PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Guttersen 8T-201**

Surface Location: Guttersen 8T-HZ Pad Sec.8-T3N-R63W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4885.0

+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.0	0.0	1329717.35	3291233.73	40.233770	-104.456850	

RKB - 15' WELL @ 4900.0ft (RKB - 15')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 338'FSL & 1324'FEL	1.0	0.0	0.0	Point
BHL 500'FNL & 1151'FEL	6673.0	4466.4	164.7	Point

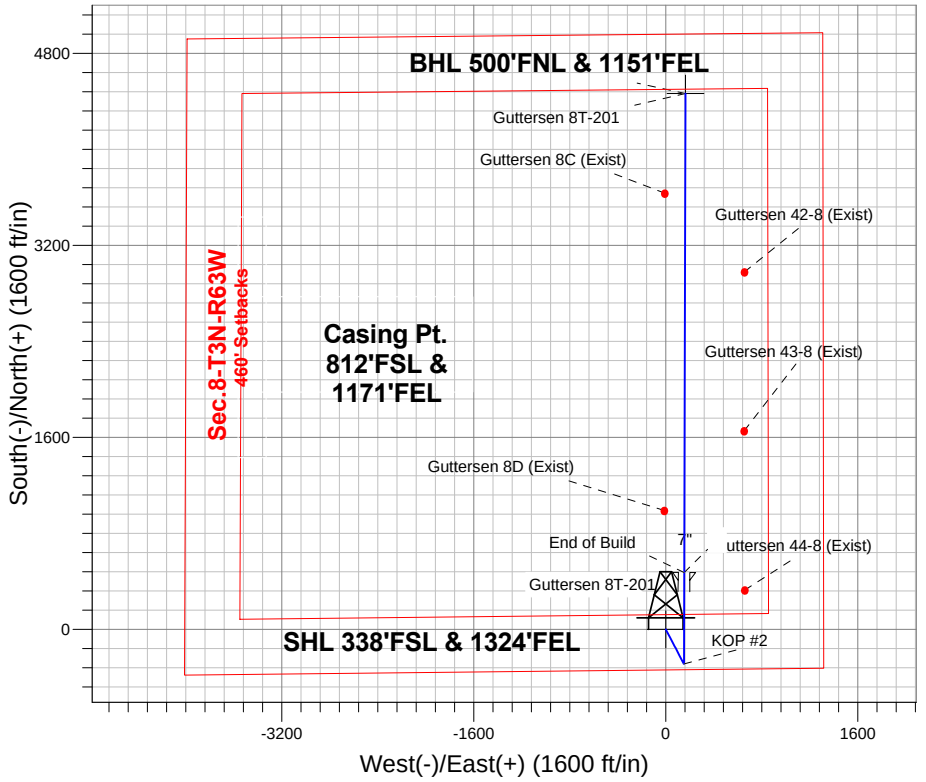
Azimuths to True North
Magnetic North: 8.33°

Magnetic Field
Strength: 52797.3snT
Dip Angle: 66.87°
Date: 2/5/2014
Model: IGRF2010

ANNOTATIONS

TVD	MD	Annotation
2000.0	2000.0	KOP #1
5899.3	5918.3	KOP #2
6663.2	7116.4	End of Build

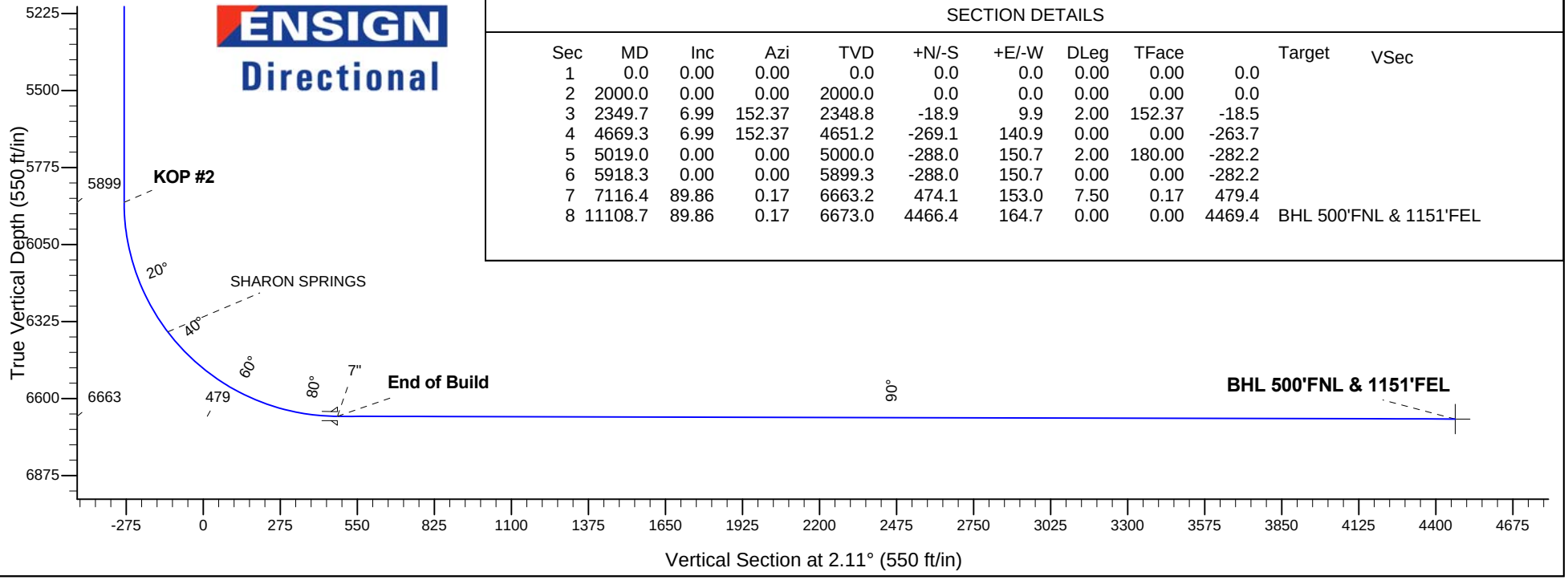
Guttersen 8T-HZ Pad Sec.8-T3N-R63W
Guttersen 8T-201
Plan #1 (2-05-14)
8:58, February 06 2014



