

Verdad Oil & Gas Corporation

Well Name: **Blackburn 01N-64W-08-8N**

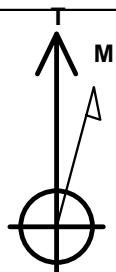
Surface Location: Blackburn 01N-64W-08-8N Sec.8-T1N-R64W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 5045.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1270465.53	3261255.99	40.072043	-104.566451	

Frontier 6 RKB - 16.5' WELL @ 5061.5ft (Frontier 6 RKB - 16.5')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
600' Setback BHL	1.0	-4244.7	-1462.3	Polygon
600' Setback SHL	1.0	-164.0	-1462.1	Polygon
North Sectionline	1.0	436.0	-1462.3	Polygon
SHL 436'FNL & 324'FEL	1.0	0.0	0.0	Point
BHL 600'FSL & 660'FEL	6981.5	-4244.7	-410.1	Point



Azimuths to True North
Magnetic North: 8.26°

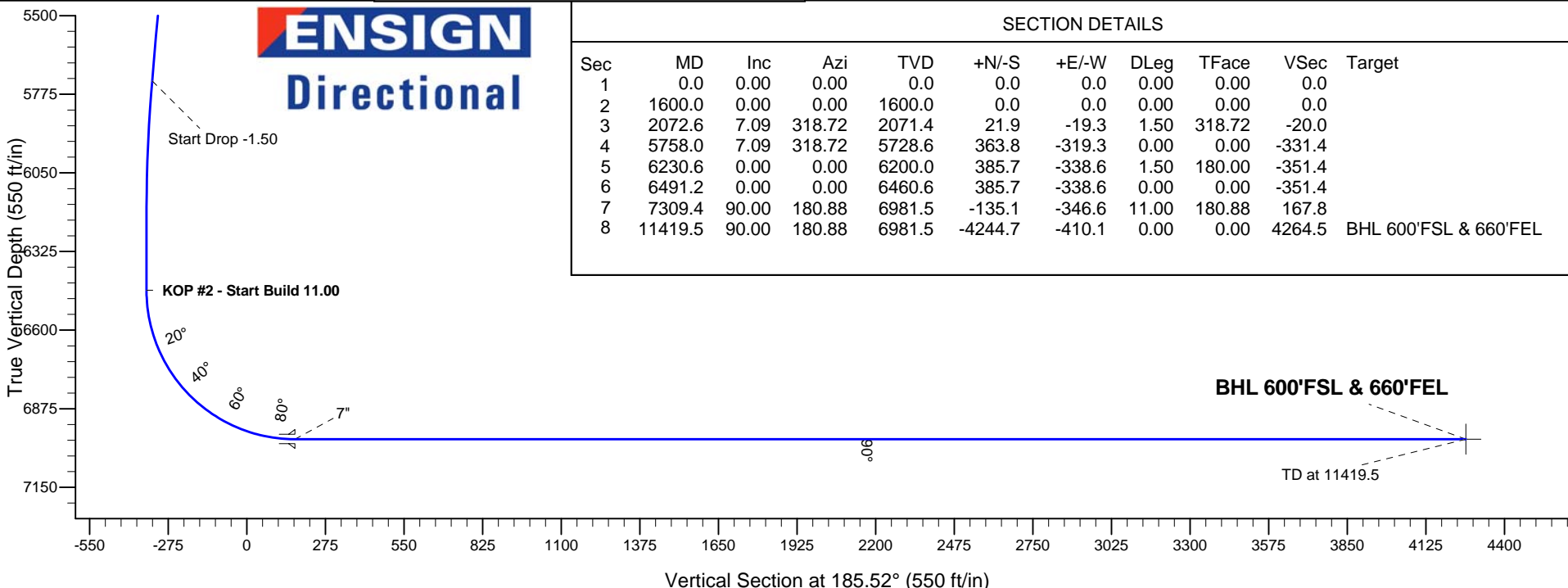
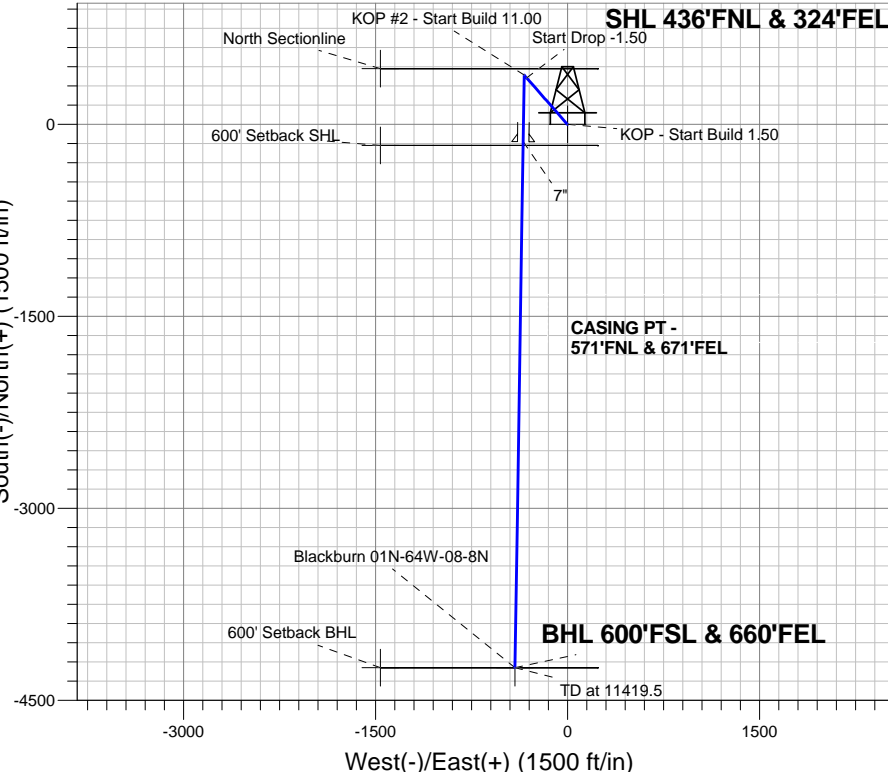
Magnetic Field
Strength: 52610.6snT
Dip Angle: 66.70°
Date: 12/10/2014
Model: IGRF2010

