

# Verdad Oil & Gas Corporation

Well Name: **Drake 01N-65W-22-8N**

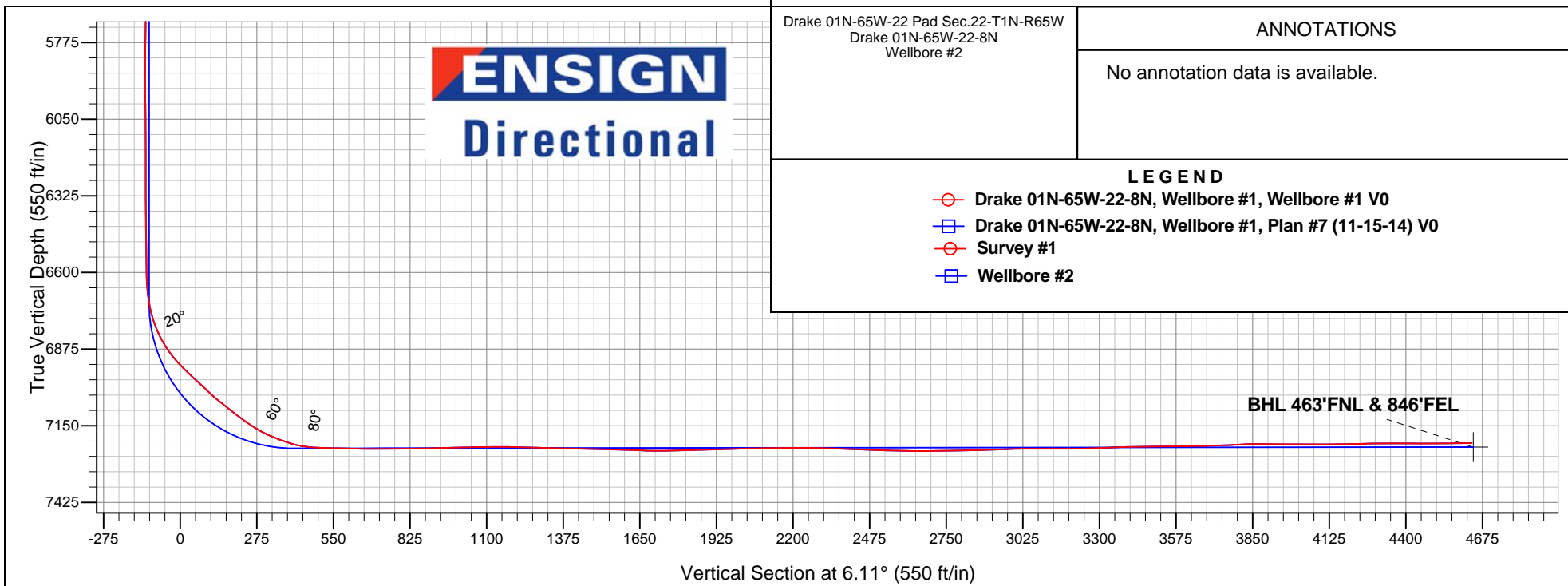
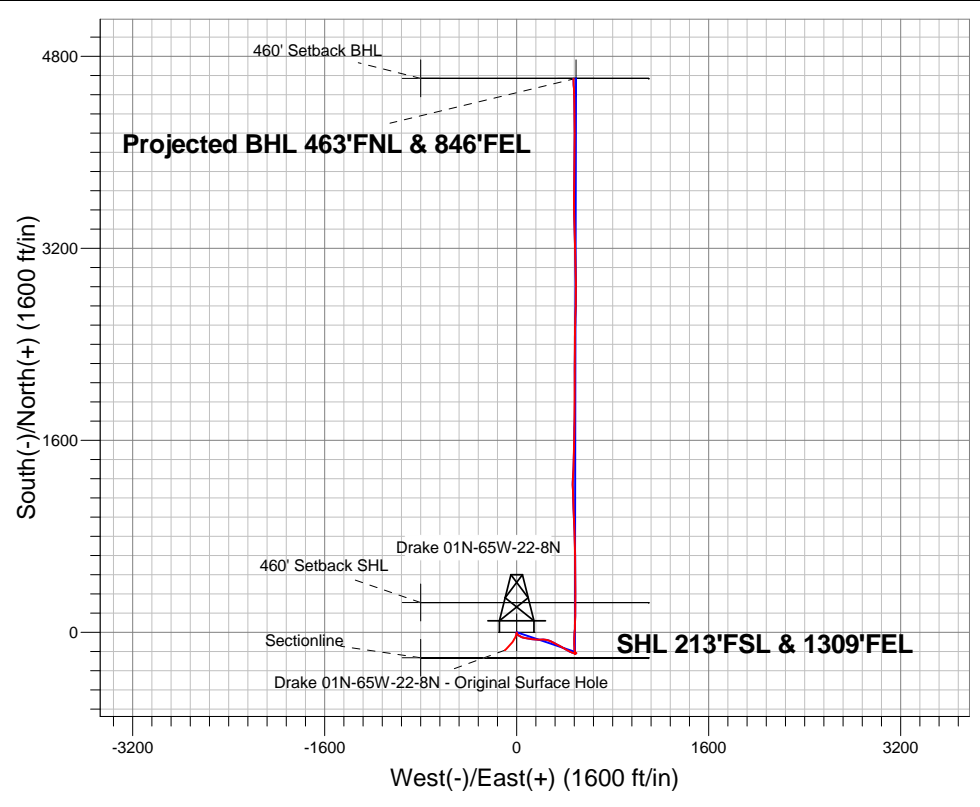
Surface Location: Drake 01N-65W-22 Pad Sec.22-T1N-R65W  
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone  
 Ground Elevation: 5090.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1255013.74	3239302.13	40.030235	-104.645426	