ENSIGN Directional

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	2000.0	0.00	0.00	2000.0	0.0	0.0	0.00	0.00	0.0	
3	2349.7	6.99	152.37	2348.8	-18.9	9.9	2.00	152.37	-18.5	
4	4669.3	6.99	152.37	4651.2	-269.1	140.9	0.00	0.00	-263.7	
5	5019.0	0.00	0.00	5000.0	-288.0	150.7	2.00	180.00	-282.2	
6	5918.3	0.00	0.00	5899.3	-288.0	150.7	0.00	0.00	-282.2	
7	7116.4	89.86	0.17	6663.2	474.1	153.0	7.50	0.17	479.4	
8	11108.7	89.86	0.17	6673.0	4466.4	164.7	0.00	0.00	4469.4	BHL 500'FNL & 1151'FEL



ENSIGN Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.8-T3N-R63W
Guttersen 8T-HZ Pad Sec.8-T3N-R63W
Guttersen 8T-201

Wellbore #1

Plan: Plan #1 (2-05-14)

Standard Planning Report

06 February, 2014

PDC ENERGY
Growing E&P Value

Database:	Landmark	**Local Co-ordinate Reference:**	Well Guttersen 8T-201
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 4900.0ft (RKB - 15')
Project:	SEC.8-T3N-R63W	**MD Reference:**	WELL @ 4900.0ft (RKB - 15')
Site:	Guttersen 8T-HZ Pad Sec.8-T3N-R63W	**North Reference:**	True
Well:	Guttersen 8T-201	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (2-05-14)		

Project	SEC.8-T3N-R63W, Weld County, CO		
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	Guttersen 8T-HZ Pad Sec.8-T3N-R63W				
Site Position:		**Northing:**	1,329,659.24 ft	**Latitude:**	40.233610
From:	Lat/Long	**Easting:**	3,291,248.37 ft	**Longitude:**	-104.456800
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	0.67 °

Well	Guttersen 8T-201					
Well Position	**+N/-S**	58.3 ft	**Northing:**	1,329,717.35 ft	**Latitude:**	40.233770
	+E/-W	-14.0 ft	**Easting:**	3,291,233.73 ft	**Longitude:**	-104.456850
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,885.0 ft

Wellbore	Wellbore #1				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2010	2/5/2014	8.33	66.87	52,797

Design	Plan #1 (2-05-14)				
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	2.11	

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	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,349.7	6.99	152.37	2,348.8	-18.9	9.9	2.00	2.00	0.00	152.37	
4,669.3	6.99	152.37	4,651.2	-269.1	140.9	0.00	0.00	0.00	0.00	
5,019.0	0.00	0.00	5,000.0	-288.0	150.7	2.00	-2.00	0.00	180.00	
5,918.3	0.00	0.00	5,899.3	-288.0	150.7	0.00	0.00	0.00	0.00	
7,116.4	89.86	0.17	6,663.2	474.1	153.0	7.50	7.50	0.00	0.17	
11,108.7	89.86	0.17	6,673.0	4,466.4	164.7	0.00	0.00	0.00	0.00	BHL 500'FNL & 115

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Project:	SEC.8-T3N-R63W	**MD Reference:**	WELL @ 4900.0ft (RKB - 15')
Site:	Guttersen 8T-HZ Pad Sec.8-T3N-R63W	**North Reference:**	True
Well:	Guttersen 8T-201	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (2-05-14)		

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
1.0	0.00	0.00	1.0	0.0	0.0	0.0	0.00	0.00	0.00
SHL 279'FSL & 1310'FEL - SHL 338'FSL & 1324'FEL - SHL 250'FSL & 1304'FEL									
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
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP #1									
2,100.0	2.00	152.37	2,100.0	-1.5	0.8	-1.5	2.00	2.00	0.00
2,200.0	4.00	152.37	2,199.8	-6.2	3.2	-6.1	2.00	2.00	0.00
2,300.0	6.00	152.37	2,299.5	-13.9	7.3	-13.6	2.00	2.00	0.00
2,349.7	6.99	152.37	2,348.8	-18.9	9.9	-18.5	2.00	2.00	0.00
2,400.0	6.99	152.37	2,398.8	-24.3	12.7	-23.8	0.00	0.00	0.00
2,500.0	6.99	152.37	2,498.0	-35.1	18.4	-34.4	0.00	0.00	0.00
2,600.0	6.99	152.37	2,597.3	-45.9	24.0	-45.0	0.00	0.00	0.00
2,700.0	6.99	152.37	2,696.5	-56.7	29.7	-55.5	0.00	0.00	0.00
2,800.0	6.99	152.37	2,795.8	-67.5	35.3	-66.1	0.00	0.00	0.00
2,900.0	6.99	152.37	2,895.0	-78.3	41.0	-76.7	0.00	0.00	0.00
3,000.0	6.99	152.37	2,994.3	-89.0	46.6	-87.3	0.00	0.00	0.00
3,100.0	6.99	152.37	3,093.5	-99.8	52.3	-97.8	0.00	0.00	0.00
3,200.0	6.99	152.37	3,192.8	-110.6	57.9	-108.4	0.00	0.00	0.00
3,300.0	6.99	152.37	3,292.1	-121.4	63.5	-119.0	0.00	0.00	0.00
3,400.0	6.99	152.37	3,391.3	-132.2	69.2	-129.5	0.00	0.00	0.00
3,500.0	6.99	152.37	3,490.6	-143.0	74.8	-140.1	0.00	0.00	0.00
3,600.0	6.99	152.37	3,589.8	-153.8	80.5	-150.7	0.00	0.00	0.00
3,670.7	6.99	152.37	3,660.0	-161.4	84.5	-158.2	0.00	0.00	0.00
PARKMAN									
3,700.0	6.99	152.37	3,689.1	-164.6	86.1	-161.3	0.00	0.00	0.00
3,800.0	6.99	152.37	3,788.3	-175.3	91.8	-171.8	0.00	0.00	0.00
3,900.0	6.99	152.37	3,887.6	-186.1	97.4	-182.4	0.00	0.00	0.00
4,000.0	6.99	152.37	3,986.9	-196.9	103.1	-193.0	0.00	0.00	0.00
4,100.0	6.99	152.37	4,086.1	-207.7	108.7	-203.6	0.00	0.00	0.00
4,200.0	6.99	152.37	4,185.4	-218.5	114.4	-214.1	0.00	0.00	0.00
4,224.8	6.99	152.37	4,210.0	-221.2	115.8	-216.7	0.00	0.00	0.00
SUSSEX									
4,300.0	6.99	152.37	4,284.6	-229.3	120.0	-224.7	0.00	0.00	0.00
4,400.0	6.99	152.37	4,383.9	-240.1	125.7	-235.3	0.00	0.00	0.00

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Site:	Guttersen 8T-HZ Pad Sec.8-T3N-R63W	**North Reference:**	True
Well:	Guttersen 8T-201	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (2-05-14)		