Blackburn 01N-64W-08-8N Sec.8-T1N-R64W
Blackburn 01N-64W-08-8N
Plan #1 (12-10-14)

ANNOTATIONS

TVD	MD	Annotation
1600.0	1600.0	KOP - Start Build 1.50
5728.6	5758.0	Start Drop -1.50
6460.6	6491.2	KOP #2 - Start Build 11.00
6981.5	11419.5	TD at 11419.5

South(-)/North(+) (1500 ft/in)



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1600.0	0.00	0.00	1600.0	0.0	0.0	0.00	0.00	0.0	
3	2072.6	7.09	318.72	2071.4	21.9	-19.3	1.50	318.72	-20.0	
4	5758.0	7.09	318.72	5728.6	363.8	-319.3	0.00	0.00	-331.4	
5	6230.6	0.00	0.00	6200.0	385.7	-338.6	1.50	180.00	-351.4	
6	6491.2	0.00	0.00	6460.6	385.7	-338.6	0.00	0.00	-351.4	
7	7309.4	90.00	180.88	6981.5	-135.1	-346.6	11.00	180.88	167.8	
8	11419.5	90.00	180.88	6981.5	-4244.7	-410.1	0.00	0.00	4264.5	BHL 600'FSL & 660'FEL



Verdad Oil & Gas Corporation

Sec.8-T1N-R64W

Blackburn 01N-64W-08-8N Sec.8-T1N-R64W

Blackburn 01N-64W-08-8N

Wellbore #1

Plan: Plan #1 (12-10-14)

Standard Planning Report

10 December, 2014

Database:	landmark	Local Co-ordinate Reference:	Well Blackburn 01N-64W-08-8N
Company:	Verdad Oil & Gas Corporation	TVD Reference:	WELL @ 5061.5ft (Frontier 6 RKB - 16.5')
Project:	Sec.8-T1N-R64W	MD Reference:	WELL @ 5061.5ft (Frontier 6 RKB - 16.5')
Site:	Blackburn 01N-64W-08-8N Sec.8-T1N-R64W	North Reference:	True
Well:	Blackburn 01N-64W-08-8N	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (12-10-14)		

Project	Sec.8-T1N-R64W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site		Blackburn 01N-64W-08-8N Sec.8-T1N-R64W			
Site Position:		Northing:	1,270,465.55ft	Latitude:	40.072043
From:	Lat/Long	Easting:	3,261,255.99ft	Longitude:	-104.566451
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.60 °

Well	Blackburn 01N-64W-08-8N					
Well Position	+N-S	0.0 ft	Northing:	1,270,465.53 ft	Latitude:	40.072043
	+E-W	0.0 ft	Easting:	3,261,255.99 ft	Longitude:	-104.566451
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,045.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/10/2014	8.26	66.70	52,611

Design	Plan #1 (12-10-14)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	185.52

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,072.6	7.09	318.72	2,071.4	21.9	-19.3	1.50	1.50	0.00	318.72	
5,758.0	7.09	318.72	5,728.6	363.8	-319.3	0.00	0.00	0.00	0.00	
6,230.6	0.00	0.00	6,200.0	385.7	-338.6	1.50	-1.50	0.00	180.00	
6,491.2	0.00	0.00	6,460.6	385.7	-338.6	0.00	0.00	0.00	0.00	
7,309.4	90.00	180.88	6,981.5	-135.1	-346.6	11.00	11.00	0.00	180.88	
11,419.5	90.00	180.88	6,981.5	-4,244.7	-410.1	0.00	0.00	0.00	0.00	BHL 600'FSL & 660'FSL

Database:	landmark	Local Co-ordinate Reference:	Well Blackburn 01N-64W-08-8N
Company:	Verdad Oil & Gas Corporation	TVD Reference:	WELL @ 5061.5ft (Frontier 6 RKB - 16.5')
Project:	Sec.8-T1N-R64W	MD Reference:	WELL @ 5061.5ft (Frontier 6 RKB - 16.5')
Site:	Blackburn 01N-64W-08-8N Sec.8-T1N-R64W	North Reference:	True
Well:	Blackburn 01N-64W-08-8N	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (12-10-14)		

