45
2,800.00	19.26	58.04	2,772.68	106.14	188.11	-105.62	0.75	-0.75	0.25
2,894.00	19.06	59.77	2,861.47	122.08	214.52	-121.48	0.64	-0.21	1.84
2,989.00	18.91	57.52	2,951.31	138.15	240.91	-137.48	0.79	-0.16	-2.37
3,084.00	19.75	60.06	3,040.95	154.43	267.81	-153.68	1.25	0.88	2.67
3,179.00	17.18	70.76	3,131.08	167.07	294.97	-166.25	4.47	-2.71	11.26
3,274.00	14.11	67.92	3,222.55	176.05	318.96	-175.16	3.33	-3.23	-2.99
3,369.00	15.47	64.29	3,314.40	185.90	341.11	-184.95	1.73	1.43	-3.82
3,464.00	15.27	62.79	3,406.00	197.12	363.65	-196.10	0.47	-0.21	-1.58
3,558.00	17.84	66.98	3,496.10	208.41	387.91	-207.32	3.01	2.73	4.46
3,653.00	16.55	63.42	3,586.86	220.15	413.41	-219.00	1.75	-1.36	-3.75
3,747.00	15.24	63.52	3,677.26	231.65	436.44	-230.43	1.39	-1.39	0.11
3,843.00	18.22	68.44	3,769.19	242.80	461.70	-241.51	3.43	3.10	5.13
3,937.00	19.95	65.54	3,858.02	254.84	489.97	-253.47	2.10	1.84	-3.09
4,032.00	20.06	61.21	3,947.30	269.40	519.00	-267.95	1.56	0.12	-4.56
4,126.00	18.27	58.69	4,036.09	284.82	545.72	-283.29	2.10	-1.90	-2.68
4,221.00	17.83	58.28	4,126.41	300.20	570.81	-298.61	0.48	-0.46	-0.43
4,316.00	18.23	54.75	4,216.75	316.43	595.32	-314.76	1.22	0.42	-3.72
4,411.00	16.18	57.85	4,307.49	332.05	618.66	-330.32	2.36	-2.16	3.26
4,506.00	16.48	71.22	4,398.69	343.44	642.64	-341.64	3.96	0.32	14.07

<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Johnson Trust 5
<b>Project:</b>	Weld County, CO NAD 83	<b>TVD Reference:</b>	GL 4925' & KB 24.5' @ 4949.50ft (Patterson 346)
<b>Site:</b>	Johnson Trust	<b>MD Reference:</b>	GL 4925' & KB 24.5' @ 4949.50ft (Patterson 346)
<b>Well:</b>	Johnson Trust 5	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Casper District