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)
4,416.2	6.99	152.37	4,400.0	-241.8	126.6	-237.0	0.00	0.00	0.00
SHANNON									
4,500.0	6.99	152.37	4,483.1	-250.9	131.3	-245.8	0.00	0.00	0.00
4,600.0	6.99	152.37	4,582.4	-261.6	136.9	-256.4	0.00	0.00	0.00
4,669.3	6.99	152.37	4,651.2	-269.1	140.9	-263.7	0.00	0.00	0.00
4,700.0	6.38	152.37	4,681.7	-272.3	142.5	-266.8	2.00	-2.00	0.00
4,800.0	4.38	152.37	4,781.2	-280.6	146.9	-275.0	2.00	-2.00	0.00
4,900.0	2.38	152.37	4,881.0	-285.8	149.6	-280.1	2.00	-2.00	0.00
5,000.0	0.38	152.37	4,981.0	-287.9	150.7	-282.2	2.00	-2.00	0.00
5,019.0	0.00	0.00	5,000.0	-288.0	150.7	-282.2	2.00	-2.00	0.00
5,100.0	0.00	0.00	5,081.0	-288.0	150.7	-282.2	0.00	0.00	0.00
5,200.0	0.00	0.00	5,181.0	-288.0	150.7	-282.2	0.00	0.00	0.00
5,300.0	0.00	0.00	5,281.0	-288.0	150.7	-282.2	0.00	0.00	0.00
5,400.0	0.00	0.00	5,381.0	-288.0	150.7	-282.2	0.00	0.00	0.00
5,500.0	0.00	0.00	5,481.0	-288.0	150.7	-282.2	0.00	0.00	0.00
5,600.0	0.00	0.00	5,581.0	-288.0	150.7	-282.2	0.00	0.00	0.00
5,700.0	0.00	0.00	5,681.0	-288.0	150.7	-282.2	0.00	0.00	0.00
5,800.0	0.00	0.00	5,781.0	-288.0	150.7	-282.2	0.00	0.00	0.00
5,900.0	0.00	0.00	5,881.0	-288.0	150.7	-282.2	0.00	0.00	0.00
5,918.3	0.00	0.00	5,899.3	-288.0	150.7	-282.2	0.00	0.00	0.00
KOP #2									
6,000.0	6.13	0.17	5,980.9	-283.6	150.8	-277.9	7.50	7.50	0.00
6,100.0	13.63	0.17	6,079.3	-266.5	150.8	-260.8	7.50	7.50	0.00
6,200.0	21.13	0.17	6,174.7	-236.6	150.9	-230.9	7.50	7.50	0.00
6,300.0	28.63	0.17	6,265.3	-194.6	151.0	-188.9	7.50	7.50	0.00
6,400.0	36.13	0.17	6,349.7	-141.1	151.2	-135.4	7.50	7.50	0.00
6,415.3	37.28	0.17	6,362.0	-131.9	151.2	-126.3	7.50	7.50	0.00
SHARON SPRINGS									
6,500.0	43.63	0.17	6,426.4	-77.0	151.4	-71.4	7.50	7.50	0.00
6,600.0	51.13	0.17	6,494.1	-3.5	151.6	2.1	7.50	7.50	0.00
6,700.0	58.63	0.17	6,551.6	78.2	151.8	83.8	7.50	7.50	0.00
6,800.0	66.13	0.17	6,597.9	166.8	152.1	172.3	7.50	7.50	0.00
6,900.0	73.63	0.17	6,632.3	260.6	152.4	266.0	7.50	7.50	0.00
7,000.0	81.13	0.17	6,654.1	358.1	152.6	363.5	7.50	7.50	0.00
7,100.0	88.63	0.17	6,663.0	457.6	152.9	463.0	7.50	7.50	0.00
7,116.4	89.86	0.17	6,663.2	474.0	153.0	479.4	7.50	7.50	0.00
End of Build - 7"									
7,200.0	89.86	0.17	6,663.4	557.6	153.2	562.9	0.00	0.00	0.00
7,300.0	89.86	0.17	6,663.7	657.6	153.5	662.9	0.00	0.00	0.00
7,400.0	89.86	0.17	6,663.9	757.6	153.8	762.8	0.00	0.00	0.00
7,500.0	89.86	0.17	6,664.2	857.6	154.1	862.7	0.00	0.00	0.00
7,600.0	89.86	0.17	6,664.4	957.6	154.4	962.7	0.00	0.00	0.00
7,700.0	89.86	0.17	6,664.7	1,057.6	154.7	1,062.6	0.00	0.00	0.00
7,800.0	89.86	0.17	6,664.9	1,157.6	155.0	1,162.6	0.00	0.00	0.00
7,900.0	89.86	0.17	6,665.2	1,257.6	155.3	1,262.5	0.00	0.00	0.00
8,000.0	89.86	0.17	6,665.4	1,357.6	155.6	1,362.4	0.00	0.00	0.00
8,100.0	89.86	0.17	6,665.6	1,457.6	155.9	1,462.4	0.00	0.00	0.00
8,200.0	89.86	0.17	6,665.9	1,557.6	156.2	1,562.3	0.00	0.00	0.00
8,300.0	89.86	0.17	6,666.1	1,657.6	156.5	1,662.3	0.00	0.00	0.00
8,400.0	89.86	0.17	6,666.4	1,757.6	156.7	1,762.2	0.00	0.00	0.00
8,500.0	89.86	0.17	6,666.6	1,857.6	157.0	1,862.2	0.00	0.00	0.00
8,600.0	89.86	0.17	6,666.9	1,957.6	157.3	1,962.1	0.00	0.00	0.00

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Well:	Guttersen 8T-201	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (2-05-14)		