Planned 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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP - Start Build 1.50									
1,700.0	1.50	318.72	1,700.0	1.0	-0.9	-0.9	1.50	1.50	0.00
1,800.0	3.00	318.72	1,799.9	3.9	-3.5	-3.6	1.50	1.50	0.00
1,900.0	4.50	318.72	1,899.7	8.8	-7.8	-8.1	1.50	1.50	0.00
2,000.0	6.00	318.72	1,999.3	15.7	-13.8	-14.3	1.50	1.50	0.00
2,072.6	7.09	318.72	2,071.4	21.9	-19.3	-20.0	1.50	1.50	0.00
2,100.0	7.09	318.72	2,098.6	24.5	-21.5	-22.3	0.00	0.00	0.00
2,200.0	7.09	318.72	2,197.8	33.8	-29.6	-30.8	0.00	0.00	0.00
2,300.0	7.09	318.72	2,297.1	43.0	-37.8	-39.2	0.00	0.00	0.00
2,400.0	7.09	318.72	2,396.3	52.3	-45.9	-47.7	0.00	0.00	0.00
2,500.0	7.09	318.72	2,495.5	61.6	-54.1	-56.1	0.00	0.00	0.00
2,600.0	7.09	318.72	2,594.8	70.9	-62.2	-64.5	0.00	0.00	0.00
2,700.0	7.09	318.72	2,694.0	80.1	-70.3	-73.0	0.00	0.00	0.00
2,800.0	7.09	318.72	2,793.2	89.4	-78.5	-81.4	0.00	0.00	0.00
2,900.0	7.09	318.72	2,892.5	98.7	-86.6	-89.9	0.00	0.00	0.00
3,000.0	7.09	318.72	2,991.7	108.0	-94.8	-98.3	0.00	0.00	0.00
3,100.0	7.09	318.72	3,090.9	117.2	-102.9	-106.8	0.00	0.00	0.00
3,200.0	7.09	318.72	3,190.2	126.5	-111.1	-115.2	0.00	0.00	0.00
3,300.0	7.09	318.72	3,289.4	135.8	-119.2	-123.7	0.00	0.00	0.00
3,400.0	7.09	318.72	3,388.6	145.1	-127.3	-132.1	0.00	0.00	0.00
3,500.0	7.09	318.72	3,487.9	154.3	-135.5	-140.6	0.00	0.00	0.00
3,600.0	7.09	318.72	3,587.1	163.6	-143.6	-149.0	0.00	0.00	0.00
3,700.0	7.09	318.72	3,686.4	172.9	-151.8	-157.5	0.00	0.00	0.00
3,800.0	7.09	318.72	3,785.6	182.2	-159.9	-165.9	0.00	0.00	0.00
3,900.0	7.09	318.72	3,884.8	191.4	-168.1	-174.4	0.00	0.00	0.00
4,000.0	7.09	318.72	3,984.1	200.7	-176.2	-182.8	0.00	0.00	0.00
4,100.0	7.09	318.72	4,083.3	210.0	-184.3	-191.3	0.00	0.00	0.00
4,200.0	7.09	318.72	4,182.5	219.3	-192.5	-199.7	0.00	0.00	0.00
4,300.0	7.09	318.72	4,281.8	228.5	-200.6	-208.2	0.00	0.00	0.00
4,400.0	7.09	318.72	4,381.0	237.8	-208.8	-216.6	0.00	0.00	0.00
4,500.0	7.09	318.72	4,480.2	247.1	-216.9	-225.1	0.00	0.00	0.00
4,600.0	7.09	318.72	4,579.5	256.4	-225.1	-233.5	0.00	0.00	0.00
4,700.0	7.09	318.72	4,678.7	265.6	-233.2	-242.0	0.00	0.00	0.00
4,800.0	7.09	318.72	4,777.9	274.9	-241.3	-250.4	0.00	0.00	0.00
4,900.0	7.09	318.72	4,877.2	284.2	-249.5	-258.9	0.00	0.00	0.00
5,000.0	7.09	318.72	4,976.4	293.5	-257.6	-267.3	0.00	0.00	0.00
5,100.0	7.09	318.72	5,075.7	302.7	-265.8	-275.8	0.00	0.00	0.00

Database:	landmark	Local Co-ordinate Reference:	Well Blackburn 01N-64W-08-8N
Company:	Verdad Oil & Gas Corporation	TVD Reference:	WELL @ 5061.5ft (Frontier 6 RKB - 16.5')
Project:	Sec.8-T1N-R64W	MD Reference:	WELL @ 5061.5ft (Frontier 6 RKB - 16.5')
Site:	Blackburn 01N-64W-08-8N Sec.8-T1N-R64W	North Reference:	True
Well:	Blackburn 01N-64W-08-8N	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (12-10-14)		

