



Project: Weld Co., CO
 Site: Sec.22-T1N-R65W
 Well: Drake 01N-65W-22-4N
 Wellbore: Wellbore #1
 Design: Design #1
 Lat: 40° 1' 48.846 N
 Long: 104° 38' 44.304 W
 GL: 5090.00



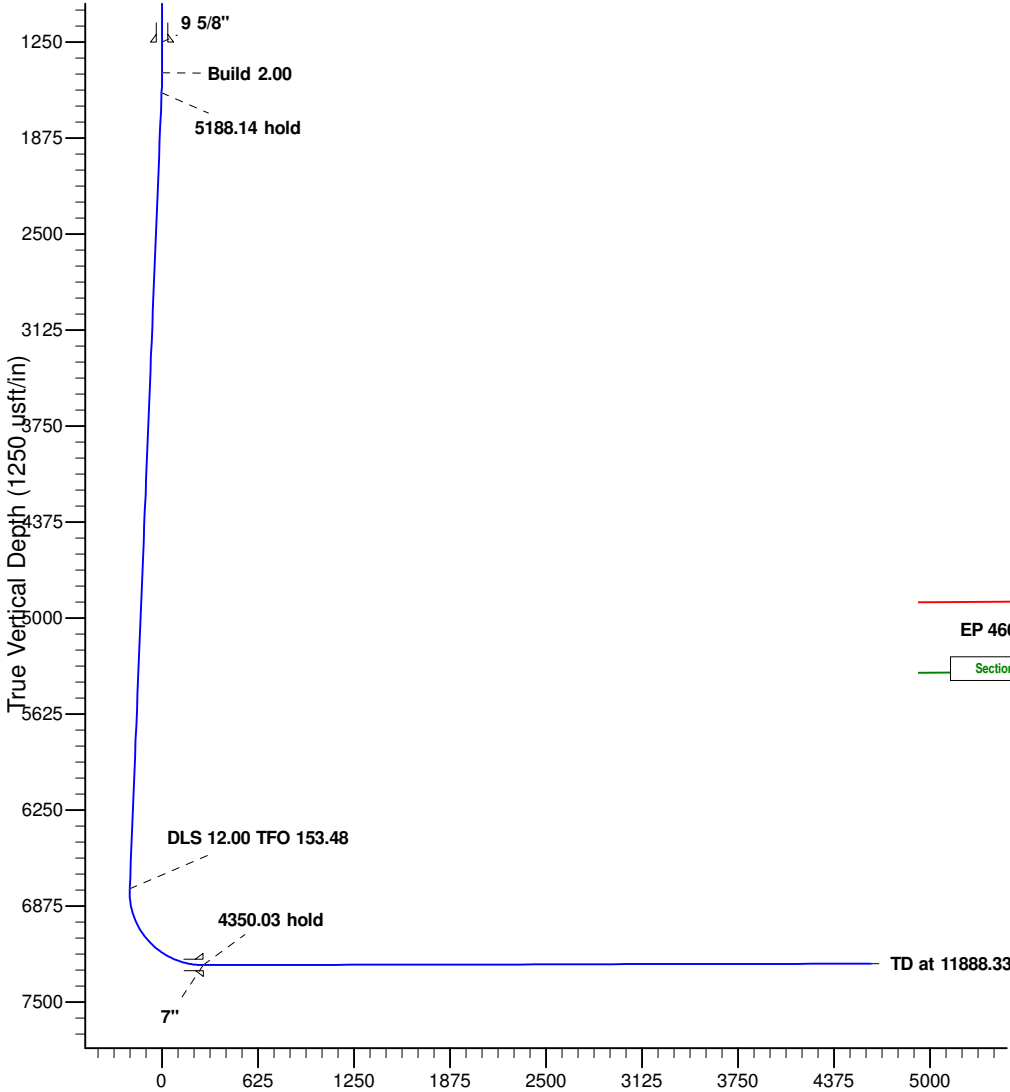
KB: WELL @ 5114.30usft (Original Well Elev)