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)
8,700.0	89.86	0.17	6,667.1	2,057.6	157.6	2,062.0	0.00	0.00	0.00
8,800.0	89.86	0.17	6,667.4	2,157.6	157.9	2,162.0	0.00	0.00	0.00
8,900.0	89.86	0.17	6,667.6	2,257.6	158.2	2,261.9	0.00	0.00	0.00
9,000.0	89.86	0.17	6,667.8	2,357.6	158.5	2,361.9	0.00	0.00	0.00
9,100.0	89.86	0.17	6,668.1	2,457.6	158.8	2,461.8	0.00	0.00	0.00
9,200.0	89.86	0.17	6,668.3	2,557.6	159.1	2,561.8	0.00	0.00	0.00
9,300.0	89.86	0.17	6,668.6	2,657.6	159.4	2,661.7	0.00	0.00	0.00
9,400.0	89.86	0.17	6,668.8	2,757.6	159.7	2,761.6	0.00	0.00	0.00
9,500.0	89.86	0.17	6,669.1	2,857.6	160.0	2,861.6	0.00	0.00	0.00
9,600.0	89.86	0.17	6,669.3	2,957.6	160.3	2,961.5	0.00	0.00	0.00
9,700.0	89.86	0.17	6,669.6	3,057.6	160.6	3,061.5	0.00	0.00	0.00
9,800.0	89.86	0.17	6,669.8	3,157.6	160.9	3,161.4	0.00	0.00	0.00
9,900.0	89.86	0.17	6,670.0	3,257.6	161.2	3,261.3	0.00	0.00	0.00
10,000.0	89.86	0.17	6,670.3	3,357.6	161.4	3,361.3	0.00	0.00	0.00
10,100.0	89.86	0.17	6,670.5	3,457.6	161.7	3,461.2	0.00	0.00	0.00
10,200.0	89.86	0.17	6,670.8	3,557.6	162.0	3,561.2	0.00	0.00	0.00
10,300.0	89.86	0.17	6,671.0	3,657.6	162.3	3,661.1	0.00	0.00	0.00
10,400.0	89.86	0.17	6,671.3	3,757.6	162.6	3,761.1	0.00	0.00	0.00
10,500.0	89.86	0.17	6,671.5	3,857.6	162.9	3,861.0	0.00	0.00	0.00
10,600.0	89.86	0.17	6,671.8	3,957.6	163.2	3,960.9	0.00	0.00	0.00
10,700.0	89.86	0.17	6,672.0	4,057.6	163.5	4,060.9	0.00	0.00	0.00
10,800.0	89.86	0.17	6,672.2	4,157.6	163.8	4,160.8	0.00	0.00	0.00
10,900.0	89.86	0.17	6,672.5	4,257.6	164.1	4,260.8	0.00	0.00	0.00
11,000.0	89.86	0.17	6,672.7	4,357.6	164.4	4,360.7	0.00	0.00	0.00
11,100.0	89.86	0.17	6,673.0	4,457.6	164.7	4,460.7	0.00	0.00	0.00
11,108.7	89.86	0.17	6,673.0	4,466.4	164.7	4,469.4	0.00	0.00	0.00
BHL 500'FNL & 1151'FEL									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,116.4	6,663.2	7"	7	7-1/2

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,670.7	3,660.0	PARKMAN		0.00	
4,224.8	4,210.0	SUSSEX		0.00	
4,416.2	4,400.0	SHANNON		0.00	
6,415.3	6,362.0	SHARON SPRINGS		0.00	

Database:	Landmark	**Local Co-ordinate Reference:**	Well Guttersen 8T-201
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 4900.0ft (RKB - 15')
Project:	SEC.8-T3N-R63W	**MD Reference:**	WELL @ 4900.0ft (RKB - 15')
Site:	Guttersen 8T-HZ Pad Sec.8-T3N-R63W	**North Reference:**	True
Well:	Guttersen 8T-201	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (2-05-14)		

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
2,000.0	2,000.0	0.0	0.0	KOP #1
5,918.3	5,899.3	-288.0	150.7	KOP #2
7,116.4	6,663.2	474.0	153.0	End of Build

ENSIGN Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.8-T3N-R63W
Guttersen 8T-HZ Pad Sec.8-T3N-R63W
Guttersen 8T-201

Wellbore #1
Plan #1 (2-05-14)

Anticollision Report

06 February, 2014

PDC ENERGY
Growing E&P Value

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Guttersen 8T-201
Project:	SEC.8-T3N-R63W	**TVD Reference:**	WELL @ 4900.0ft (RKB - 15')
Reference Site:	Guttersen 8T-HZ Pad Sec.8-T3N-R63W	**MD Reference:**	WELL @ 4900.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 8T-201	**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 (2-05-14)	**Offset TVD Reference:**	Offset Datum

Reference Plan #1 (2-05-14)

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.0ft	**Error Surface:**	Elliptical Conic

Warning Levels Evaluated at: 2.00 **Sigma**

Survey Tool Program **Date** 2/6/2014

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,108.7	Plan #1 (2-05-14) (Wellbore #1)	MWD	MWD - Standard

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Existing Wells Sec.8-T3N-R63W						
Guttersen 42-8 (Exist) - Wellbore #1 - Wellbore #1	9,623.8	6,639.4	495.7	302.7	2.569	CC, ES, SF
Guttersen 43-8 (Exist) - Wellbore #1 - Wellbore #1	8,297.8	6,656.1	496.9	327.7	2.938	CC
Guttersen 43-8 (Exist) - Wellbore #1 - Wellbore #1	8,300.0	6,656.1	496.9	327.7	2.937	ES, SF
Guttersen 44-8 (Exist) - Wellbore #1 - Wellbore #1	6,970.8	6,649.0	506.4	357.1	3.393	CC, ES
Guttersen 44-8 (Exist) - Wellbore #1 - Wellbore #1	7,000.0	6,654.1	507.2	357.6	3.390	SF
Guttersen 8C (Exist) - Wellbore #1 - Wellbore #1	10,277.6	6,646.0	170.6	-34.7	0.831	Level 1, CC, ES, SF
Guttersen 8D (Exist) - Wellbore #1 - Wellbore #1	7,632.8	6,654.5	165.7	7.7	1.049	Level 2, CC, ES, SF
Guttersen 8T-HZ Pad Sec.8-T3N-R63W						
Guttersen 8Q-201 - Wellbore #1 - Plan #1 (2-05-14)	368.7	368.8	89.4	88.0	63.055	CC
Guttersen 8Q-201 - Wellbore #1 - Plan #1 (2-05-14)	400.0	400.0	89.5	87.9	57.441	ES
Guttersen 8Q-201 - Wellbore #1 - Plan #1 (2-05-14)	11,108.7	11,221.0	1,362.4	1,185.2	7.688	SF
Guttersen 8T-341 - Wellbore #1 - Plan #1 (2-05-14)	1,200.0	1,200.0	30.3	25.2	5.865	CC
Guttersen 8T-341 - Wellbore #1 - Plan #1 (2-05-14)	1,300.0	1,299.7	30.7	25.1	5.487	ES
Guttersen 8T-341 - Wellbore #1 - Plan #1 (2-05-14)	11,108.7	11,223.2	661.8	486.9	3.784	SF
Guttersen 8Y-441 - Wellbore #1 - Plan #1 (2-05-14)	400.0	400.0	59.9	58.4	38.092	CC, ES
Guttersen 8Y-441 - Wellbore #1 - Plan #1 (2-05-14)	11,108.7	11,360.0	815.9	643.7	4.738	SF