Planned 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)
5,200.0	7.09	318.72	5,174.9	312.0	-273.9	-284.2	0.00	0.00	0.00
5,300.0	7.09	318.72	5,274.1	321.3	-282.0	-292.7	0.00	0.00	0.00
5,400.0	7.09	318.72	5,373.4	330.6	-290.2	-301.1	0.00	0.00	0.00
5,500.0	7.09	318.72	5,472.6	339.8	-298.3	-309.6	0.00	0.00	0.00
5,600.0	7.09	318.72	5,571.8	349.1	-306.5	-318.0	0.00	0.00	0.00
5,700.0	7.09	318.72	5,671.1	358.4	-314.6	-326.5	0.00	0.00	0.00
5,758.0	7.09	318.72	5,728.6	363.8	-319.3	-331.4	0.00	0.00	0.00
Start Drop -1.50									
5,800.0	6.46	318.72	5,770.3	367.5	-322.6	-334.8	1.50	-1.50	0.00
5,900.0	4.96	318.72	5,869.8	375.0	-329.2	-341.6	1.50	-1.50	0.00
6,000.0	3.46	318.72	5,969.6	380.5	-334.0	-346.6	1.50	-1.50	0.00
6,100.0	1.96	318.72	6,069.4	384.0	-337.1	-349.8	1.50	-1.50	0.00
6,200.0	0.46	318.72	6,169.4	385.6	-338.5	-351.3	1.50	-1.50	0.00
6,230.6	0.00	0.00	6,200.0	385.7	-338.6	-351.4	1.50	-1.50	0.00
6,300.0	0.00	0.00	6,269.4	385.7	-338.6	-351.4	0.00	0.00	0.00
6,400.0	0.00	0.00	6,369.4	385.7	-338.6	-351.4	0.00	0.00	0.00
6,491.2	0.00	0.00	6,460.6	385.7	-338.6	-351.4	0.00	0.00	0.00
KOP #2 - Start Build 11.00									
6,500.0	0.97	180.88	6,469.4	385.6	-338.6	-351.3	10.98	10.98	0.00
6,600.0	11.97	180.88	6,568.6	374.4	-338.8	-340.1	11.00	11.00	0.00
6,700.0	22.97	180.88	6,663.9	344.4	-339.2	-310.2	11.00	11.00	0.00
6,800.0	33.97	180.88	6,751.6	296.8	-340.0	-262.8	11.00	11.00	0.00
6,900.0	44.97	180.88	6,828.7	233.4	-341.0	-199.5	11.00	11.00	0.00
7,000.0	55.97	180.88	6,892.3	156.4	-342.1	-122.8	11.00	11.00	0.00
7,100.0	66.97	180.88	6,940.0	68.7	-343.5	-35.3	11.00	11.00	0.00
7,200.0	77.97	180.88	6,970.1	-26.5	-345.0	59.6	11.00	11.00	0.00
7,300.0	88.97	180.88	6,981.4	-125.7	-346.5	158.5	11.00	11.00	0.00
7,309.4	90.00	180.88	6,981.5	-135.1	-346.6	167.8	11.00	11.00	0.00
7"									
7,400.0	90.00	180.88	6,981.5	-225.7	-348.0	258.1	0.00	0.00	0.00
7,500.0	90.00	180.88	6,981.5	-325.7	-349.6	357.8	0.00	0.00	0.00
7,600.0	90.00	180.88	6,981.5	-425.7	-351.1	457.5	0.00	0.00	0.00
7,700.0	90.00	180.88	6,981.5	-525.7	-352.7	557.1	0.00	0.00	0.00
7,800.0	90.00	180.88	6,981.5	-625.7	-354.2	656.8	0.00	0.00	0.00
7,900.0	90.00	180.88	6,981.5	-725.6	-355.8	756.5	0.00	0.00	0.00
8,000.0	90.00	180.88	6,981.5	-825.6	-357.3	856.2	0.00	0.00	0.00
8,100.0	90.00	180.88	6,981.5	-925.6	-358.8	955.8	0.00	0.00	0.00
8,200.0	90.00	180.88	6,981.5	-1,025.6	-360.4	1,055.5	0.00	0.00	0.00
8,300.0	90.00	180.88	6,981.5	-1,125.6	-361.9	1,155.2	0.00	0.00	0.00
8,400.0	90.00	180.88	6,981.5	-1,225.6	-363.5	1,254.9	0.00	0.00	0.00
8,500.0	90.00	180.88	6,981.5	-1,325.6	-365.0	1,354.5	0.00	0.00	0.00
8,600.0	90.00	180.88	6,981.5	-1,425.6	-366.6	1,454.2	0.00	0.00	0.00
8,700.0	90.00	180.88	6,981.5	-1,525.5	-368.1	1,553.9	0.00	0.00	0.00
8,800.0	90.00	180.88	6,981.5	-1,625.5	-369.6	1,653.5	0.00	0.00	0.00
8,900.0	90.00	180.88	6,981.5	-1,725.5	-371.2	1,753.2	0.00	0.00	0.00
9,000.0	90.00	180.88	6,981.5	-1,825.5	-372.7	1,852.9	0.00	0.00	0.00
9,100.0	90.00	180.88	6,981.5	-1,925.5	-374.3	1,952.6	0.00	0.00	0.00
9,200.0	90.00	180.88	6,981.5	-2,025.5	-375.8	2,052.2	0.00	0.00	0.00
9,300.0	90.00	180.88	6,981.5	-2,125.5	-377.4	2,151.9	0.00	0.00	0.00
9,400.0	90.00	180.88	6,981.5	-2,225.5	-378.9	2,251.6	0.00	0.00	0.00
9,500.0	90.00	180.88	6,981.5	-2,325.5	-380.5	2,351.3	0.00	0.00	0.00
9,600.0	90.00	180.88	6,981.5	-2,425.4	-382.0	2,450.9	0.00	0.00	0.00
9,700.0	90.00	180.88	6,981.5	-2,525.4	-383.5	2,550.6	0.00	0.00	0.00