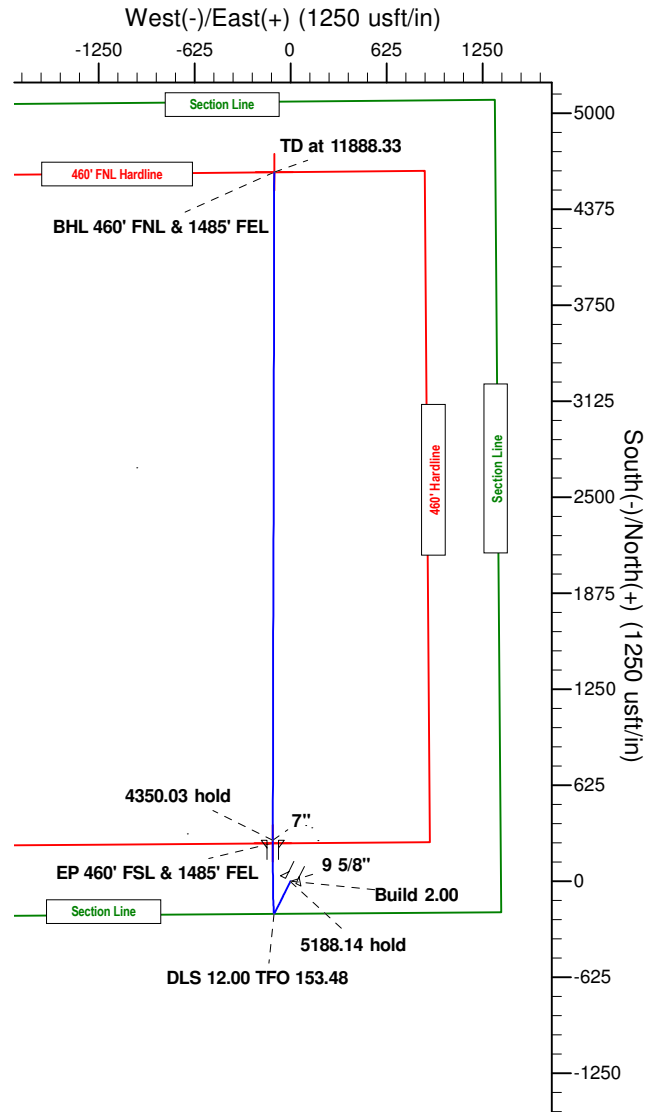
M Azimuths to True North
 Magnetic North: 8.33°
 Magnetic Field
 Strength: 52605.6snT
 Dip Angle: 66.66°
 Date: 09/12/2014
 Model: IGRF2010

CASING DETAILS:

TVD	MD	Name	Size
1250.00	1250.00	9 5/8"	9-5/8
7259.30	7538.30	7"	7



Vertical Section at 358.68° (1250 usft/in)



WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
BHL 460' FNL & 1485' FEL	7250.30	4615.37	-106.11	40° 2' 34.458 N	104° 38' 45.668 W	Shape
EP 460' FSL & 1485' FEL	7259.30	247.36	-115.65	40° 1' 51.290 N	104° 38' 45.791 W	Point

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1450.00	0.00	0.00	1450.00	0.00	0.00	0.00	0.00	0.00	Build 2.00
1579.81	2.60	206.62	1579.77	-2.63	-1.32	2.00	206.62	-2.60	5188.14 hold
6767.95	2.60	206.62	6762.58	-212.72	-106.63	0.00	0.00	-210.21	DLS 12.00 TFO 153.48
7538.30	90.12	0.13	7259.30	265.36	-115.65	12.00	153.48	267.95	4350.03 hold
11888.33	90.12	0.13	7250.30	4615.37	-106.11	0.00	0.00	4616.59	TD at 11888.33



Precision
Directional Services

Verdad Oil & Gas

Weld Co., CO

Sec.22-T1N-R65W

Drake 01N-65W-22-4N

Wellbore #1

Plan: Design #1

Standard Planning Report

12 September, 2014



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Drake 01N-65W-22-4N
Company:	Verdad Oil & Gas	TVD Reference:	WELL @ 5114.30usft (Original Well Elev)
Project:	Weld Co., CO	MD Reference:	WELL @ 5114.30usft (Original Well Elev)
Site:	Sec.22-T1N-R65W	North Reference:	True
Well:	Drake 01N-65W-22-4N	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project	Weld Co., CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	Sec.22-T1N-R65W				
Site Position:		Northing:	1,255,012.76 usft	Latitude:	40° 1' 48.846 N
From:	Lat/Long	Easting:	3,239,197.12 usft	Longitude:	104° 38' 44.884 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.55 °

Well	Drake 01N-65W-22-4N					
Well Position	+N/-S	-0.02 usft	Northing:	1,255,013.18 usft	Latitude:	40° 1' 48.846 N
	+E/-W	45.08 usft	Easting:	3,239,242.21 usft	Longitude:	104° 38' 44.304 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	5,090.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	09/12/14	8.33	66.66	52,606

Design	Design #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	358.68

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,450.00	0.00	0.00	1,450.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,579.81	2.60	206.62	1,579.77	-2.63	-1.32	2.00	2.00	0.00	206.62	
6,767.95	2.60	206.62	6,762.58	-212.72	-106.63	0.00	0.00	0.00	0.00	
7,538.30	90.12	0.13	7,259.30	265.36	-115.65	12.00	11.36	19.93	153.48	EP 460' FSL & 1485'
11,888.33	90.12	0.13	7,250.30	4,615.37	-106.11	0.00	0.00	0.00	0.00	BHL 460' FNL & 1485