RKB - 16.5' WELL @ 5106.5ft (RKB - 16.5')

## FINAL SURVEY

Projected Bottom Hole Location  
 11770'MD 7212'TVD 4613'N & 473'E of SHL  
 90.8 degree Incl @ 357.8 degree AZM





# **Verdad Oil & Gas Corporation**

**Sec.22-T1N-R65W**

**Drake 01N-65W-22 Pad Sec.22-T1N-R65W**

**Drake 01N-65W-22-8N**

**Wellbore #2**

**Survey: Survey #1**

## **Standard Survey Report**

**25 November, 2014**

<b>Company:</b>	Verdad Oil & Gas Corporation	<b>Local Co-ordinate Reference:</b>	Well Drake 01N-65W-22-8N
<b>Project:</b>	Sec.22-T1N-R65W	<b>TVD Reference:</b>	WELL @ 5106.5ft (RKB - 16.5')
<b>Site:</b>	Drake 01N-65W-22 Pad Sec.22-T1N-R65W	<b>MD Reference:</b>	WELL @ 5106.5ft (RKB - 16.5')
<b>Well:</b>	Drake 01N-65W-22-8N	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #2	<b>Database:</b>	Landmark

<b>Project</b>	Sec.22-T1N-R65W, Weld County, Colorado		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

<b>Site</b>	Drake 01N-65W-22 Pad Sec.22-T1N-R65W				
<b>Site Position:</b>		<b>Northing:</b>	1,255,012.76ft	<b>Latitude:</b>	40.030235
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,239,197.12ft	<b>Longitude:</b>	-104.645801
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	"	<b>Grid Convergence:</b>	0.55 °

<b>Well</b>	Drake 01N-65W-22-8N					
<b>Well Position</b>	<b>+N-S</b>	0.0 ft	<b>Northing:</b>	1,255,013.74 ft	<b>Latitude:</b>	40.030235
	<b>+E-W</b>	0.0 ft	<b>Easting:</b>	3,239,302.13 ft	<b>Longitude:</b>	-104.645426
<b>Position Uncertainty</b>		0.0 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b>	5,090.0 ft

<b>Wellbore</b>	Wellbore #2				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	11/25/2014	8.31	66.65	52,584

<b>Design</b>	Wellbore #2				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	268.7
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N-S (ft)</b>	<b>+E-W (ft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	6.11	

<b>Survey Program</b>	<b>Date</b>	11/25/2014			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
85.2	268.7	Survey #1 surface gyro (Wellbore #1)	NS-GYRO-MS	North sensing gyrocompassing m/s	
268.7	11,770.0	Survey #1 (Wellbore #2)	MWD	MWD - Standard	