Database:	landmark	Local Co-ordinate Reference:	Well Blackburn 01N-64W-08-8N
Company:	Verdad Oil & Gas Corporation	TVD Reference:	WELL @ 5061.5ft (Frontier 6 RKB - 16.5')
Project:	Sec.8-T1N-R64W	MD Reference:	WELL @ 5061.5ft (Frontier 6 RKB - 16.5')
Site:	Blackburn 01N-64W-08-8N Sec.8-T1N-R64W	North Reference:	True
Well:	Blackburn 01N-64W-08-8N	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (12-10-14)		

Planned 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)	
9,800.0	90.00	180.88	6,981.5	-2,625.4	-385.1	2,650.3	0.00	0.00	0.00	
9,900.0	90.00	180.88	6,981.5	-2,725.4	-386.6	2,750.0	0.00	0.00	0.00	
10,000.0	90.00	180.88	6,981.5	-2,825.4	-388.2	2,849.6	0.00	0.00	0.00	
10,100.0	90.00	180.88	6,981.5	-2,925.4	-389.7	2,949.3	0.00	0.00	0.00	
10,200.0	90.00	180.88	6,981.5	-3,025.4	-391.3	3,049.0	0.00	0.00	0.00	
10,300.0	90.00	180.88	6,981.5	-3,125.4	-392.8	3,148.6	0.00	0.00	0.00	
10,400.0	90.00	180.88	6,981.5	-3,225.3	-394.3	3,248.3	0.00	0.00	0.00	
10,500.0	90.00	180.88	6,981.5	-3,325.3	-395.9	3,348.0	0.00	0.00	0.00	
10,600.0	90.00	180.88	6,981.5	-3,425.3	-397.4	3,447.7	0.00	0.00	0.00	
10,700.0	90.00	180.88	6,981.5	-3,525.3	-399.0	3,547.3	0.00	0.00	0.00	
10,800.0	90.00	180.88	6,981.5	-3,625.3	-400.5	3,647.0	0.00	0.00	0.00	
10,900.0	90.00	180.88	6,981.5	-3,725.3	-402.1	3,746.7	0.00	0.00	0.00	
11,000.0	90.00	180.88	6,981.5	-3,825.3	-403.6	3,846.4	0.00	0.00	0.00	
11,100.0	90.00	180.88	6,981.5	-3,925.3	-405.1	3,946.0	0.00	0.00	0.00	
11,200.0	90.00	180.88	6,981.5	-4,025.2	-406.7	4,045.7	0.00	0.00	0.00	
11,300.0	90.00	180.88	6,981.5	-4,125.2	-408.2	4,145.4	0.00	0.00	0.00	
11,400.0	90.00	180.88	6,981.5	-4,225.2	-409.8	4,245.0	0.00	0.00	0.00	
11,419.5	90.00	180.88	6,981.5	-4,244.7	-410.1	4,264.5	0.00	0.00	0.00	

Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude	
- hit/miss target										
- Shape										
BHL 600'FSL & 660'F	0.00	0.00	6,981.5	-4,244.7	-410.1	1,266,216.92	3,260,890.64	40.060391	-104.567916	
- plan hits target										
- Point										
SHL 436'FNL & 324'F	0.00	0.00	1.0	0.0	0.0	1,270,465.55	3,261,255.99	40.072043	-104.566451	
- plan hits target										
- Point										

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
7,309.4	6,981.5	7"	7	7-1/2	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment	
1,600.0	1,600.0	0.0	0.0	KOP - Start Build 1.50	
5,758.0	5,728.6	21.9	-19.3	Start Drop -1.50	
6,491.2	6,460.6	363.8	-319.3	KOP #2 - Start Build 11.00	
11,419.5	6,981.5	385.7	-338.6	TD at 11419.5	



Verdad Oil & Gas Corporation

Sec.8-T1N-R64W

Blackburn 01N-64W-08-8N Sec.8-T1N-R64W

Blackburn 01N-64W-08-8N

Wellbore #1

Plan #1 (12-10-14)

Anticollision Report

10 December, 2014

Company:	Verdad Oil & Gas Corporation	Local Co-ordinate Reference:	Well Blackburn 01N-64W-08-8N
Project:	Sec.8-T1N-R64W	TVD Reference:	WELL @ 5061.5ft (Frontier 6 RKB - 16.5')
Reference Site:	Blackburn 01N-64W-08-8N Sec.8-T1N-R64W	MD Reference:	WELL @ 5061.5ft (Frontier 6 RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Blackburn 01N-64W-08-8N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (12-10-14)	Offset TVD Reference:	Offset Datum