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Drake 01N-65W-22-4N
Company:	Verdad Oil & Gas	TVD Reference:	WELL @ 5114.30usft (Original Well Elev)
Project:	Weld Co., CO	MD Reference:	WELL @ 5114.30usft (Original Well Elev)
Site:	Sec.22-T1N-R65W	North Reference:	True
Well:	Drake 01N-65W-22-4N	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned 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)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,450.00	0.00	0.00	1,450.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Build 2.00										
1,500.00	1.00	206.62	1,500.00	-0.39	-0.20	-0.39	2.00	2.00	0.00	0.00
1,579.81	2.60	206.62	1,579.77	-2.63	-1.32	-2.60	2.00	2.00	0.00	0.00
5188.14 hold										
1,600.00	2.60	206.62	1,599.93	-3.45	-1.73	-3.41	0.00	0.00	0.00	0.00
1,700.00	2.60	206.62	1,699.83	-7.50	-3.76	-7.41	0.00	0.00	0.00	0.00
1,800.00	2.60	206.62	1,799.73	-11.55	-5.79	-11.41	0.00	0.00	0.00	0.00
1,900.00	2.60	206.62	1,899.63	-15.59	-7.82	-15.41	0.00	0.00	0.00	0.00
2,000.00	2.60	206.62	1,999.52	-19.64	-9.85	-19.41	0.00	0.00	0.00	0.00
2,100.00	2.60	206.62	2,099.42	-23.69	-11.88	-23.41	0.00	0.00	0.00	0.00
2,200.00	2.60	206.62	2,199.32	-27.74	-13.91	-27.42	0.00	0.00	0.00	0.00
2,300.00	2.60	206.62	2,299.22	-31.79	-15.94	-31.42	0.00	0.00	0.00	0.00
2,400.00	2.60	206.62	2,399.11	-35.84	-17.97	-35.42	0.00	0.00	0.00	0.00
2,500.00	2.60	206.62	2,499.01	-39.89	-20.00	-39.42	0.00	0.00	0.00	0.00
2,600.00	2.60	206.62	2,598.91	-43.94	-22.03	-43.42	0.00	0.00	0.00	0.00
2,700.00	2.60	206.62	2,698.81	-47.99	-24.06	-47.42	0.00	0.00	0.00	0.00
2,800.00	2.60	206.62	2,798.70	-52.04	-26.09	-51.43	0.00	0.00	0.00	0.00
2,900.00	2.60	206.62	2,898.60	-56.09	-28.12	-55.43	0.00	0.00	0.00	0.00
3,000.00	2.60	206.62	2,998.50	-60.14	-30.15	-59.43	0.00	0.00	0.00	0.00
3,100.00	2.60	206.62	3,098.40	-64.19	-32.18	-63.43	0.00	0.00	0.00	0.00
3,200.00	2.60	206.62	3,198.29	-68.24	-34.21	-67.43	0.00	0.00	0.00	0.00
3,300.00	2.60	206.62	3,298.19	-72.29	-36.24	-71.44	0.00	0.00	0.00	0.00
3,400.00	2.60	206.62	3,398.09	-76.34	-38.26	-75.44	0.00	0.00	0.00	0.00
3,500.00	2.60	206.62	3,497.98	-80.39	-40.29	-79.44	0.00	0.00	0.00	0.00
3,600.00	2.60	206.62	3,597.88	-84.44	-42.32	-83.44	0.00	0.00	0.00	0.00
3,700.00	2.60	206.62	3,697.78	-88.49	-44.35	-87.44	0.00	0.00	0.00	0.00
3,800.00	2.60	206.62	3,797.68	-92.53	-46.38	-91.44	0.00	0.00	0.00	0.00
3,900.00	2.60	206.62	3,897.57	-96.58	-48.41	-95.45	0.00	0.00	0.00	0.00
4,000.00	2.60	206.62	3,997.47	-100.63	-50.44	-99.45	0.00	0.00	0.00	0.00
4,100.00	2.60	206.62	4,097.37	-104.68	-52.47	-103.45	0.00	0.00	0.00	0.00
4,200.00	2.60	206.62	4,197.27	-108.73	-54.50	-107.45	0.00	0.00	0.00	0.00
4,300.00	2.60	206.62	4,297.16	-112.78	-56.53	-111.45	0.00	0.00	0.00	0.00
4,400.00	2.60	206.62	4,397.06	-116.83	-58.56	-115.45	0.00	0.00	0.00	0.00
4,500.00	2.60	206.62	4,496.96	-120.88	-60.59	-119.46	0.00	0.00	0.00	0.00
4,600.00	2.60	206.62	4,596.86	-124.93	-62.62	-123.46	0.00	0.00	0.00	0.00
4,700.00	2.60	206.62	4,696.75	-128.98	-64.65	-127.46	0.00	0.00	0.00	0.00
4,800.00	2.60	206.62	4,796.65	-133.03	-66.68	-131.46	0.00	0.00	0.00	0.00
4,900.00	2.60	206.62	4,896.55	-137.08	-68.71	-135.46	0.00	0.00	0.00	0.00

