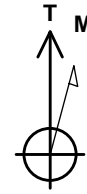




Project: Weld County, CO NAD 83
Site: Johnson Trust
Well: Johnson Trust 9
Wellbore: OH
Design: Plan 2



Azimuths to True North
Magnetic North: 8.60°

Magnetic Field
Strength: 52403.0snT
Dip Angle: 66.70°
Date: 12/29/2015
Model: BGGM2015

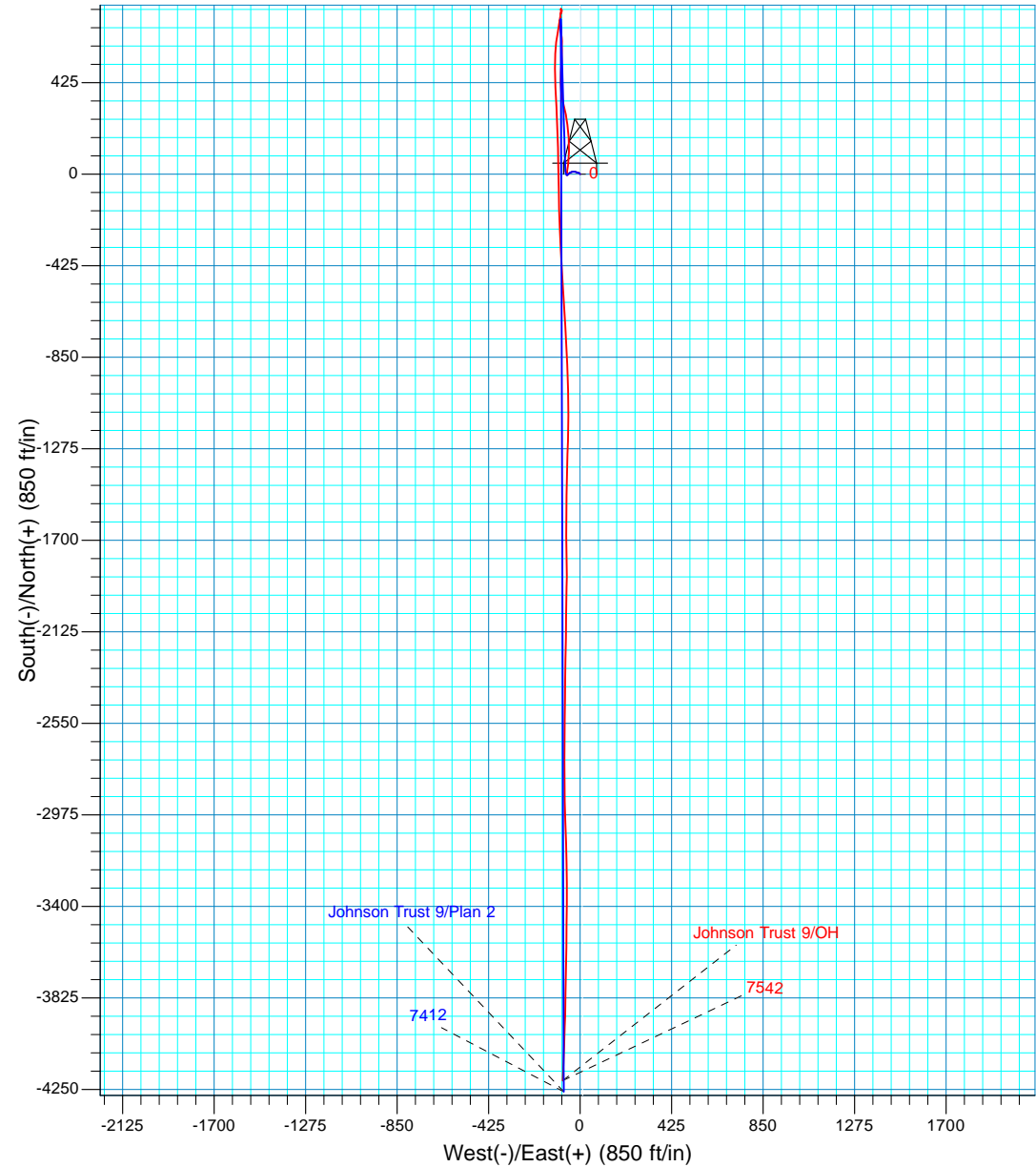
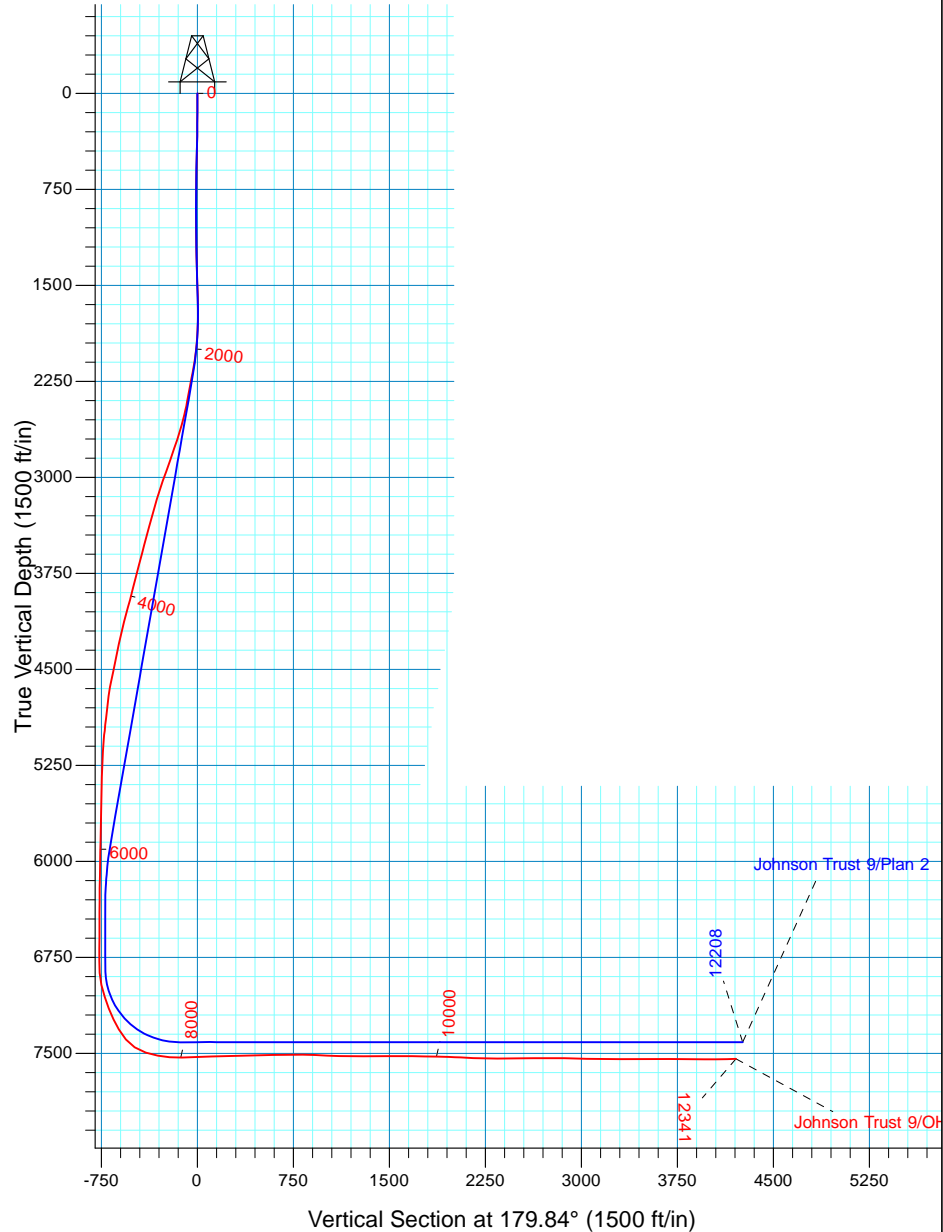
WELL DETAILS: Johnson Trust 9