Survey										
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)	
4,601.00	18.05	64.55	4,489.42	354.10	668.69	-352.23	2.66	1.65	-7.02	
4,696.00	20.00	62.24	4,579.23	367.99	696.36	-366.05	2.20	2.05	-2.43	
4,790.00	18.50	60.92	4,667.97	382.73	723.62	-380.71	1.66	-1.60	-1.40	
4,885.00	17.15	58.96	4,758.41	397.28	748.79	-395.18	1.55	-1.42	-2.06	
4,979.00	15.87	54.88	4,848.53	411.82	771.18	-409.66	1.84	-1.36	-4.34	
5,073.00	16.59	50.59	4,938.79	427.73	792.06	-425.52	1.49	0.77	-4.56	
5,168.00	18.82	58.77	5,029.30	444.29	815.65	-442.01	3.51	2.35	8.61	
5,263.00	15.42	62.05	5,120.08	458.16	839.92	-455.81	3.72	-3.58	3.45	
5,357.00	12.91	64.19	5,211.21	468.59	860.41	-466.19	2.73	-2.67	2.28	
5,452.00	15.01	65.31	5,303.40	478.35	881.15	-475.89	2.23	2.21	1.18	
5,546.00	17.07	56.71	5,393.75	491.01	903.74	-488.49	3.34	2.19	-9.15	
5,641.00	16.05	53.08	5,484.81	506.56	925.90	-503.97	1.53	-1.07	-3.82	
5,736.00	14.04	44.83	5,576.56	522.62	944.53	-519.98	3.09	-2.12	-8.68	
5,831.00	13.30	42.88	5,668.87	538.80	960.09	-536.12	0.92	-0.78	-2.05	
5,926.00	13.88	43.74	5,761.21	555.04	975.40	-552.31	0.65	0.61	0.91	
6,020.00	12.49	49.09	5,852.73	569.84	990.88	-567.07	1.97	-1.48	5.69	
6,115.00	14.23	52.64	5,945.16	583.66	1,007.93	-580.84	2.02	1.83	3.74	
6,210.00	14.66	64.09	6,037.18	596.00	1,028.02	-593.13	3.04	0.45	12.05	
6,305.00	12.81	65.92	6,129.46	605.55	1,048.45	-602.62	2.00	-1.95	1.93	
6,400.00	10.97	71.83	6,222.42	612.67	1,066.66	-609.69	2.32	-1.94	6.22	
6,494.00	10.70	81.97	6,314.75	616.67	1,083.80	-613.65	2.05	-0.29	10.79	
6,588.00	8.15	78.78	6,407.47	619.19	1,098.98	-616.12	2.77	-2.71	-3.39	
6,683.00	6.21	72.08	6,501.73	622.08	1,110.47	-618.98	2.22	-2.04	-7.05	
6,778.00	4.57	66.44	6,596.30	625.18	1,118.83	-622.05	1.81	-1.73	-5.94	
6,873.00	1.57	60.99	6,691.16	627.32	1,123.44	-624.18	3.17	-3.16	-5.74	
6,968.00	1.23	5.18	6,786.13	628.97	1,124.67	-625.82	1.42	-0.36	-58.75	
7,063.00	6.05	176.94	6,880.98	624.98	1,125.03	-621.83	7.65	5.07	180.80	
7,159.00	17.68	171.59	6,974.77	605.44	1,127.44	-602.29	12.16	12.11	-5.57	
7,254.00	23.67	181.37	7,063.64	572.06	1,129.10	-568.91	7.26	6.31	10.29	
7,350.00	32.43	183.40	7,148.28	527.01	1,127.11	-523.86	9.18	9.13	2.11	
7,445.00	39.74	178.98	7,225.02	471.14	1,126.13	-467.99	8.16	7.69	-4.65	
7,540.00	44.25	178.58	7,295.61	407.61	1,127.50	-404.46	4.76	4.75	-0.42	
7,635.00	54.28	179.53	7,357.52	335.73	1,128.64	-332.57	10.58	10.56	1.00	
7,731.00	60.55	180.42	7,409.20	254.88	1,128.65	-251.73	6.58	6.53	0.93	
7,825.00	65.70	181.48	7,451.68	171.07	1,127.24	-167.92	5.57	5.48	1.13	
7,920.00	76.35	178.04	7,482.53	81.38	1,127.71	-78.23	11.72	11.21	-3.62	
8,015.00	81.72	178.16	7,500.59	-11.80	1,130.80	14.96	5.65	5.65	0.13	
8,109.00	86.65	179.05	7,510.11	-105.26	1,133.07	108.42	5.33	5.24	0.95	
8,204.00	86.54	179.00	7,515.76	-200.08	1,134.68	203.24	0.13	-0.12	-0.05	
8,297.00	85.60	178.15	7,522.13	-292.83	1,136.99	296.00	1.36	-1.01	-0.91	
8,417.00	90.10	177.04	7,526.63	-412.60	1,142.02	415.79	3.86	3.75	-0.93	
8,512.00	90.10	175.35	7,526.46	-507.39	1,148.33	510.60	1.78	0.00	-1.78	

<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Johnson Trust 5
<b>Project:</b>	Weld County, CO NAD 83	<b>TVD Reference:</b>	GL 4925' & KB 24.5' @ 4949.50ft (Patterson 346)
<b>Site:</b>	Johnson Trust	<b>MD Reference:</b>	GL 4925' & KB 24.5' @ 4949.50ft (Patterson 346)
<b>Well:</b>	Johnson Trust 5	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Casper District