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Project:	Weld Co., CO	MD Reference:	WELL @ 5114.30usft (Original Well Elev)
Site:	Sec.22-T1N-R65W	North Reference:	True
Well:	Drake 01N-65W-22-4N	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned 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)	
5,000.00	2.60	206.62	4,996.45	-141.13	-70.74	-139.47	0.00	0.00	0.00	
5,100.00	2.60	206.62	5,096.34	-145.18	-72.77	-143.47	0.00	0.00	0.00	
5,200.00	2.60	206.62	5,196.24	-149.23	-74.80	-147.47	0.00	0.00	0.00	
5,300.00	2.60	206.62	5,296.14	-153.28	-76.83	-151.47	0.00	0.00	0.00	
5,400.00	2.60	206.62	5,396.03	-157.33	-78.86	-155.47	0.00	0.00	0.00	
5,500.00	2.60	206.62	5,495.93	-161.38	-80.89	-159.47	0.00	0.00	0.00	
5,600.00	2.60	206.62	5,595.83	-165.43	-82.92	-163.48	0.00	0.00	0.00	
5,700.00	2.60	206.62	5,695.73	-169.47	-84.95	-167.48	0.00	0.00	0.00	
5,800.00	2.60	206.62	5,795.62	-173.52	-86.98	-171.48	0.00	0.00	0.00	
5,900.00	2.60	206.62	5,895.52	-177.57	-89.01	-175.48	0.00	0.00	0.00	
6,000.00	2.60	206.62	5,995.42	-181.62	-91.04	-179.48	0.00	0.00	0.00	
6,100.00	2.60	206.62	6,095.32	-185.67	-93.07	-183.48	0.00	0.00	0.00	
6,200.00	2.60	206.62	6,195.21	-189.72	-95.10	-187.49	0.00	0.00	0.00	
6,300.00	2.60	206.62	6,295.11	-193.77	-97.13	-191.49	0.00	0.00	0.00	
6,400.00	2.60	206.62	6,395.01	-197.82	-99.16	-195.49	0.00	0.00	0.00	
6,500.00	2.60	206.62	6,494.91	-201.87	-101.19	-199.49	0.00	0.00	0.00	
6,600.00	2.60	206.62	6,594.80	-205.92	-103.22	-203.49	0.00	0.00	0.00	
6,700.00	2.60	206.62	6,694.70	-209.97	-105.25	-207.49	0.00	0.00	0.00	
6,767.95	2.60	206.62	6,762.58	-212.72	-106.63	-210.21	0.00	0.00	0.00	
DLS 12.00 TFO 153.48										
6,775.00	1.88	218.23	6,769.62	-212.95	-106.77	-210.44	12.00	-10.19	164.65	
6,800.00	1.91	322.85	6,794.62	-212.94	-107.28	-210.42	12.00	0.14	418.49	
6,825.00	4.67	345.78	6,819.57	-211.62	-107.78	-209.09	12.00	11.02	91.72	
6,850.00	7.61	351.41	6,844.43	-209.00	-108.28	-206.46	12.00	11.77	22.55	
6,875.00	10.59	353.91	6,869.11	-205.08	-108.77	-202.53	12.00	11.90	9.98	
6,900.00	13.57	355.32	6,893.55	-199.87	-109.25	-197.31	12.00	11.94	5.63	
6,925.00	16.56	356.22	6,917.69	-193.39	-109.73	-190.82	12.00	11.96	3.63	
6,950.00	19.56	356.86	6,941.46	-185.66	-110.19	-183.07	12.00	11.97	2.54	
6,975.00	22.55	357.33	6,964.79	-176.69	-110.64	-174.10	12.00	11.98	1.89	
7,000.00	25.55	357.70	6,987.61	-166.51	-111.08	-163.91	12.00	11.99	1.47	
7,025.00	28.54	357.99	7,009.88	-155.15	-111.51	-152.55	12.00	11.99	1.18	
7,050.00	31.54	358.23	7,031.52	-142.65	-111.92	-140.04	12.00	11.99	0.97	
7,075.00	34.54	358.44	7,052.47	-129.02	-112.31	-126.41	12.00	11.99	0.82	
7,100.00	37.54	358.61	7,072.69	-114.32	-112.69	-111.70	12.00	11.99	0.70	
7,125.00	40.54	358.77	7,092.10	-98.58	-113.05	-95.96	12.00	11.99	0.61	
7,150.00	43.53	358.90	7,110.67	-81.85	-113.39	-79.22	12.00	11.99	0.54	
7,175.00	46.53	359.02	7,128.33	-64.16	-113.71	-61.53	12.00	12.00	0.49	
7,200.00	49.53	359.13	7,145.05	-45.58	-114.01	-42.95	12.00	12.00	0.44	
7,225.00	52.53	359.23	7,160.77	-26.15	-114.28	-23.51	12.00	12.00	0.40	
7,250.00	55.53	359.33	7,175.45	-5.92	-114.54	-3.28	12.00	12.00	0.37	
7,275.00	58.53	359.41	7,189.05	15.05	-114.77	17.69	12.00	12.00	0.35	
7,300.00	61.53	359.49	7,201.54	36.71	-114.97	39.34	12.00	12.00	0.32	
7,325.00	64.53	359.57	7,212.88	58.99	-115.16	61.62	12.00	12.00	0.31	
7,350.00	67.53	359.64	7,223.04	81.83	-115.31	84.45	12.00	12.00	0.29	
7,375.00	70.53	359.71	7,231.98	105.17	-115.44	107.79	12.00	12.00	0.28	
7,400.00	73.53	359.78	7,239.70	128.94	-115.55	131.56	12.00	12.00	0.27	
7,425.00	76.53	359.85	7,246.16	153.09	-115.63	155.71	12.00	12.00	0.26	
7,450.00	79.52	359.91	7,251.34	177.54	-115.68	180.16	12.00	12.00	0.25	
7,475.00	82.52	359.97	7,255.24	202.24	-115.70	204.84	12.00	12.00	0.25	
7,500.00	85.52	0.03	7,257.84	227.10	-115.70	229.70	12.00	12.00	0.25	
7,525.00	88.52	0.09	7,259.14	252.06	-115.68	254.65	12.00	12.00	0.24	
7,538.30	90.12	0.13	7,259.30	265.36	-115.65	267.95	12.00	12.00	0.24	
4350.03 hold										
7,600.00	90.12	0.13	7,259.17	327.06	-115.52	329.63	0.00	0.00	0.00	