Offset Design Existing Wells Sec.8-T3N-R63W - Guttersen 42-8 (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7029-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	12.42	2,980.0	656.1	3,051.5				
100.0	100.0	70.0	70.0	0.1	1.4	12.42	2,980.0	656.1	3,051.4	3,049.9	1.51	2,017.322	
200.0	200.0	170.0	170.0	0.3	3.4	12.42	2,980.0	656.1	3,051.4	3,047.6	3.74	816.452	
300.0	300.0	270.0	270.0	0.6	5.4	12.42	2,980.0	656.1	3,051.4	3,045.4	5.96	511.793	
400.0	400.0	370.0	370.0	0.8	7.4	12.42	2,980.0	656.1	3,051.4	3,043.2	8.19	372.714	
500.0	500.0	470.0	470.0	1.0	9.4	12.42	2,980.0	656.1	3,051.4	3,041.0	10.41	293.073	
600.0	600.0	570.0	570.0	1.2	11.4	12.42	2,980.0	656.1	3,051.4	3,038.7	12.64	241.474	
700.0	700.0	670.0	670.0	1.5	13.4	12.42	2,980.0	656.1	3,051.4	3,036.5	14.86	205.325	
800.0	800.0	770.0	770.0	1.7	15.4	12.42	2,980.0	656.1	3,051.4	3,034.3	17.09	178.589	
900.0	900.0	870.0	870.0	1.9	17.4	12.42	2,980.0	656.1	3,051.4	3,032.1	19.31	158.014	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Guttersen 8T-201
Project:	SEC.8-T3N-R63W	**TVD Reference:**	WELL @ 4900.0ft (RKB - 15')
Reference Site:	Guttersen 8T-HZ Pad Sec.8-T3N-R63W	**MD Reference:**	WELL @ 4900.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 8T-201	**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 (2-05-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Sec.8-T3N-R63W - Guttersen 42-8 (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7029-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
1,000.0	1,000.0	970.0	970.0	2.1	19.4	12.42	2,980.0	656.1	3,051.4	3,029.8	21.54	141.690	
1,100.0	1,100.0	1,070.0	1,070.0	2.4	21.4	12.42	2,980.0	656.1	3,051.4	3,027.6	23.76	128.423	
1,200.0	1,200.0	1,170.0	1,170.0	2.6	23.4	12.42	2,980.0	656.1	3,051.4	3,025.4	25.98	117.428	
1,300.0	1,300.0	1,270.0	1,270.0	2.8	25.4	12.42	2,980.0	656.1	3,051.4	3,023.2	28.21	108.167	
1,400.0	1,400.0	1,370.0	1,370.0	3.0	27.4	12.42	2,980.0	656.1	3,051.4	3,020.9	30.43	100.260	
1,500.0	1,500.0	1,470.0	1,470.0	3.3	29.4	12.42	2,980.0	656.1	3,051.4	3,018.7	32.66	93.430	
1,600.0	1,600.0	1,570.0	1,570.0	3.5	31.4	12.42	2,980.0	656.1	3,051.4	3,016.5	34.88	87.472	
1,700.0	1,700.0	1,670.0	1,670.0	3.7	33.4	12.42	2,980.0	656.1	3,051.4	3,014.3	37.11	82.228	
1,800.0	1,800.0	1,770.0	1,770.0	3.9	35.4	12.42	2,980.0	656.1	3,051.4	3,012.0	39.33	77.577	
1,900.0	1,900.0	1,870.0	1,870.0	4.2	37.4	12.42	2,980.0	656.1	3,051.4	3,009.8	41.56	73.424	
2,000.0	2,000.0	1,970.0	1,970.0	4.4	39.4	12.42	2,980.0	656.1	3,051.4	3,007.6	43.78	69.693	
2,100.0	2,100.0	2,070.0	2,070.0	4.6	41.4	-139.96	2,980.0	656.1	3,052.7	3,006.7	45.96	66.415	
2,200.0	2,199.8	2,169.8	2,169.8	4.8	43.4	-139.97	2,980.0	656.1	3,056.7	3,008.6	48.09	63.569	
2,300.0	2,299.5	2,269.5	2,269.5	4.9	45.4	-139.99	2,980.0	656.1	3,063.4	3,013.2	50.17	61.062	
2,400.0	2,398.8	2,368.8	2,368.8	5.1	47.4	-140.07	2,980.0	656.1	3,072.4	3,020.1	52.28	58.770	
2,500.0	2,498.0	2,468.0	2,468.0	5.3	49.4	-140.22	2,980.0	656.1	3,081.8	3,027.3	54.45	56.596	
2,600.0	2,597.3	2,567.3	2,567.3	5.6	51.3	-140.36	2,980.0	656.1	3,091.2	3,034.6	56.63	54.582	
2,700.0	2,696.5	2,666.5	2,666.5	5.8	53.3	-140.51	2,980.0	656.1	3,100.6	3,041.8	58.82	52.714	
2,800.0	2,795.8	2,765.8	2,765.8	6.0	55.3	-140.65	2,980.0	656.1	3,110.0	3,049.0	61.01	50.975	
2,900.0	2,895.0	2,865.0	2,865.0	6.3	57.3	-140.79	2,980.0	656.1	3,119.5	3,056.3	63.21	49.353	
3,000.0	2,994.3	2,964.3	2,964.3	6.5	59.3	-140.93	2,980.0	656.1	3,129.0	3,063.6	65.41	47.838	
3,100.0	3,093.5	3,063.5	3,063.5	6.8	61.3	-141.07	2,980.0	656.1	3,138.5	3,070.8	67.61	46.419	
3,200.0	3,192.8	3,162.8	3,162.8	7.1	63.3	-141.21	2,980.0	656.1	3,148.0	3,078.1	69.82	45.088	
3,300.0	3,292.1	3,262.1	3,262.1	7.3	65.2	-141.35	2,980.0	656.1	3,157.5	3,085.5	72.03	43.837	
3,400.0	3,391.3	3,361.3	3,361.3	7.6	67.2	-141.48	2,980.0	656.1	3,167.0	3,092.8	74.24	42.659	
3,500.0	3,490.6	3,460.6	3,460.6	7.9	69.2	-141.62	2,980.0	656.1	3,176.6	3,100.1	76.45	41.549	
3,600.0	3,589.8	3,559.8	3,559.8	8.2	71.2	-141.76	2,980.0	656.1	3,186.2	3,107.5	78.67	40.500	
3,700.0	3,689.1	3,659.1	3,659.1	8.5	73.2	-141.89	2,980.0	656.1	3,195.8	3,114.9	80.89	39.508	