GL 4922' & KB 24.5' @ 4946.50ft (Patterson 346) 4922.00
Northing Easting Latitude Longitude
1293224.73 3151084.27 40° 8' 13.315 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 9

OH

Design: OH

Standard Survey Report

16 February, 2016



Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Johnson Trust 9
Project:	Weld County, CO NAD 83	TVD Reference:	GL 4922' & KB 24.5' @ 4946.50ft (Patterson 346)
Site:	Johnson Trust	MD Reference:	GL 4922' & KB 24.5' @ 4946.50ft (Patterson 346)
Well:	Johnson Trust 9	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

Project	Weld County, CO NAD 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	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 9, 2041' FSL 388' FWL Sec 13 T2N R68W					
Well Position	+N/-S	0.00 ft	Northing:	1,293,224.73 usft	Latitude:	40° 8' 13.315 N
	+E/-W	0.00 ft	Easting:	3,151,084.27 usft	Longitude:	104° 57' 34.632 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	4,922.00 ft

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

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00		268.66

Survey Program	Date	2/16/2016			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
142.00	1,500.00	Survey #1 - Surface (OH)	NS-GYRO-MS	North sensing gyrocompassing m/s	
1,663.00	12,341.00	Survey #2 - Production (OH)	SDI MWD	SDI MWD - Standard ver 1.0.1	

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)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
142.00	0.40	332.80	142.00	0.44	-0.23	0.22	0.28	0.28	0.00	
237.00	0.40	291.60	237.00	0.86	-0.69	0.67	0.30	0.00	-43.37	
333.00	1.00	331.40	332.99	1.72	-1.40	1.36	0.77	0.63	41.46	
428.00	1.90	317.80	427.96	3.61	-2.85	2.77	1.01	0.95	-14.32	
523.00	2.50	281.70	522.89	5.20	-5.94	5.82	1.56	0.63	-38.00	
618.00	3.20	291.30	617.77	6.58	-10.44	10.28	0.89	0.74	10.11	
714.00	3.70	286.80	713.60	8.45	-15.90	15.70	0.59	0.52	-4.69	

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Johnson Trust 9
Project:	Weld County, CO NAD 83	TVD Reference:	GL 4922' & KB 24.5' @ 4946.50ft (Patterson 346)
Site:	Johnson Trust	MD Reference:	GL 4922' & KB 24.5' @ 4946.50ft (Patterson 346)
Well:	Johnson Trust 9	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	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)
809.00	3.40	289.90	808.42	10.30	-21.49	21.24	0.37	-0.32	3.26
904.00	3.70	272.20	903.24	11.37	-27.20	26.92	1.19	0.32	-18.63
1,000.00	3.50	264.70	999.05	11.22	-33.21	32.94	0.53	-0.21	-7.81