Reference	Plan #1 (12-10-14)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	Error Model:	ISCSWA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	12/10/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	11,419.5	Plan #1 (12-10-14) (Wellbore #1)	MWD	MWD - Standard	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Blackburn 01N-64W-08-6N Sec.8-T1N-R64W						
Blackburn 01N-64W-08-6N - Wellbore #1 - Plan #2 (9-26	7,351.8	11,452.1	486.6	384.1	4.747	CC, ES, SF

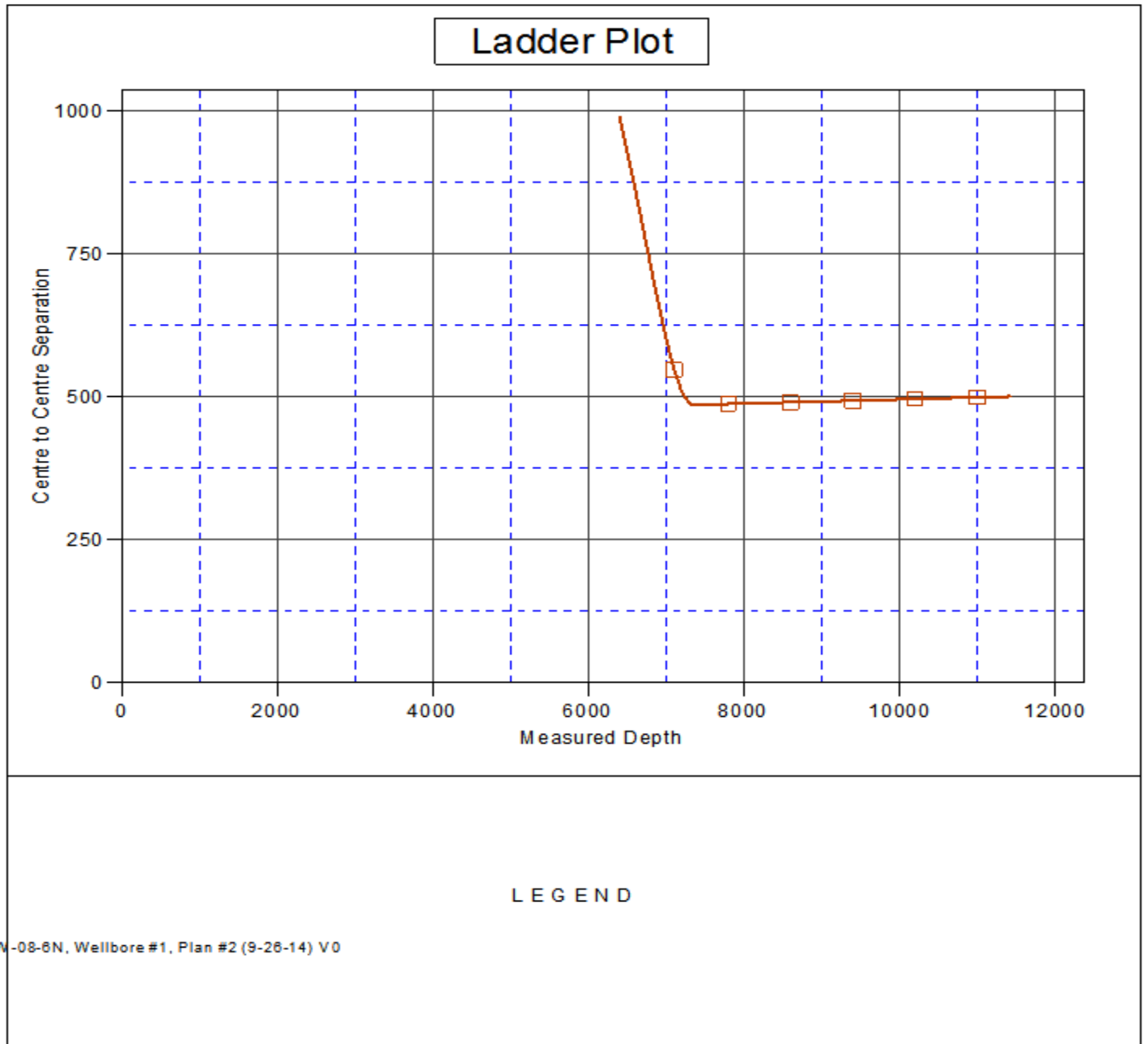
Blackburn 01N-64W-08-6N Sec.8-T1N-R64W - Blackburn 01N-64W-08-6N - Wellbore #1 - Plan #2 (9-2)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
6,400.0	6,369.4	11,456.5	7,053.0	16.8	86.7	-138.12	-164.0	-831.4	990.3	918.1	72.25	13.706		
6,500.0	6,469.4	11,456.5	7,053.0	17.0	86.7	41.49	-164.0	-831.4	926.6	852.7	73.96	12.528		
6,600.0	6,568.6	11,456.5	7,053.0	17.1	86.7	47.84	-164.0	-831.4	863.1	782.4	80.67	10.699		
6,700.0	6,663.9	11,456.5	7,053.0	17.0	86.7	55.54	-164.0	-831.4	796.5	708.8	87.65	9.087		
6,800.0	6,751.6	11,456.5	7,053.0	16.9	86.7	64.29	-164.0	-831.4	728.7	634.8	93.97	7.755		
6,900.0	6,828.7	11,456.5	7,053.0	16.8	86.7	73.38	-164.0	-831.4	662.4	563.7	98.66	6.714		
7,000.0	6,892.3	11,456.5	7,053.0	16.6	86.7	81.80	-164.0	-831.4	600.7	499.4	101.27	5.932		
7,100.0	6,940.0	11,456.5	7,053.0	16.5	86.7	88.63	-164.0	-831.4	547.9	445.7	102.17	5.363		
7,200.0	6,970.1	11,456.5	7,053.0	16.4	86.7	93.30	-164.0	-831.4	509.0	406.7	102.24	4.978		