<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>	
268.7	1.07	167.15	268.7	-2.6	0.8	-2.5	0.00	0.00	0.00	0.00
348.0	2.00	191.80	348.0	-4.6	0.7	-4.5	1.41	1.17	31.08	
409.0	1.70	203.80	408.9	-6.5	0.1	-6.5	0.80	-0.49	19.67	
440.0	1.40	201.30	439.9	-7.3	-0.2	-7.3	0.99	-0.97	-8.06	
470.0	1.10	215.00	469.9	-7.9	-0.5	-7.9	1.40	-1.00	45.67	
501.0	1.00	212.90	500.9	-8.3	-0.8	-8.4	0.35	-0.32	-6.77	
532.0	0.90	203.60	531.9	-8.8	-1.1	-8.9	0.59	-0.32	-30.00	
623.0	0.40	183.00	622.9	-9.8	-1.4	-9.9	0.60	-0.55	-22.64	
715.0	0.40	190.10	714.9	-10.4	-1.4	-10.5	0.05	0.00	7.72	
807.0	0.40	175.10	806.9	-11.0	-1.5	-11.1	0.11	0.00	-16.30	
899.0	0.70	187.60	898.9	-11.9	-1.5	-12.0	0.35	0.33	13.59	
991.0	1.10	170.20	990.9	-13.3	-1.4	-13.4	0.52	0.43	-18.91	

<b>Company:</b>	Verdad Oil & Gas Corporation	<b>Local Co-ordinate Reference:</b>	Well Drake 01N-65W-22-8N
<b>Project:</b>	Sec.22-T1N-R65W	<b>TVD Reference:</b>	WELL @ 5106.5ft (RKB - 16.5')
<b>Site:</b>	Drake 01N-65W-22 Pad Sec.22-T1N-R65W	<b>MD Reference:</b>	WELL @ 5106.5ft (RKB - 16.5')
<b>Well:</b>	Drake 01N-65W-22-8N	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #2	<b>Database:</b>	Landmark