1,095.00	3.90	255.20	1,093.85	10.13	-39.22	38.97	0.77	0.42	-10.00
1,190.00	2.80	237.00	1,188.69	8.04	-44.29	44.09	1.60	-1.16	-19.16
1,285.00	2.60	240.00	1,283.59	5.70	-48.10	47.96	0.26	-0.21	3.16
1,381.00	2.00	222.10	1,379.51	3.36	-51.11	51.02	0.97	-0.63	-18.65
1,476.00	2.60	228.00	1,474.43	0.69	-53.82	53.79	0.68	0.63	6.21
1,500.00	2.30	230.80	1,498.41	0.02	-54.60	54.59	1.35	-1.25	11.67
TIP									
1,663.00	1.48	227.13	1,661.32	-3.48	-58.68	58.75	0.51	-0.50	-2.25
First SDI MWD Survey									
1,757.00	1.02	245.93	1,755.30	-4.64	-60.33	60.43	0.65	-0.49	20.00
1,852.00	2.93	355.51	1,850.26	-2.57	-61.30	61.34	3.59	2.01	115.35
1,946.00	4.96	2.73	1,944.03	3.89	-61.29	61.18	2.22	2.16	7.68
2,041.00	7.67	4.17	2,038.44	14.32	-60.63	60.28	2.86	2.85	1.52
2,135.00	10.13	11.87	2,131.31	28.66	-58.48	57.79	2.90	2.62	8.19
2,230.00	11.12	8.27	2,224.68	45.91	-55.44	54.35	1.25	1.04	-3.79
2,325.00	10.26	3.58	2,318.03	63.42	-53.59	52.09	1.29	-0.91	-4.94
2,420.00	11.08	356.85	2,411.39	80.98	-53.57	51.65	1.57	0.86	-7.08
2,515.00	12.87	4.02	2,504.33	100.65	-53.33	50.95	2.45	1.88	7.55
2,610.00	16.11	1.62	2,596.29	124.38	-52.21	49.28	3.47	3.41	-2.53
2,705.00	17.87	355.50	2,687.15	152.09	-52.98	49.40	2.64	1.85	-6.44
2,799.00	19.16	356.58	2,776.28	181.87	-55.04	50.75	1.42	1.37	1.15
2,894.00	19.23	354.47	2,866.00	213.01	-57.47	52.46	0.73	0.07	-2.22
2,988.00	19.62	351.61	2,954.65	244.03	-61.27	55.53	1.09	0.41	-3.04
3,083.00	19.57	348.56	3,044.16	275.40	-66.75	60.27	1.08	-0.05	-3.21
3,178.00	18.22	348.24	3,134.03	305.54	-72.93	65.75	1.43	-1.42	-0.34
3,273.00	16.27	346.07	3,224.76	333.00	-79.17	71.33	2.16	-2.05	-2.28
3,368.00	15.26	348.79	3,316.19	358.18	-84.80	76.37	1.32	-1.06	2.86
3,463.00	14.84	356.86	3,407.94	382.59	-87.90	78.90	2.25	-0.44	8.49
3,558.00	15.71	353.99	3,499.58	407.53	-89.91	80.32	1.21	0.92	-3.02
3,652.00	14.38	2.21	3,590.37	431.85	-90.79	80.64	2.67	-1.41	8.74
3,747.00	14.71	2.89	3,682.32	455.69	-89.73	79.01	0.39	0.35	0.72
3,842.00	14.88	1.64	3,774.17	479.93	-88.77	77.49	0.38	0.18	-1.32
3,937.00	14.07	5.71	3,866.16	503.61	-87.27	75.44	1.37	-0.85	4.28
4,031.00	14.33	0.94	3,957.29	526.61	-85.95	73.57	1.27	0.28	-5.07
4,126.00	16.11	0.34	4,048.96	551.55	-85.68	72.71	1.88	1.87	-0.63
4,221.00	13.97	0.80	4,140.70	576.20	-85.44	71.90	2.26	-2.25	0.48
4,316.00	11.96	1.79	4,233.27	597.51	-84.97	70.93	2.13	-2.12	1.04
4,410.00	12.20	359.76	4,325.19	617.17	-84.71	70.20	0.52	0.26	-2.16
4,506.00	12.04	351.54	4,419.06	637.22	-86.22	71.25	1.80	-0.17	-8.56