7,300.0	6,981.4	11,456.5	7,053.0	16.5	86.7	95.57	-164.0	-831.4	488.8	386.5	102.30	4.778		
7,351.8	6,982.1	11,452.1	7,053.0	16.7	86.6	95.59	-168.3	-831.5	486.6	384.1	102.51	4.747 CC, ES, SF		
7,400.0	6,981.5	11,404.0	7,053.2	17.0	85.7	95.68	-216.5	-832.4	486.8	385.0	101.86	4.780		
7,500.0	6,981.5	11,304.0	7,053.6	17.8	83.8	95.72	-316.5	-834.3	487.2	386.5	100.73	4.837		
7,600.0	6,981.5	11,204.0	7,054.0	18.8	82.0	95.76	-416.4	-836.1	487.5	387.8	99.77	4.887		
7,700.0	6,981.5	11,104.0	7,054.4	19.8	80.1	95.81	-516.4	-838.0	487.9	388.9	98.96	4.930		
7,800.0	6,981.5	11,004.0	7,054.7	21.0	78.2	95.85	-616.4	-839.9	488.3	390.0	98.28	4.968		
7,900.0	6,981.5	10,904.0	7,055.1	22.3	76.3	95.89	-716.4	-841.7	488.6	390.9	97.69	5.002		
8,000.0	6,981.5	10,804.0	7,055.5	23.7	74.5	95.93	-816.4	-843.6	489.0	391.8	97.20	5.031		
8,100.0	6,981.5	10,704.0	7,055.9	25.1	72.6	95.97	-916.3	-845.5	489.4	392.6	96.78	5.057		
8,200.0	6,981.5	10,604.0	7,056.3	26.6	70.7	96.01	-1,016.3	-847.3	489.7	393.3	96.41	5.079		
8,300.0	6,981.5	10,504.0	7,056.7	28.2	68.9	96.05	-1,116.3	-849.2	490.1	394.0	96.10	5.099		
8,400.0	6,981.5	10,404.0	7,057.0	29.8	67.0	96.09	-1,216.3	-851.1	490.4	394.6	95.84	5.117		
8,500.0	6,981.5	10,304.0	7,057.4	31.4	65.1	96.13	-1,316.3	-852.9	490.8	395.2	95.61	5.133		
8,600.0	6,981.5	10,204.0	7,057.8	33.0	63.3	96.17	-1,416.2	-854.8	491.2	395.7	95.42	5.148		
8,700.0	6,981.5	10,104.0	7,058.2	34.7	61.4	96.21	-1,516.2	-856.7	491.5	396.3	95.25	5.160		
8,800.0	6,981.5	10,004.0	7,058.6	36.4	59.6	96.25	-1,616.2	-858.5	491.9	396.8	95.11	5.172		