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)	
1,083.0	0.80	174.40	1,082.9	-14.9	-1.2	-14.9	0.33	-0.33	4.57	
1,175.0	0.40	154.60	1,174.8	-15.8	-1.0	-15.8	0.48	-0.43	-21.52	
1,266.0	0.50	154.00	1,265.8	-16.4	-0.7	-16.4	0.11	0.11	-0.66	
1,356.0	0.40	132.20	1,355.8	-17.0	-0.3	-16.9	0.22	-0.11	-24.22	
1,448.0	1.50	114.50	1,447.8	-17.7	1.0	-17.5	1.22	1.20	-19.24	
1,542.0	0.90	122.60	1,541.8	-18.6	2.8	-18.2	0.66	-0.64	8.62	
1,636.0	2.70	119.20	1,635.8	-20.1	5.3	-19.4	1.92	1.91	-3.62	
1,730.0	4.90	129.20	1,729.5	-23.7	10.4	-22.5	2.44	2.34	10.64	
1,824.0	6.40	120.80	1,823.1	-28.9	18.0	-26.8	1.82	1.60	-8.94	
1,919.0	7.70	118.70	1,917.4	-34.7	28.1	-31.5	1.39	1.37	-2.21	
2,013.0	9.70	112.50	2,010.3	-40.7	40.9	-36.2	2.35	2.13	-6.60	
2,108.0	9.30	104.80	2,104.0	-45.8	55.8	-39.6	1.40	-0.42	-8.11	
2,203.0	10.20	99.90	2,197.6	-49.2	71.5	-41.3	1.29	0.95	-5.16	
2,297.0	10.70	99.40	2,290.1	-52.0	88.3	-42.3	0.54	0.53	-0.53	
2,392.0	11.90	98.30	2,383.2	-54.9	106.7	-43.2	1.28	1.26	-1.16	
2,487.0	11.40	98.80	2,476.3	-57.7	125.6	-44.0	0.54	-0.53	0.53	
2,582.0	10.60	96.60	2,569.5	-60.2	143.6	-44.6	0.95	-0.84	-2.32	
2,676.0	10.10	92.00	2,662.0	-61.5	160.4	-44.0	1.03	-0.53	-4.89	
2,770.0	8.50	95.00	2,754.7	-62.4	175.6	-43.3	1.78	-1.70	3.19	
2,864.0	8.00	92.30	2,847.8	-63.2	189.0	-42.8	0.67	-0.53	-2.87	
2,958.0	7.50	86.50	2,940.9	-63.1	201.7	-41.3	0.99	-0.53	-6.17	
3,053.0	8.40	83.70	3,035.0	-62.0	214.8	-38.8	1.03	0.95	-2.95	
3,148.0	10.20	94.60	3,128.8	-61.9	230.1	-37.1	2.64	1.89	11.47	
3,242.0	10.90	103.10	3,221.2	-64.6	247.0	-37.9	1.81	0.74	9.04	
3,336.0	11.20	108.50	3,313.4	-69.5	264.3	-41.0	1.15	0.32	5.74	
3,430.0	9.00	110.60	3,406.0	-75.0	279.9	-44.8	2.37	-2.34	2.23	
3,524.0	8.70	118.30	3,498.9	-80.9	293.0	-49.3	1.30	-0.32	8.19	
3,618.0	8.90	114.70	3,591.7	-87.3	305.9	-54.3	0.62	0.21	-3.83	
3,713.0	9.60	120.60	3,685.5	-94.4	319.4	-59.9	1.24	0.74	6.21	
3,807.0	12.00	119.10	3,777.8	-103.2	334.7	-67.0	2.57	2.55	-1.60	
3,902.0	9.10	114.80	3,871.2	-111.1	350.1	-73.2	3.16	-3.05	-4.53	
3,997.0	10.20	121.00	3,964.9	-118.6	364.2	-79.2	1.59	1.16	6.53	
4,091.0	9.40	115.90	4,057.5	-126.3	378.2	-85.3	1.26	-0.85	-5.43	
4,185.0	10.40	121.50	4,150.1	-134.0	392.3	-91.5	1.48	1.06	5.96	
4,279.0	9.80	121.90	4,242.7	-142.7	406.4	-98.7	0.64	-0.64	0.43	
4,373.0	11.20	118.30	4,335.1	-151.3	421.2	-105.6	1.64	1.49	-3.83	
4,468.0	11.50	116.10	4,428.2	-159.8	437.8	-112.3	0.55	0.32	-2.32	
4,563.0	9.50	114.10	4,521.6	-167.2	453.5	-118.0	2.14	-2.11	-2.11	
4,657.0	8.40	104.10	4,614.5	-172.0	467.2	-121.3	2.02	-1.17	-10.64	
4,752.0	6.90	104.80	4,708.6	-175.2	479.5	-123.1	1.58	-1.58	0.74	
4,847.0	4.60	96.40	4,803.2	-177.0	488.8	-124.0	2.57	-2.42	-8.84	
4,941.0	2.90	65.40	4,897.0	-176.5	494.7	-122.8	2.75	-1.81	-32.98	
5,036.0	0.40	64.70	4,991.9	-175.3	497.2	-121.4	2.63	-2.63	-0.74	
5,131.0	0.10	186.60	5,086.9	-175.3	497.5	-121.3	0.48	-0.32	128.32	
5,225.0	0.30	265.30	5,180.9	-175.4	497.2	-121.5	0.32	0.21	83.72	
5,318.0	0.90	296.60	5,273.9	-175.1	496.3	-121.3	0.71	0.65	33.66	
5,413.0	1.00	297.80	5,368.9	-174.3	494.9	-120.7	0.11	0.11	1.26	
5,507.0	1.30	253.50	5,462.9	-174.3	493.2	-120.8	0.97	0.32	-47.13	
5,603.0	1.90	240.90	5,558.8	-175.3	490.7	-122.1	0.72	0.63	-13.13	
5,697.0	1.30	244.20	5,652.8	-176.6	488.4	-123.6	0.65	-0.64	3.51	
5,791.0	1.10	233.80	5,746.8	-177.6	486.7	-124.8	0.31	-0.21	-11.06	
5,886.0	0.80	225.80	5,841.8	-178.6	485.5	-125.9	0.34	-0.32	-8.42	
5,980.0	1.80	300.60	5,935.7	-178.3	483.8	-125.8	1.88	1.06	79.57	
6,075.0	1.80	298.70	6,030.7	-176.8	481.2	-124.6	0.06	0.00	-2.00	