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Johnson Trust 9
Project:	Weld County, CO NAD 83	TVD Reference:	GL 4922' & KB 24.5' @ 4946.50ft (Patterson 346)
Site:	Johnson Trust	MD Reference:	GL 4922' & KB 24.5' @ 4946.50ft (Patterson 346)
Well:	Johnson Trust 9	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	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)	
4,600.00	11.65	354.11	4,511.05	656.36	-88.64	73.22	0.70	-0.41	2.73	
4,695.00	11.82	357.55	4,604.07	675.62	-90.04	74.16	0.76	0.18	3.62	
4,790.00	8.00	353.12	4,697.64	691.91	-91.25	74.99	4.10	-4.02	-4.66	
4,884.00	5.62	347.64	4,790.97	702.91	-93.02	76.50	2.62	-2.53	-5.83	
4,979.00	7.55	13.22	4,885.36	713.53	-92.58	75.82	3.65	2.03	26.93	
5,073.00	6.19	5.39	4,978.68	724.59	-90.70	73.67	1.75	-1.45	-8.33	
5,168.00	4.70	345.72	5,073.26	733.46	-91.18	73.94	2.49	-1.57	-20.71	
5,262.00	3.03	6.25	5,167.05	739.66	-91.86	74.48	2.28	-1.78	21.84	
5,357.00	2.40	22.65	5,261.94	743.99	-90.82	73.34	1.05	-0.66	17.26	
5,451.00	1.76	28.18	5,355.88	747.08	-89.38	71.82	0.71	-0.68	5.88	
5,546.00	1.47	23.17	5,450.84	749.49	-88.21	70.60	0.34	-0.31	-5.27	
5,641.00	1.09	26.69	5,545.82	751.41	-87.32	69.67	0.41	-0.40	3.71	
5,736.00	0.88	19.29	5,640.80	752.91	-86.68	68.99	0.26	-0.22	-7.79	
5,830.00	0.99	17.17	5,734.79	754.37	-86.20	68.48	0.12	0.12	-2.26	
5,925.00	1.38	19.02	5,829.77	756.23	-85.58	67.82	0.41	0.41	1.95	
6,020.00	1.22	8.76	5,924.74	758.31	-85.06	67.24	0.30	-0.17	-10.80	
6,115.00	1.07	341.21	6,019.73	760.15	-85.19	67.33	0.59	-0.16	-29.00	
6,209.00	0.77	329.01	6,113.71	761.53	-85.79	67.90	0.38	-0.32	-12.98	
6,304.00	0.69	340.37	6,208.71	762.61	-86.32	68.40	0.17	-0.08	11.96	
6,399.00	0.74	319.28	6,303.70	763.62	-86.91	68.97	0.28	0.05	-22.20	
6,493.00	0.39	298.79	6,397.69	764.23	-87.58	69.63	0.42	-0.37	-21.80	
6,588.00	0.30	304.03	6,492.69	764.52	-88.07	70.11	0.10	-0.09	5.52	
6,683.00	0.44	330.10	6,587.69	764.98	-88.46	70.49	0.23	0.15	27.44	
6,777.00	0.69	317.84	6,681.69	765.71	-89.02	71.03	0.29	0.27	-13.04	
6,872.00	0.58	343.93	6,776.68	766.60	-89.54	71.53	0.32	-0.12	27.46	
6,967.00	4.72	170.46	6,871.58	763.20	-89.02	71.09	5.58	4.36	-182.60	
7,062.00	12.80	184.63	6,965.41	748.83	-89.23	71.63	8.74	8.51	14.92	
7,158.00	18.14	194.02	7,057.91	723.71	-93.71	76.70	6.13	5.56	9.78	
7,254.00	20.13	185.54	7,148.62	692.76	-98.93	82.64	3.56	2.07	-8.83	
7,349.00	26.77	191.41	7,235.74	655.47	-104.74	89.34	7.40	6.99	6.18	
7,437.00	31.76	186.19	7,312.49	612.99	-111.17	96.75	6.36	5.67	-5.93	
7,532.00	37.39	182.93	7,390.69	559.28	-115.34	102.19	6.24	5.93	-3.43	
7,626.00	58.09	181.10	7,453.56	490.13	-117.59	106.06	22.07	22.02	-1.95	
7,722.00	72.85	176.18	7,493.33	403.10	-115.30	105.81	16.06	15.38	-5.13	
7,818.00	78.01	177.51	7,517.47	310.36	-110.20	102.89	5.54	5.38	1.39	
7,913.00	87.05	177.51	7,529.81	216.35	-106.12	101.01	9.52	9.52	0.00	
8,007.00	90.17	179.13	7,532.09	122.44	-103.36	100.46	3.74	3.32	1.72	
8,102.00	91.71	178.86	7,530.53	27.47	-101.70	101.02	1.65	1.62	-0.28	
8,196.00	92.88	178.88	7,526.77	-66.44	-99.84	101.37	1.24	1.24	0.02	
8,291.00	92.38	178.40	7,522.41	-161.31	-97.59	101.35	0.73	-0.53	-0.51	
8,385.00	91.64	177.48	7,519.11	-255.19	-94.21	100.17	1.26	-0.79	-0.98	
8,480.00	91.81	177.78	7,516.25	-350.06	-90.29	98.48	0.36	0.18	0.32	