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Project:	Weld Co., CO	MD Reference:	WELL @ 5114.30usft (Original Well Elev)
Site:	Sec.22-T1N-R65W	North Reference:	True
Well:	Drake 01N-65W-22-4N	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned 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)
7,700.00	90.12	0.13	7,258.97	427.06	-115.30	429.60	0.00	0.00	0.00
7,800.00	90.12	0.13	7,258.76	527.06	-115.08	529.56	0.00	0.00	0.00
7,900.00	90.12	0.13	7,258.55	627.06	-114.86	629.53	0.00	0.00	0.00
8,000.00	90.12	0.13	7,258.34	727.06	-114.64	729.50	0.00	0.00	0.00
8,100.00	90.12	0.13	7,258.14	827.06	-114.42	829.47	0.00	0.00	0.00
8,200.00	90.12	0.13	7,257.93	927.06	-114.20	929.44	0.00	0.00	0.00
8,300.00	90.12	0.13	7,257.72	1,027.06	-113.98	1,029.40	0.00	0.00	0.00
8,400.00	90.12	0.13	7,257.52	1,127.05	-113.76	1,129.37	0.00	0.00	0.00
8,500.00	90.12	0.13	7,257.31	1,227.05	-113.54	1,229.34	0.00	0.00	0.00
8,600.00	90.12	0.13	7,257.10	1,327.05	-113.32	1,329.31	0.00	0.00	0.00
8,700.00	90.12	0.13	7,256.90	1,427.05	-113.10	1,429.28	0.00	0.00	0.00
8,800.00	90.12	0.13	7,256.69	1,527.05	-112.88	1,529.24	0.00	0.00	0.00
8,900.00	90.12	0.13	7,256.48	1,627.05	-112.66	1,629.21	0.00	0.00	0.00
9,000.00	90.12	0.13	7,256.28	1,727.05	-112.45	1,729.18	0.00	0.00	0.00
9,100.00	90.12	0.13	7,256.07	1,827.05	-112.23	1,829.15	0.00	0.00	0.00
9,200.00	90.12	0.13	7,255.86	1,927.05	-112.01	1,929.12	0.00	0.00	0.00
9,300.00	90.12	0.13	7,255.66	2,027.05	-111.79	2,029.08	0.00	0.00	0.00
9,400.00	90.12	0.13	7,255.45	2,127.05	-111.57	2,129.05	0.00	0.00	0.00
9,500.00	90.12	0.13	7,255.24	2,227.05	-111.35	2,229.02	0.00	0.00	0.00
9,600.00	90.12	0.13	7,255.03	2,327.05	-111.13	2,328.99	0.00	0.00	0.00
9,700.00	90.12	0.13	7,254.83	2,427.05	-110.91	2,428.96	0.00	0.00	0.00
9,800.00	90.12	0.13	7,254.62	2,527.05	-110.69	2,528.93	0.00	0.00	0.00
9,900.00	90.12	0.13	7,254.41	2,627.05	-110.47	2,628.89	0.00	0.00	0.00
10,000.00	90.12	0.13	7,254.21	2,727.05	-110.25	2,728.86	0.00	0.00	0.00
10,100.00	90.12	0.13	7,254.00	2,827.05	-110.03	2,828.83	0.00	0.00	0.00
10,200.00	90.12	0.13	7,253.79	2,927.05	-109.81	2,928.80	0.00	0.00	0.00
10,300.00	90.12	0.13	7,253.59	3,027.05	-109.59	3,028.77	0.00	0.00	0.00
10,400.00	90.12	0.13	7,253.38	3,127.05	-109.38	3,128.73	0.00	0.00	0.00
10,500.00	90.12	0.13	7,253.17	3,227.05	-109.16	3,228.70	0.00	0.00	0.00
10,600.00	90.12	0.13	7,252.97	3,327.04	-108.94	3,328.67	0.00	0.00	0.00
10,700.00	90.12	0.13	7,252.76	3,427.04	-108.72	3,428.64	0.00	0.00	0.00
10,800.00	90.12	0.13	7,252.55	3,527.04	-108.50	3,528.61	0.00	0.00	0.00
10,900.00	90.12	0.13	7,252.34	3,627.04	-108.28	3,628.57	0.00	0.00	0.00
11,000.00	90.12	0.13	7,252.14	3,727.04	-108.06	3,728.54	0.00	0.00	0.00
11,100.00	90.12	0.13	7,251.93	3,827.04	-107.84	3,828.51	0.00	0.00	0.00
11,200.00	90.12	0.13	7,251.72	3,927.04	-107.62	3,928.48	0.00	0.00	0.00
11,300.00	90.12	0.13	7,251.52	4,027.04	-107.40	4,028.45	0.00	0.00	0.00
11,400.00	90.12	0.13	7,251.31	4,127.04	-107.18	4,128.41	0.00	0.00	0.00
11,500.00	90.12	0.13	7,251.10	4,227.04	-106.96	4,228.38	0.00	0.00	0.00
11,600.00	90.12	0.13	7,250.90	4,327.04	-106.74	4,328.35	0.00	0.00	0.00
11,700.00	90.12	0.13	7,250.69	4,427.04	-106.52	4,428.32	0.00	0.00	0.00
11,800.00	90.12	0.13	7,250.48	4,527.04	-106.31	4,528.29	0.00	0.00	0.00
11,888.33	90.12	0.13	7,250.30	4,615.37	-106.11	4,616.59	0.00	0.00	0.00
TD at 11888.33									