3,800.0	3,788.3	3,758.3	3,758.3	8.8	75.2	-142.03	2,980.0	656.1	3,205.4	3,122.3	83.11	38.569	
3,900.0	3,887.6	3,857.6	3,857.6	9.0	77.2	-142.16	2,980.0	656.1	3,215.0	3,129.7	85.33	37.678	
4,000.0	3,986.9	3,956.9	3,956.9	9.3	79.1	-142.29	2,980.0	656.1	3,224.7	3,137.1	87.55	36.832	
4,100.0	4,086.1	4,056.1	4,056.1	9.6	81.1	-142.42	2,980.0	656.1	3,234.4	3,144.6	89.78	36.027	
4,200.0	4,185.4	4,155.4	4,155.4	9.9	83.1	-142.55	2,980.0	656.1	3,244.0	3,152.0	92.00	35.262	
4,300.0	4,284.6	4,254.6	4,254.6	10.2	85.1	-142.68	2,980.0	656.1	3,253.7	3,159.5	94.22	34.532	
4,400.0	4,383.9	4,353.9	4,353.9	10.5	87.1	-142.81	2,980.0	656.1	3,263.5	3,167.0	96.45	33.836	
4,500.0	4,483.1	4,453.1	4,453.1	10.8	89.1	-142.94	2,980.0	656.1	3,273.2	3,174.5	98.68	33.171	
4,600.0	4,582.4	4,552.4	4,552.4	11.1	91.0	-143.07	2,980.0	656.1	3,282.9	3,182.0	100.90	32.535	
4,700.0	4,681.7	4,651.7	4,651.7	11.4	93.0	-143.23	2,980.0	656.1	3,292.6	3,189.4	103.20	31.904	
4,800.0	4,781.2	4,751.2	4,751.2	11.7	95.0	-143.42	2,980.0	656.1	3,300.1	3,194.5	105.61	31.249	
4,900.0	4,881.0	4,851.0	4,851.0	11.9	97.0	-143.53	2,980.0	656.1	3,304.8	3,196.9	107.94	30.619	
5,000.0	4,981.0	4,951.0	4,951.0	12.1	99.0	-143.58	2,980.0	656.1	3,306.8	3,196.6	110.18	30.013	
5,100.0	5,081.0	5,051.0	5,051.0	12.3	101.0	8.79	2,980.0	656.1	3,306.8	3,194.5	112.37	29.429	
5,200.0	5,181.0	5,151.0	5,151.0	12.4	103.0	8.79	2,980.0	656.1	3,306.8	3,192.3	114.56	28.865	
5,300.0	5,281.0	5,251.0	5,251.0	12.6	105.0	8.79	2,980.0	656.1	3,306.8	3,190.1	116.76	28.322	
5,400.0	5,381.0	5,351.0	5,351.0	12.8	107.0	8.79	2,980.0	656.1	3,306.8	3,187.9	118.96	27.799	
5,500.0	5,481.0	5,451.0	5,451.0	13.0	109.0	8.79	2,980.0	656.1	3,306.8	3,185.7	121.15	27.295	
5,600.0	5,581.0	5,551.0	5,551.0	13.2	111.0	8.79	2,980.0	656.1	3,306.8	3,183.5	123.35	26.808	
5,700.0	5,681.0	5,651.0	5,651.0	13.4	113.0	8.79	2,980.0	656.1	3,306.8	3,181.3	125.55	26.338	
5,800.0	5,781.0	5,751.0	5,751.0	13.5	115.0	8.79	2,980.0	656.1	3,306.8	3,179.1	127.75	25.884	
5,900.0	5,881.0	5,851.0	5,851.0	13.7	117.0	8.79	2,980.0	656.1	3,306.8	3,176.9	129.96	25.446	
6,000.0	5,980.9	5,950.9	5,950.9	13.9	119.0	8.68	2,980.0	656.1	3,302.5	3,171.1	131.39	25.136	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Guttersen 8T-201
Project:	SEC.8-T3N-R63W	**TVD Reference:**	WELL @ 4900.0ft (RKB - 15')
Reference Site:	Guttersen 8T-HZ Pad Sec.8-T3N-R63W	**MD Reference:**	WELL @ 4900.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 8T-201	**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 (2-05-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Sec.8-T3N-R63W - Guttersen 42-8 (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7029-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
6,100.0	6,079.3	6,049.3	6,049.3	14.0	121.0	8.93	2,980.0	656.1	3,285.6	3,155.0	130.60	25.158	
6,200.0	6,174.7	6,144.7	6,144.7	14.0	122.9	9.38	2,980.0	656.1	3,256.1	3,128.6	127.51	25.536	
6,300.0	6,265.3	6,235.3	6,235.3	14.1	124.7	10.08	2,980.0	656.1	3,214.5	3,092.4	122.17	26.312	
6,400.0	6,349.7	6,319.7	6,319.7	14.1	126.4	11.12	2,980.0	656.1	3,161.7	3,046.9	114.74	27.554	
6,500.0	6,426.4	6,396.4	6,396.4	14.1	127.9	12.62	2,980.0	656.1	3,098.4	2,992.8	105.61	29.340	
6,600.0	6,494.1	6,464.1	6,464.1	14.2	129.3	14.82	2,980.0	656.1	3,025.8	2,930.3	95.54	31.672	
6,700.0	6,551.6	6,521.6	6,521.6	14.4	130.4	18.16	2,980.0	656.1	2,945.3	2,859.0	86.25	34.147	
6,800.0	6,597.9	6,567.9	6,567.9	14.9	131.4	23.52	2,980.0	656.1	2,858.0	2,776.4	81.63	35.012	
6,900.0	6,632.3	6,602.3	6,602.3	15.7	132.0	32.88	2,980.0	656.1	2,765.7	2,676.3	89.32	30.962	
7,000.0	6,654.1	6,624.1	6,624.1	16.5	132.5	50.78	2,980.0	656.1	2,669.8	2,552.3	117.44	22.733	
7,100.0	6,663.0	6,633.0	6,633.0	17.6	132.7	83.05	2,980.0	656.1	2,572.0	2,422.8	149.20	17.239	
7,200.0	6,663.4	6,633.4	6,633.4	18.8	132.7	89.32	2,980.0	656.1	2,474.0	2,322.6	151.38	16.343	
7,300.0	6,663.7	6,633.7	6,633.7	20.0	132.7	89.34	2,980.0	656.1	2,376.1	2,223.4	152.67	15.564	
7,400.0	6,663.9	6,633.9	6,633.9	21.4	132.7	89.37	2,980.0	656.1	2,278.4	2,124.4	154.05	14.790	
7,500.0	6,664.2	6,634.2	6,634.2	22.9	132.7	89.40	2,980.0	656.1	2,180.9	2,025.4	155.51	14.024	