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Johnson Trust 9
Project:	Weld County, CO NAD 83	TVD Reference:	GL 4922' & KB 24.5' @ 4946.50ft (Patterson 346)
Site:	Johnson Trust	MD Reference:	GL 4922' & KB 24.5' @ 4946.50ft (Patterson 346)
Well:	Johnson Trust 9	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	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)
8,575.00	89.93	176.65	7,514.81	-444.94	-85.67	96.09	2.31	-1.98	-1.19
8,669.00	90.81	175.81	7,514.20	-538.73	-79.49	92.11	1.29	0.94	-0.89
8,764.00	91.61	176.19	7,512.20	-633.48	-72.87	87.71	0.93	0.84	0.40
8,860.00	91.41	177.54	7,509.67	-729.30	-67.62	84.71	1.42	-0.21	1.41
8,954.00	88.29	177.34	7,509.91	-823.19	-63.42	82.72	3.33	-3.32	-0.21
9,049.00	87.95	177.28	7,513.03	-918.03	-58.96	80.49	0.36	-0.36	-0.06
9,144.00	87.55	178.28	7,516.76	-1,012.89	-55.29	79.03	1.13	-0.42	1.05
9,239.00	87.99	180.65	7,520.46	-1,107.81	-54.40	80.38	2.54	0.46	2.49
9,335.00	89.69	181.82	7,522.40	-1,203.76	-56.47	84.70	2.15	1.77	1.22
9,431.00	90.81	181.28	7,521.98	-1,299.72	-59.07	89.54	1.30	1.17	-0.56
9,526.00	90.37	181.24	7,521.00	-1,394.69	-61.15	93.86	0.47	-0.46	-0.04
9,622.00	89.30	180.91	7,521.28	-1,490.67	-62.96	97.91	1.17	-1.11	-0.34
9,717.00	89.73	180.56	7,522.08	-1,585.66	-64.17	101.36	0.58	0.45	-0.37
9,811.00	90.03	179.73	7,522.28	-1,679.66	-64.41	103.80	0.94	0.32	-0.88
9,906.00	89.33	178.75	7,522.81	-1,774.65	-63.15	104.77	1.27	-0.74	-1.03
10,001.00	88.59	180.19	7,524.54	-1,869.63	-62.27	106.12	1.70	-0.78	1.52
10,096.00	88.02	181.74	7,527.35	-1,964.57	-63.87	109.95	1.74	-0.60	1.63
10,190.00	86.92	180.60	7,531.49	-2,058.45	-65.79	114.07	1.68	-1.17	-1.21
10,286.00	87.58	180.59	7,536.10	-2,154.34	-66.79	117.31	0.69	0.69	-0.01
10,380.00	88.69	181.15	7,539.16	-2,248.27	-68.21	120.94	1.32	1.18	0.60
10,475.00	89.73	180.77	7,540.47	-2,343.25	-69.80	124.76	1.17	1.09	-0.40
10,569.00	90.50	180.81	7,540.28	-2,437.24	-71.10	128.26	0.82	0.82	0.04
10,664.00	91.48	180.21	7,538.64	-2,532.22	-71.95	131.34	1.21	1.03	-0.63
10,759.00	90.64	180.61	7,536.88	-2,627.20	-72.63	134.24	0.98	-0.88	0.42
10,855.00	89.90	180.02	7,536.43	-2,723.20	-73.15	137.02	0.99	-0.77	-0.61
10,950.00	89.56	179.55	7,536.88	-2,818.20	-72.80	138.90	0.61	-0.36	-0.49
11,044.00	87.99	178.82	7,538.89	-2,912.16	-71.46	139.76	1.84	-1.67	-0.78
11,139.00	88.63	177.71	7,541.69	-3,007.07	-68.59	139.12	1.35	0.67	-1.17
11,234.00	89.13	178.30	7,543.55	-3,102.00	-65.28	138.04	0.81	0.53	0.62
11,329.00	89.43	179.21	7,544.74	-3,196.97	-63.21	138.20	1.01	0.32	0.96
11,424.00	90.50	179.21	7,544.80	-3,291.96	-61.91	139.12	1.13	1.13	0.00
11,520.00	90.10	180.71	7,544.29	-3,387.95	-61.84	141.31	1.62	-0.42	1.56
11,615.00	90.44	180.60	7,543.85	-3,482.94	-62.92	144.62	0.38	0.36	-0.12
11,710.00	89.80	180.91	7,543.65	-3,577.94	-64.18	148.10	0.75	-0.67	0.33
11,804.00	89.10	180.78	7,544.55	-3,671.92	-65.56	151.69	0.76	-0.74	-0.14
11,899.00	90.40	180.95	7,544.97	-3,766.91	-67.00	155.35	1.38	1.37	0.18
11,994.00	89.87	180.96	7,544.74	-3,861.89	-68.58	159.17	0.56	-0.56	0.01
12,089.00	89.56	182.24	7,545.21	-3,956.85	-71.23	164.05	1.39	-0.33	1.35
12,184.00	90.33	182.18	7,545.31	-4,051.78	-74.90	169.93	0.81	0.81	-0.06
12,273.00	91.41	181.99	7,543.95	-4,140.71	-78.13	175.26	1.23	1.21	-0.21
Last SDI MWD Survey									
12,341.00	91.41	181.99	7,542.28	-4,208.65	-80.49	179.21	0.00	0.00	0.00

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Johnson Trust 9
Project:	Weld County, CO NAD 83	TVD Reference:	GL 4922' & KB 24.5' @ 4946.50ft (Patterson 346)
Site:	Johnson Trust	MD Reference:	GL 4922' & KB 24.5' @ 4946.50ft (Patterson 346)
Well:	Johnson Trust 9	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	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		Comment
		+N/-S (ft)	+E/-W (ft)	
1,500.00	1,498.41	0.02	-54.60	TIP
1,663.00	1,661.32	-3.48	-58.68	First SDI MWD Survey
12,273.00	7,543.95	-4,140.71	-78.13	Last SDI MWD Survey
12,341.00	7,542.28	-4,208.65	-80.49	Projection to TD

Checked By: _____	Approved By: _____	Date: _____
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