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Drake 01N-65W-22-4N
Company:	Verdad Oil & Gas	TVD Reference:	WELL @ 5114.30usft (Original Well Elev)
Project:	Weld Co., CO	MD Reference:	WELL @ 5114.30usft (Original Well Elev)
Site:	Sec.22-T1N-R65W	North Reference:	True
Well:	Drake 01N-65W-22-4N	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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										
BHL 460' FNL & 1485' F - plan hits target center - Point	0.00	0.00	7,250.30	4,615.37	-106.11	1,259,627.31	3,239,091.63	40° 2' 34.458 N	104° 38' 45.668 W	
EP 460' FSL & 1485' FE - plan misses target center by 0.30usft at 7520.31usft MD (7259.00 TVD, 247.38 N, -115.68 E) - Point	0.00	0.00	7,259.30	247.36	-115.65	1,255,259.41	3,239,124.18	40° 1' 51.290 N	104° 38' 45.791 W	

Casing Points					
Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter	
(usft)	(usft)		(")	(")	
1,250.00	1,250.00	9 5/8"	9-5/8	12-1/4	
7,538.30	7,259.30	7"	7	7-1/2	

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(usft)	(usft)	+N/-S	+E/-W		
		(usft)	(usft)		
1,450.00	1,450.00	0.00	0.00	Build 2.00	
1,579.81	1,579.77	-2.63	-1.32	5188.14 hold	
6,767.95	6,762.58	-212.72	-106.63	DLS 12.00 TFO 153.48	
7,538.30	7,259.30	265.36	-115.65	4350.03 hold	
11,888.33	7,250.30	4,615.37	-106.11	TD at 11888.33	



Precision
Directional Services

Verdad Oil & Gas

Weld Co., CO
Sec.22-T1N-R65W
Drake 01N-65W-22-4N

Wellbore #1
Design #1

Anticollision Summary Report

12 September, 2014



Company:	Verdad Oil & Gas	Local Co-ordinate Reference:	Well Drake 01N-65W-22-4N
Project:	Weld Co., CO	TVD Reference:	WELL @ 5114.30usft (Original Well Elev)
Reference Site:	Sec.22-T1N-R65W	MD Reference:	WELL @ 5114.30usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Drake 01N-65W-22-4N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Reference	Design #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 9,999.98 usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

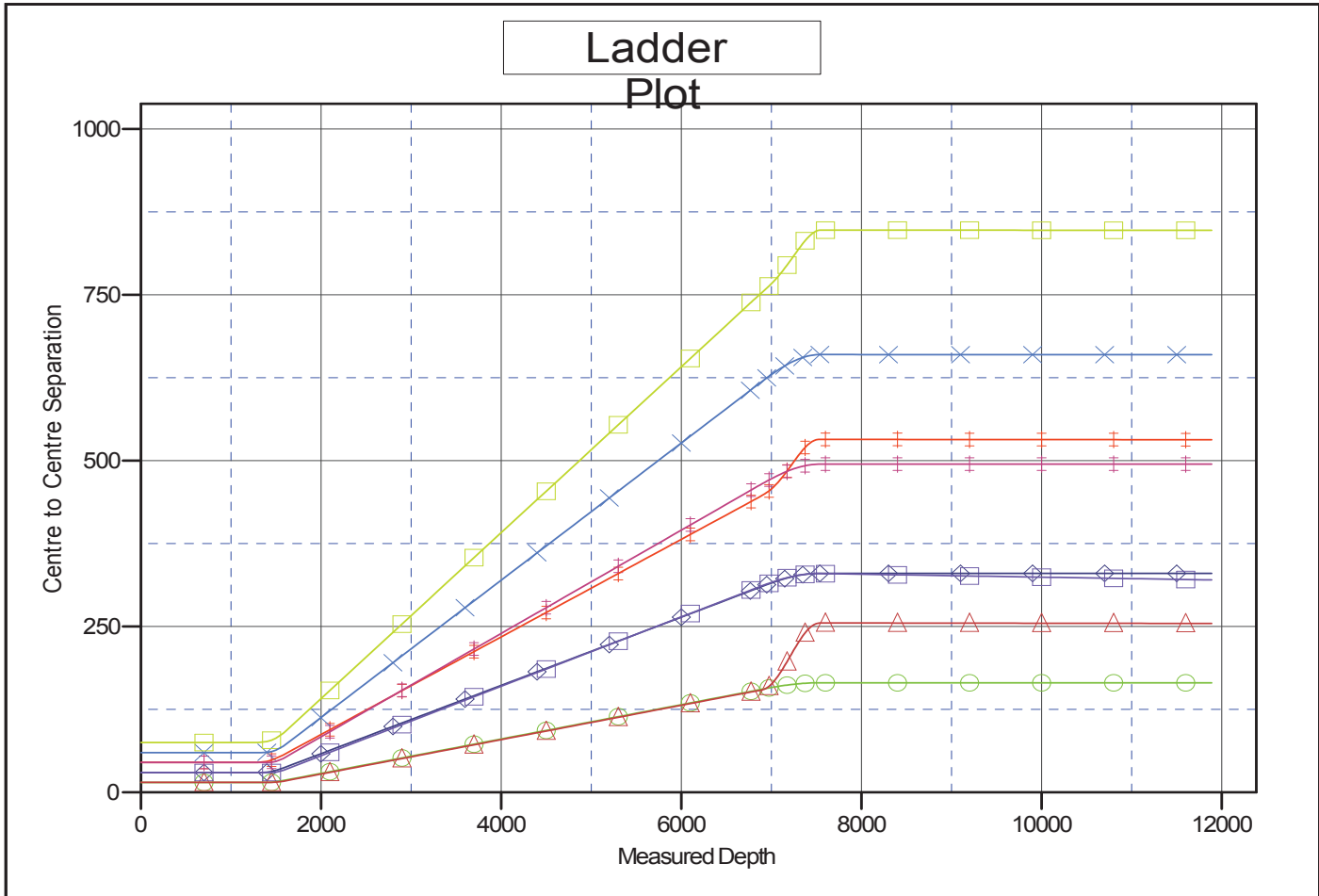
Survey Tool Program	Date	09/12/14		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	11,888.31	Design #1 (Wellbore #1)	MWD	Std MWD