Company:	Verdad Oil & Gas Corporation	Local Co-ordinate Reference:	Well Blackburn 01N-64W-08-8N
Project:	Sec.8-T1N-R64W	TVD Reference:	WELL @ 5061.5ft (Frontier 6 RKB - 16.5')
Reference Site:	Blackburn 01N-64W-08-8N Sec.8-T1N-R64W	MD Reference:	WELL @ 5061.5ft (Frontier 6 RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Blackburn 01N-64W-08-8N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (12-10-14)	Offset TVD Reference:	Offset Datum

Offset Design Blackburn 01N-64W-08-6N Sec.8-T1N-R64W - Blackburn 01N-64W-08-6N - Wellbore #1 - Plan #2 (9-2)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,900.0	6,981.5	9,904.0	7,059.0	38.1	57.7	96.29	-1,716.2	-860.4	492.3	397.3	94.99	5.182	
9,000.0	6,981.5	9,804.0	7,059.3	39.9	55.9	96.33	-1,816.2	-862.3	492.6	397.7	94.89	5.191	
9,100.0	6,981.5	9,704.0	7,059.7	41.6	54.1	96.37	-1,916.1	-864.1	493.0	398.2	94.81	5.200	
9,200.0	6,981.5	9,604.0	7,060.1	43.4	52.2	96.41	-2,016.1	-866.0	493.3	398.6	94.75	5.207	
9,300.0	6,981.5	9,504.0	7,060.5	45.2	50.4	96.45	-2,116.1	-867.9	493.7	399.0	94.71	5.213	
9,400.0	6,981.5	9,404.0	7,060.9	47.0	48.6	96.49	-2,216.1	-869.7	494.1	399.4	94.68	5.218	
9,500.0	6,981.5	9,304.0	7,061.3	48.8	46.8	96.53	-2,316.1	-871.6	494.4	399.8	94.66	5.223	
9,600.0	6,981.5	9,204.0	7,061.6	50.6	45.0	96.57	-2,416.0	-873.5	494.8	400.1	94.67	5.227	
9,700.0	6,981.5	9,104.0	7,062.0	52.4	43.2	96.61	-2,516.0	-875.3	495.2	400.5	94.69	5.229	
9,800.0	6,981.5	9,004.0	7,062.4	54.2	41.4	96.65	-2,616.0	-877.2	495.5	400.8	94.72	5.231	
9,900.0	6,981.5	8,904.0	7,062.8	56.0	39.6	96.69	-2,716.0	-879.0	495.9	401.1	94.78	5.232	
10,000.0	6,981.5	8,804.0	7,063.2	57.9	37.9	96.73	-2,816.0	-880.9	496.3	401.4	94.85	5.232	
10,100.0	6,981.5	8,704.0	7,063.6	59.7	36.1	96.77	-2,916.0	-882.8	496.6	401.7	94.94	5.231	
10,200.0	6,981.5	8,604.0	7,064.0	61.5	34.4	96.81	-3,015.9	-884.6	497.0	401.9	95.05	5.229	
10,300.0	6,981.5	8,504.0	7,064.3	63.4	32.7	96.85	-3,115.9	-886.5	497.4	402.2	95.19	5.225	
10,400.0	6,981.5	8,404.0	7,064.7	65.2	31.0	96.89	-3,215.9	-888.4	497.7	402.4	95.35	5.220	
10,500.0	6,981.5	8,304.0	7,065.1	67.1	29.4	96.93	-3,315.9	-890.2	498.1	402.5	95.55	5.213	
10,600.0	6,981.5	8,204.0	7,065.5	68.9	27.7	96.97	-3,415.9	-892.1	498.5	402.7	95.78	5.204	
10,700.0	6,981.5	8,104.0	7,065.9	70.8	26.2	97.01	-3,515.8	-894.0	498.8	402.8	96.05	5.194	
10,800.0	6,981.5	8,004.0	7,066.3	72.7	24.6	97.05	-3,615.8	-895.8	499.2	402.8	96.37	5.180	
10,900.0	6,981.5	7,904.0	7,066.6	74.5	23.1	97.09	-3,715.8	-897.7	499.6	402.8	96.75	5.164	
11,000.0	6,981.5	7,804.0	7,067.0	76.4	21.7	97.13	-3,815.8	-899.6	499.9	402.7	97.19	5.144	
11,100.0	6,981.5	7,704.0	7,067.4	78.3	20.4	97.17	-3,915.8	-901.4	500.3	402.6	97.72	5.120	
11,200.0	6,981.5	7,604.0	7,067.8	80.1	19.2	97.20	-4,015.7	-903.3	500.7	402.3	98.35	5.091	
11,300.0	6,981.5	7,504.0	7,068.2	82.0	18.1	97.24	-4,115.7	-905.2	501.0	401.9	99.10	5.056	
11,400.0	6,981.5	7,404.0	7,068.6	83.9	17.1	97.28	-4,215.7	-907.0	501.4	401.4	99.99	5.015	
11,419.5	6,981.5	7,384.6	7,068.6	84.2	16.9	97.29	-4,235.2	-907.4	501.5	401.3	100.18	5.006	

Company:	Verdad Oil & Gas Corporation	Local Co-ordinate Reference:	Well Blackburn 01N-64W-08-8N
Project:	Sec.8-T1N-R64W	TVD Reference:	WELL @ 5061.5ft (Frontier 6 RKB - 16.5')
Reference Site:	Blackburn 01N-64W-08-8N Sec.8-T1N-R64W	MD Reference:	WELL @ 5061.5ft (Frontier 6 RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Blackburn 01N-64W-08-8N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (12-10-14)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 5061.5ft (Frontier 6 RKB - 1 Coordinates are relative to: Blackburn 01N-64W-08-8N
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.60°



Company:	Verdad Oil & Gas Corporation	Local Co-ordinate Reference:	Well Blackburn 01N-64W-08-8N
Project:	Sec.8-T1N-R64W	TVD Reference:	WELL @ 5061.5ft (Frontier 6 RKB - 16.5')
Reference Site:	Blackburn 01N-64W-08-8N Sec.8-T1N-R64W	MD Reference:	WELL @ 5061.5ft (Frontier 6 RKB - 16.5')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Blackburn 01N-64W-08-8N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (12-10-14)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 5061.5ft (Frontier 6 RKB - 1 Coordinates are relative to: Blackburn 01N-64W-08-8N
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is -105.500000 ° Grid Convergence at Surface is: 0.60°