Survey										
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)	
8,607.00	89.90	175.90	7,526.46	-602.11	1,155.57	605.34	0.62	-0.21	0.58	
8,702.00	90.07	178.46	7,526.49	-696.99	1,160.25	700.23	2.70	0.18	2.69	
8,797.00	89.26	182.14	7,527.04	-791.97	1,159.75	795.21	3.97	-0.85	3.87	
8,891.00	89.97	183.00	7,527.68	-885.87	1,155.53	889.10	1.19	0.76	0.91	
8,986.00	88.19	181.24	7,529.20	-980.79	1,152.02	984.00	2.63	-1.87	-1.85	
9,082.00	88.22	181.25	7,532.21	-1,076.72	1,149.94	1,079.93	0.03	0.03	0.01	
9,176.00	87.89	181.33	7,535.40	-1,170.64	1,147.82	1,173.84	0.36	-0.35	0.09	
9,272.00	89.23	179.91	7,537.81	-1,266.60	1,146.78	1,269.80	2.03	1.40	-1.48	
9,368.00	89.66	180.88	7,538.74	-1,362.59	1,146.12	1,365.79	1.11	0.45	1.01	
9,463.00	89.90	181.47	7,539.11	-1,457.57	1,144.17	1,460.76	0.67	0.25	0.62	
9,559.00	89.97	181.26	7,539.22	-1,553.54	1,141.89	1,556.73	0.23	0.07	-0.22	
9,654.00	92.48	181.85	7,537.18	-1,648.48	1,139.31	1,651.65	2.71	2.64	0.62	
9,749.00	91.61	181.18	7,533.79	-1,743.38	1,136.80	1,746.55	1.16	-0.92	-0.71	
9,844.00	90.44	179.16	7,532.10	-1,838.36	1,136.52	1,841.53	2.46	-1.23	-2.13	
9,939.00	88.79	177.77	7,532.73	-1,933.32	1,139.06	1,936.49	2.27	-1.74	-1.46	
10,033.00	87.42	178.13	7,535.84	-2,027.21	1,142.42	2,030.39	1.51	-1.46	0.38	
10,128.00	88.12	178.51	7,539.54	-2,122.09	1,145.21	2,125.28	0.84	0.74	0.40	
10,223.00	88.66	178.24	7,542.21	-2,217.02	1,147.90	2,220.21	0.64	0.57	-0.28	
10,317.00	89.73	179.19	7,543.53	-2,310.98	1,150.01	2,314.18	1.52	1.14	1.01	
10,412.00	89.70	179.06	7,544.00	-2,405.97	1,151.46	2,409.17	0.14	-0.03	-0.14	
10,507.00	89.93	179.30	7,544.31	-2,500.96	1,152.82	2,504.17	0.35	0.24	0.25	
10,602.00	90.44	179.79	7,544.00	-2,595.95	1,153.57	2,599.16	0.74	0.54	0.52	
10,696.00	90.97	179.16	7,542.84	-2,689.94	1,154.43	2,693.15	0.88	0.56	-0.67	
10,792.00	89.30	180.05	7,542.62	-2,785.93	1,155.09	2,789.15	1.97	-1.74	0.93	
10,887.00	89.23	179.90	7,543.84	-2,880.93	1,155.13	2,884.14	0.17	-0.07	-0.16	
10,981.00	89.70	180.06	7,544.71	-2,974.92	1,155.17	2,978.14	0.53	0.50	0.17	
11,076.00	90.30	179.90	7,544.71	-3,069.92	1,155.20	3,073.14	0.65	0.63	-0.17	
11,171.00	89.23	180.77	7,545.10	-3,164.92	1,154.65	3,168.13	1.45	-1.13	0.92	
11,266.00	89.43	179.82	7,546.21	-3,259.91	1,154.16	3,263.12	1.02	0.21	-1.00	
11,361.00	89.83	179.94	7,546.83	-3,354.91	1,154.36	3,358.12	0.44	0.42	0.13	
11,457.00	90.64	180.53	7,546.43	-3,450.90	1,153.96	3,454.11	1.04	0.84	0.61	
11,552.00	90.50	181.05	7,545.49	-3,545.89	1,152.65	3,549.09	0.57	-0.15	0.55	
11,647.00	88.99	180.32	7,545.91	-3,640.88	1,151.52	3,644.08	1.77	-1.59	-0.77	
11,742.00	88.96	180.33	7,547.61	-3,735.86	1,150.98	3,739.06	0.03	-0.03	0.01	
11,836.00	89.36	179.88	7,548.99	-3,829.85	1,150.81	3,833.05	0.64	0.43	-0.48	
11,932.00	90.17	180.00	7,549.38	-3,925.85	1,150.91	3,929.05	0.85	0.84	0.13	
12,027.00	89.36	179.47	7,549.77	-4,020.85	1,151.35	4,024.05	1.02	-0.85	-0.56	
12,122.00	89.56	179.08	7,550.67	-4,115.83	1,152.55	4,119.04	0.46	0.21	-0.41	
12,216.00	90.47	178.25	7,550.64	-4,209.81	1,154.74	4,213.01	1.31	0.97	-0.88	
12,270.00	90.94	178.30	7,549.98	-4,263.78	1,156.36	4,266.99	0.88	0.87	0.09	
Last SDI MWD Survey										
12,330.00	90.94	178.30	7,549.00	-4,323.74	1,158.14	4,326.96	0.00	0.00	0.00	

<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Johnson Trust 5
<b>Project:</b>	Weld County, CO NAD 83	<b>TVD Reference:</b>	GL 4925' & KB 24.5' @ 4949.50ft (Patterson 346)
<b>Site:</b>	Johnson Trust	<b>MD Reference:</b>	GL 4925' & KB 24.5' @ 4949.50ft (Patterson 346)
<b>Well:</b>	Johnson Trust 5	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Casper District

Survey										
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)	
Projection to TD										

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
228.00	227.98	0.90	-2.53	First SDI MWD Survey	
1,534.00	1,533.74	2.88	-9.81	Last SDI MWD Surface Survey	
12,270.00	7,549.98	-4,263.78	1,156.36	Last SDI MWD Survey	
12,330.00	7,549.00	-4,323.74	1,158.14	Projection to TD	

Checked By: _____	Approved By: _____	Date: _____
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