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Survey										
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6,170.0	0.60	95.70	6,125.7	-176.1	480.4	-124.0	2.49	-1.26	165.26	
6,264.0	0.80	96.90	6,219.7	-176.3	481.5	-124.0	0.21	0.21	1.28	
6,359.0	0.90	91.50	6,314.7	-176.4	482.9	-124.0	0.13	0.11	-5.68	
6,453.0	0.90	32.90	6,408.7	-175.8	484.0	-123.3	0.94	0.00	-62.34	
6,548.0	1.00	45.80	6,503.6	-174.6	485.0	-122.0	0.25	0.11	13.58	
6,643.0	0.60	9.70	6,598.6	-173.5	485.7	-120.8	0.66	-0.42	-38.00	
6,737.0	7.80	352.30	6,692.3	-166.7	484.9	-114.1	7.69	7.66	-18.51	
6,784.0	14.00	348.60	6,738.5	-157.9	483.4	-105.6	13.27	13.19	-7.87	
6,831.0	20.00	356.40	6,783.4	-144.3	481.8	-92.2	13.63	12.77	16.60	
6,878.0	26.30	356.50	6,826.6	-125.9	480.6	-74.0	13.40	13.40	0.21	
6,925.0	32.80	357.40	6,867.4	-102.7	479.4	-51.2	13.86	13.83	1.91	
6,972.0	39.50	359.90	6,905.4	-75.1	478.8	-23.7	14.59	14.26	5.32	
7,020.0	46.30	3.60	6,940.5	-42.4	479.9	8.9	15.10	14.17	7.71	
7,067.0	46.30	3.90	6,973.0	-8.5	482.1	42.8	0.46	0.00	0.64	
7,114.0	46.30	2.30	7,005.5	25.4	483.9	76.8	2.46	0.00	-3.40	
7,161.0	48.20	1.60	7,037.4	59.9	485.1	111.2	4.19	4.04	-1.49	
7,209.0	51.40	2.00	7,068.3	96.5	486.3	147.7	6.70	6.67	0.83	
7,256.0	52.60	1.30	7,097.3	133.6	487.3	184.7	2.81	2.55	-1.49	
7,303.0	53.40	0.00	7,125.6	171.1	487.7	222.0	2.79	1.70	-2.77	
7,350.0	57.10	359.30	7,152.4	209.7	487.5	260.4	7.97	7.87	-1.49	
7,397.0	63.40	359.70	7,175.7	250.5	487.1	300.9	13.42	13.40	0.85	
7,444.0	68.90	0.80	7,194.7	293.5	487.3	343.6	11.90	11.70	2.34	
7,492.0	71.90	0.90	7,210.8	338.7	488.0	388.7	6.25	6.25	0.21	
7,539.0	79.10	0.20	7,222.5	384.1	488.4	433.9	15.39	15.32	-1.49	
7,570.0	85.20	0.40	7,226.8	414.8	488.6	464.5	19.69	19.68	0.65	
7,627.0	88.40	359.20	7,229.9	471.7	488.4	521.0	5.99	5.61	-2.11	
7,721.0	88.80	358.80	7,232.2	565.7	486.8	614.3	0.60	0.43	-0.43	
7,815.0	90.00	359.50	7,233.2	659.7	485.4	707.6	1.48	1.28	0.74	
7,909.0	90.70	358.30	7,232.6	753.6	483.6	800.8	1.48	0.74	-1.28	
8,004.0	91.50	357.80	7,230.8	848.6	480.3	894.9	0.99	0.84	-0.53	
8,099.0	91.50	357.80	7,228.3	943.5	476.7	988.8	0.00	0.00	0.00	
8,193.0	90.90	357.80	7,226.4	1,037.4	473.1	1,081.8	0.64	-0.64	0.00	
8,288.0	89.30	357.90	7,226.2	1,132.3	469.5	1,175.8	1.69	-1.68	0.11	
8,382.0	88.60	359.50	7,227.9	1,226.3	467.4	1,269.0	1.86	-0.74	1.70	
8,477.0	88.10	2.70	7,230.7	1,321.2	469.2	1,363.6	3.41	-0.53	3.37	
8,571.0	89.10	3.20	7,233.0	1,415.0	474.0	1,457.5	1.19	1.06	0.53	
8,667.0	88.30	0.90	7,235.1	1,511.0	477.5	1,553.2	2.54	-0.83	-2.40	
8,761.0	87.80	0.20	7,238.3	1,604.9	478.4	1,646.7	0.91	-0.53	-0.74	
8,856.0	90.80	1.60	7,239.5	1,699.9	479.9	1,741.3	3.48	3.16	1.47	
8,950.0	91.40	0.90	7,237.7	1,793.8	481.9	1,834.9	0.98	0.64	-0.74	
9,045.0	92.00	1.10	7,234.9	1,888.8	483.6	1,929.5	0.67	0.63	0.21	
9,140.0	91.40	0.40	7,232.1	1,983.7	484.8	2,024.0	0.97	-0.63	-0.74	
9,234.0	90.70	0.00	7,230.3	2,077.7	485.2	2,117.5	0.86	-0.74	-0.43	
9,329.0	90.60	358.50	7,229.3	2,172.7	483.9	2,211.8	1.58	-0.11	-1.58	
9,423.0	88.00	0.60	7,230.4	2,266.7	483.2	2,305.2	3.56	-2.77	2.23	
9,518.0	88.20	0.20	7,233.5	2,361.6	483.8	2,399.7	0.47	0.21	-0.42	
9,614.0	87.80	1.10	7,236.9	2,457.5	484.9	2,495.2	1.03	-0.42	0.94	
9,708.0	88.50	0.80	7,239.9	2,551.5	486.5	2,588.7	0.81	0.74	-0.32	
9,802.0	90.70	2.30	7,240.6	2,645.4	489.0	2,682.4	2.83	2.34	1.60	
9,896.0	90.70	1.10	7,239.4	2,739.4	491.8	2,776.2	1.28	0.00	-1.28	
9,991.0	91.70	0.20	7,237.5	2,834.3	492.9	2,870.7	1.42	1.05	-0.95	
10,085.0	92.40	359.50	7,234.1	2,928.3	492.6	2,964.1	1.05	0.74	-0.74	
10,180.0	89.70	359.00	7,232.3	3,023.3	491.4	3,058.4	2.89	-2.84	-0.53	
10,274.0	89.70	357.90	7,232.8	3,117.2	488.9	3,151.5	1.17	0.00	-1.17	