7,600.0	6,664.4	6,634.4	6,634.4	24.4	132.7	89.43	2,980.0	656.1	2,083.7	1,926.6	157.03	13.269	
7,700.0	6,664.7	6,634.7	6,634.7	26.0	132.7	89.46	2,980.0	656.1	1,986.7	1,828.1	158.61	12.526	
7,800.0	6,664.9	6,634.9	6,634.9	27.6	132.7	89.48	2,980.0	656.1	1,890.0	1,729.8	160.23	11.796	
7,900.0	6,665.2	6,635.2	6,635.2	29.2	132.7	89.51	2,980.0	656.1	1,793.7	1,631.8	161.89	11.080	
8,000.0	6,665.4	6,635.4	6,635.4	30.9	132.7	89.54	2,980.0	656.1	1,697.8	1,534.2	163.57	10.379	
8,100.0	6,665.6	6,635.6	6,635.6	32.6	132.7	89.57	2,980.0	656.1	1,602.4	1,437.1	165.29	9.695	
8,200.0	6,665.9	6,635.9	6,635.9	34.4	132.7	89.60	2,980.0	656.1	1,507.7	1,340.6	167.02	9.027	
8,300.0	6,666.1	6,636.1	6,636.1	36.1	132.7	89.63	2,980.0	656.1	1,413.6	1,244.8	168.78	8.375	
8,400.0	6,666.4	6,636.4	6,636.4	37.9	132.7	89.65	2,980.0	656.1	1,320.4	1,149.9	170.55	7.742	
8,500.0	6,666.6	6,636.6	6,636.6	39.6	132.7	89.68	2,980.0	656.1	1,228.3	1,056.0	172.33	7.127	
8,600.0	6,666.9	6,636.9	6,636.9	41.4	132.7	89.71	2,980.0	656.1	1,137.5	963.4	174.13	6.533	
8,700.0	6,667.1	6,637.1	6,637.1	43.2	132.7	89.74	2,980.0	656.1	1,048.4	872.5	175.94	5.959	
8,800.0	6,667.4	6,637.4	6,637.4	45.0	132.7	89.77	2,980.0	656.1	961.5	783.7	177.76	5.409	
8,900.0	6,667.6	6,637.6	6,637.6	46.9	132.8	89.80	2,980.0	656.1	877.3	697.7	179.58	4.885	
9,000.0	6,667.8	6,637.8	6,637.8	48.7	132.8	89.82	2,980.0	656.1	796.8	615.4	181.42	4.392	
9,100.0	6,668.1	6,638.1	6,638.1	50.5	132.8	89.85	2,980.0	656.1	721.2	537.9	183.26	3.935	
9,200.0	6,668.3	6,638.3	6,638.3	52.4	132.8	89.88	2,980.0	656.1	652.2	467.1	185.10	3.523	
9,300.0	6,668.6	6,638.6	6,638.6	54.2	132.8	89.91	2,980.0	656.1	592.1	405.2	186.95	3.167	
9,400.0	6,668.8	6,638.8	6,638.8	56.1	132.8	89.94	2,980.0	656.1	543.9	355.1	188.81	2.881	
9,500.0	6,669.1	6,639.1	6,639.1	57.9	132.8	89.97	2,980.0	656.1	510.9	320.3	190.67	2.680	
9,600.0	6,669.3	6,639.3	6,639.3	59.8	132.8	89.99	2,980.0	656.1	496.3	303.8	192.53	2.578	
9,623.8	6,669.4	6,639.4	6,639.4	60.2	132.8	90.00	2,980.0	656.1	495.7	302.7	192.98	2.569	CC, ES, SF
9,700.0	6,669.6	6,639.6	6,639.6	61.6	132.8	90.02	2,980.0	656.1	501.5	307.1	194.40	2.580	
9,800.0	6,669.8	6,639.8	6,639.8	63.5	132.8	90.05	2,980.0	656.1	526.1	329.8	196.27	2.680	
9,900.0	6,670.0	6,640.0	6,640.0	65.4	132.8	90.08	2,980.0	656.1	567.5	369.3	198.15	2.864	
10,000.0	6,670.3	6,640.3	6,640.3	67.2	132.8	90.11	2,980.0	656.1	622.3	422.3	200.02	3.111	
10,100.0	6,670.5	6,640.5	6,640.5	69.1	132.8	90.13	2,980.0	656.1	687.4	485.5	201.90	3.404	
10,200.0	6,670.8	6,640.8	6,640.8	71.0	132.8	90.16	2,980.0	656.1	760.1	556.3	203.78	3.730	
10,300.0	6,671.0	6,641.0	6,641.0	72.9	132.8	90.19	2,980.0	656.1	838.4	632.7	205.66	4.077	
10,400.0	6,671.3	6,641.3	6,641.3	74.8	132.8	90.22	2,980.0	656.1	921.0	713.4	207.55	4.437	
10,500.0	6,671.5	6,641.5	6,641.5	76.6	132.8	90.25	2,980.0	656.1	1,006.7	797.2	209.44	4.807	
10,600.0	6,671.8	6,641.8	6,641.8	78.5	132.8	90.28	2,980.0	656.1	1,094.8	883.5	211.33	5.181	
10,700.0	6,672.0	6,642.0	6,642.0	80.4	132.8	90.30	2,980.0	656.1	1,184.8	971.6	213.22	5.557	
10,800.0	6,672.2	6,642.2	6,642.2	82.3	132.8	90.33	2,980.0	656.1	1,276.4	1,061.3	215.11	5.934	
10,900.0	6,672.5	6,642.5	6,642.5	84.2	132.8	90.36	2,980.0	656.1	1,369.1	1,152.1	217.00	6.309	
11,000.0	6,672.7	6,642.7	6,642.7	86.1	132.9	90.39	2,980.0	656.1	1,462.7	1,243.8	218.89	6.682	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Guttersen 8T-201
Project:	SEC.8-T3N-R63W	**TVD Reference:**	WELL @ 4900.0ft (RKB - 15')
Reference Site:	Guttersen 8T-HZ Pad Sec.8-T3N-R63W	**MD Reference:**	WELL @ 4900.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 8T-201	**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 (2-05-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Sec.8-T3N-R63W - Guttersen 42-8 (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7029-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
11,100.0	6,673.0	6,643.0	6,643.0	88.0	132.9	90.42	2,980.0	656.1	1,557.2	1,336.4	220.79	7.053	
11,108.7	6,673.0	6,643.0	6,643.0	88.1	132.9	90.42	2,980.0	656.1	1,565.5	1,344.5	220.95	7.085	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Guttersen 8T-201
Project:	SEC.8-T3N-R63W	**TVD Reference:**	WELL @ 4900.0ft (RKB - 15')