Summary						
Site Name	Reference	Offset	Distance		Separation Factor	Warning
	Measured Depth (usft)	Measured Depth (usft)	Between Centres (usft)	Between Ellipses (usft)		
Offset Well - Wellbore - Design						
Sec.22-T1N-R65W						
Drake 01N-65W-22-1C - Wellbore #1 - Design #1	1,300.00	1,300.00	45.08	38.41	6.750	CC, ES
Drake 01N-65W-22-1C - Wellbore #1 - Design #1	1,400.00	1,398.53	46.68	39.48	6.484	SF
Drake 01N-65W-22-2N - Wellbore #1 - Design #1	1,333.46	1,333.46	29.96	23.11	4.371	CC, ES
Drake 01N-65W-22-2N - Wellbore #1 - Design #1	11,888.33	11,901.47	330.12	251.29	4.188	SF
Drake 01N-65W-22-3N - Wellbore #1 - Design #1	1,400.00	1,400.00	14.84	7.64	2.060	CC, ES
Drake 01N-65W-22-3N - Wellbore #1 - Design #1	1,450.00	1,449.80	15.17	7.71	2.032	SF
Drake 01N-65W-22-5C - Wellbore #1 - Design #1	1,450.00	1,450.00	15.12	7.66	2.026	CC
Drake 01N-65W-22-5C - Wellbore #1 - Design #1	1,500.00	1,500.00	15.32	7.60	1.983	ES, SF
Drake 01N-65W-22-6N - Wellbore #1 - Design #1	1,450.00	1,450.00	29.96	22.50	4.014	CC, ES
Drake 01N-65W-22-6N - Wellbore #1 - Design #1	1,500.00	1,499.67	30.43	22.70	3.939	SF
Drake 01N-65W-22-7N - Wellbore #1 - Design #1	1,400.00	1,400.00	45.08	37.88	6.259	CC, ES
Drake 01N-65W-22-7N - Wellbore #1 - Design #1	1,500.00	1,498.68	46.70	38.98	6.047	SF
Drake 01N-65W-22-8N - Wellbore #1 - Design #1	1,333.38	1,333.38	59.93	53.07	8.743	CC, ES
Drake 01N-65W-22-8N - Wellbore #1 - Design #1	1,500.00	1,497.08	63.62	55.90	8.241	SF
Drake 01N-65W-22-9C - Wellbore #1 - Design #1	1,300.00	1,300.00	75.05	68.37	11.235	CC, ES
Drake 01N-65W-22-9C - Wellbore #1 - Design #1	1,450.00	1,446.26	78.67	71.21	10.552	SF

Company:	Verdad Oil & Gas	Local Co-ordinate Reference:	Well Drake 01N-65W-22-4N
Project:	Weld Co., CO	TVD Reference:	WELL @ 5114.30usft (Original Well Elev)
Reference Site:	Sec.22-T1N-R65W	MD Reference:	WELL @ 5114.30usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Drake 01N-65W-22-4N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 5114.30usft (Original Well E
 Offset Depths are relative to Offset Datum
 Central Meridian is 105° 30' 0.000 W

Coordinates are relative to: Drake 01N-65W-22-4N
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: 0.55°