<b>Company:</b>	Verdad Oil & Gas Corporation	<b>Local Co-ordinate Reference:</b>	Well Drake 01N-65W-22-8N
<b>Project:</b>	Sec.22-T1N-R65W	<b>TVD Reference:</b>	WELL @ 5106.5ft (RKB - 16.5')
<b>Site:</b>	Drake 01N-65W-22 Pad Sec.22-T1N-R65W	<b>MD Reference:</b>	WELL @ 5106.5ft (RKB - 16.5')
<b>Well:</b>	Drake 01N-65W-22-8N	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #2	<b>Database:</b>	Landmark

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)
10,369.0	91.40	358.50	7,231.9	3,212.2	485.9	3,245.6	1.90	1.79	0.63
10,463.0	93.00	358.50	7,228.3	3,306.1	483.4	3,338.7	1.70	1.70	0.00
10,557.0	90.30	357.90	7,225.6	3,400.0	480.5	3,431.8	2.94	-2.87	-0.64
10,652.0	91.00	358.80	7,224.5	3,494.9	477.7	3,525.9	1.20	0.74	0.95
10,746.0	90.40	359.50	7,223.4	3,588.9	476.3	3,619.2	0.98	-0.64	0.74
10,839.0	92.00	1.60	7,221.4	3,681.9	477.2	3,711.7	2.84	1.72	2.26
10,934.0	93.00	0.90	7,217.3	3,776.7	479.3	3,806.3	1.28	1.05	-0.74
11,028.0	89.40	0.80	7,215.3	3,870.7	480.7	3,899.9	3.83	-3.83	-0.11
11,123.0	89.20	0.00	7,216.5	3,965.7	481.4	3,994.4	0.87	-0.21	-0.84
11,217.0	90.00	0.80	7,217.1	4,059.7	482.0	4,087.9	1.20	0.85	0.85
11,312.0	91.60	0.00	7,215.8	4,154.7	482.7	4,182.4	1.88	1.68	-0.84
11,407.0	90.60	359.20	7,214.0	4,249.6	482.0	4,276.8	1.35	-1.05	-0.84
11,501.0	89.90	359.30	7,213.6	4,343.6	480.8	4,370.1	0.75	-0.74	0.11
11,595.0	90.00	358.80	7,213.7	4,437.6	479.2	4,463.4	0.54	0.11	-0.53
11,690.0	90.70	357.80	7,213.1	4,532.6	476.4	4,557.5	1.28	0.74	-1.05
11,715.0	90.80	357.80	7,212.8	4,557.6	475.4	4,582.3	0.40	0.40	0.00
11,770.0	90.80	357.80	7,212.0	4,612.5	473.3	4,636.7	0.00	0.00	0.00

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_