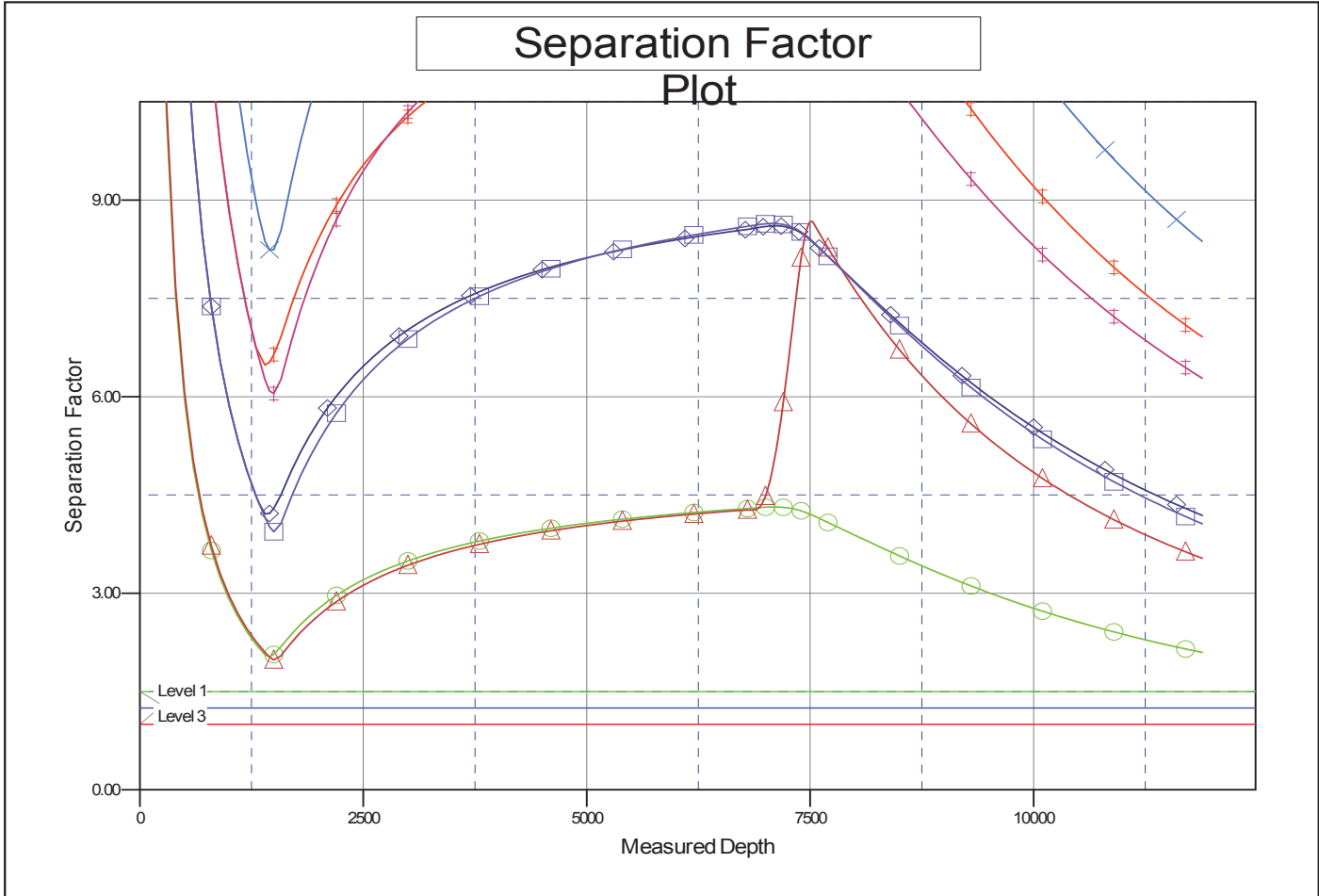
LEGEND

- ▲— Drake 01N-65W-22-1C, Wellbore #1, Design #1 V0
- ▲— Drake 01N-65W-22-5C, Wellbore #1, Design #1 V0
- X— Drake 01N-65W-22-8N, Wellbore #1, Design #1 V0
- ◆— Drake 01N-65W-22-2N, Wellbore #1, Design #1 V0
- Drake 01N-65W-22-6N, Wellbore #1, Design #1 V0
- Drake 01N-65W-22-9C, Wellbore #1, Design #1 V0
- Drake 01N-65W-22-3N, Wellbore #1, Design #1 V0
- ◆— Drake 01N-65W-22-7N, Wellbore #1, Design #1 V0

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Verdad Oil & Gas	Local Co-ordinate Reference:	Well Drake 01N-65W-22-4N
Project:	Weld Co., CO	TVD Reference:	WELL @ 5114.30usft (Original Well Elev)
Reference Site:	Sec.22-T1N-R65W	MD Reference:	WELL @ 5114.30usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Drake 01N-65W-22-4N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 5114.30usft (Original Well E) Coordinates are relative to: Drake 01N-65W-22-4N
 Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
 Central Meridian is 105° 30' 0.000 W Grid Convergence at Surface is: 0.55°



LEGEND

- ▲— Drake 01N-65W-22-1C, Wellbore #1, Design #1 V0
- ▲— Drake 01N-65W-22-5C, Wellbore #1, Design #1 V0
- X— Drake 01N-65W-22-8N, Wellbore #1, Design #1 V0
- ◆— Drake 01N-65W-22-2N, Wellbore #1, Design #1 V0
- Drake 01N-65W-22-6N, Wellbore #1, Design #1 V0
- Drake 01N-65W-22-9C, Wellbore #1, Design #1 V0
- Drake 01N-65W-22-3N, Wellbore #1, Design #1 V0
- ◆— Drake 01N-65W-22-7N, Wellbore #1, Design #1 V0