Reference Site:	Guttersen 8T-HZ Pad Sec.8-T3N-R63W	**MD Reference:**	WELL @ 4900.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 8T-201	**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 (2-05-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Sec.8-T3N-R63W - Guttersen 43-8 (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7022-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	21.55	1,653.9	653.3	1,778.3				
100.0	100.0	90.0	90.0	0.1	1.8	21.55	1,653.9	653.3	1,778.3	1,776.4	1.91	929.787	
200.0	200.0	190.0	190.0	0.3	3.8	21.55	1,653.9	653.3	1,778.3	1,774.2	4.14	429.815	
300.0	300.0	290.0	290.0	0.6	5.8	21.55	1,653.9	653.3	1,778.3	1,771.9	6.36	279.513	
400.0	400.0	390.0	390.0	0.8	7.8	21.55	1,653.9	653.3	1,778.3	1,769.7	8.59	207.094	
500.0	500.0	490.0	490.0	1.0	9.8	21.55	1,653.9	653.3	1,778.3	1,767.5	10.81	164.480	
600.0	600.0	590.0	590.0	1.2	11.8	21.55	1,653.9	653.3	1,778.3	1,765.3	13.04	136.410	
700.0	700.0	690.0	690.0	1.5	13.8	21.55	1,653.9	653.3	1,778.3	1,763.0	15.26	116.524	
800.0	800.0	790.0	790.0	1.7	15.8	21.55	1,653.9	653.3	1,778.3	1,760.8	17.49	101.699	
900.0	900.0	890.0	890.0	1.9	17.8	21.55	1,653.9	653.3	1,778.3	1,758.6	19.71	90.220	
1,000.0	1,000.0	990.0	990.0	2.1	19.8	21.55	1,653.9	653.3	1,778.3	1,756.4	21.94	81.069	
1,100.0	1,100.0	1,090.0	1,090.0	2.4	21.8	21.55	1,653.9	653.3	1,778.3	1,754.1	24.16	73.604	
1,200.0	1,200.0	1,190.0	1,190.0	2.6	23.8	21.55	1,653.9	653.3	1,778.3	1,751.9	26.38	67.398	
1,300.0	1,300.0	1,290.0	1,290.0	2.8	25.8	21.55	1,653.9	653.3	1,778.3	1,749.7	28.61	62.157	
1,400.0	1,400.0	1,390.0	1,390.0	3.0	27.8	21.55	1,653.9	653.3	1,778.3	1,747.5	30.83	57.672	
1,500.0	1,500.0	1,490.0	1,490.0	3.3	29.8	21.55	1,653.9	653.3	1,778.3	1,745.2	33.06	53.791	
1,600.0	1,600.0	1,590.0	1,590.0	3.5	31.8	21.55	1,653.9	653.3	1,778.3	1,743.0	35.28	50.399	
1,700.0	1,700.0	1,690.0	1,690.0	3.7	33.8	21.55	1,653.9	653.3	1,778.3	1,740.8	37.51	47.410	
1,800.0	1,800.0	1,790.0	1,790.0	3.9	35.8	21.55	1,653.9	653.3	1,778.3	1,738.6	39.73	44.755	
1,900.0	1,900.0	1,890.0	1,890.0	4.2	37.8	21.55	1,653.9	653.3	1,778.3	1,736.3	41.96	42.382	
2,000.0	2,000.0	1,990.0	1,990.0	4.4	39.8	21.55	1,653.9	653.3	1,778.3	1,734.1	44.18	40.248	
2,100.0	2,100.0	2,090.0	2,090.0	4.6	41.8	-130.84	1,653.9	653.3	1,779.4	1,733.1	46.37	38.376	
2,200.0	2,199.8	2,189.8	2,189.8	4.8	43.8	-130.92	1,653.9	653.3	1,782.9	1,734.4	48.50	36.758	
2,300.0	2,299.5	2,289.5	2,289.5	4.9	45.8	-131.04	1,653.9	653.3	1,788.6	1,738.0	50.61	35.341	
2,400.0	2,398.8	2,388.8	2,388.8	5.1	47.8	-131.27	1,653.9	653.3	1,796.4	1,743.6	52.74	34.061	
2,500.0	2,498.0	2,488.0	2,488.0	5.3	49.8	-131.56	1,653.9	653.3	1,804.4	1,749.5	54.92	32.857	
2,600.0	2,597.3	2,587.3	2,587.3	5.6	51.7	-131.84	1,653.9	653.3	1,812.6	1,755.5	57.10	31.742	
2,700.0	2,696.5	2,686.5	2,686.5	5.8	53.7	-132.13	1,653.9	653.3	1,820.8	1,761.5	59.30	30.706	
2,800.0	2,795.8	2,785.8	2,785.8	6.0	55.7	-132.41	1,653.9	653.3	1,829.0	1,767.5	61.49	29.742	
2,900.0	2,895.0	2,885.0	2,885.0	6.3	57.7	-132.69	1,653.9	653.3	1,837.2	1,773.5	63.70	28.843	
3,000.0	2,994.3	2,984.3	2,984.3	6.5	59.7	-132.97	1,653.9	653.3	1,845.6	1,779.6	65.91	28.003	
3,100.0	3,093.5	3,083.5	3,083.5	6.8	61.7	-133.24	1,653.9	653.3	1,853.9	1,785.8	68.12	27.217	
3,200.0	3,192.8	3,182.8	3,182.8	7.1	63.7	-133.51	1,653.9	653.3	1,862.3	1,792.0	70.33	26.479	
3,300.0	3,292.1	3,282.1	3,282.1	7.3	65.6	-133.78	1,653.9	653.3	1,870.7	1,798.2	72.55	25.786	
3,400.0	3,391.3	3,381.3	3,381.3	7.6	67.6	-134.05	1,653.9	653.3	1,879.2	1,804.4	74.77	25.134	
3,500.0	3,490.6	3,480.6	3,480.6	7.9	69.6	-134.31	1,653.9	653.3	1,887.7	1,810.7	76.99	24.519	
3,600.0	3,589.8	3,579.8	3,579.8	8.2	71.6	-134.58	1,653.9	653.3	1,896.3	1,817.1	79.22	23.938	
3,700.0	3,689.1	3,679.1	3,679.1	8.5	73.6	-134.84	1,653.9	653.3	1,904.9	1,823.4	81.44	23.390	
3,800.0	3,788.3	3,778.3	3,778.3	8.8	75.6	-135.09	1,653.9	653.3	1,913.5	1,829.9	83.67	22.870	
3,900.0	3,887.6	3,877.6	3,877.6	9.0	77.6	-135.35	1,653.9	653.3	1,922.2	1,836.3	85.90	22.378	
4,000.0	3,986.9	3,976.9	3,976.9	9.3	79.5	-135.60	1,653.9	653.3	1,930.9	1,842.8	88.13	21.911	
4,100.0	4,086.1	4,076.1	4,076.1	9.6	81.5	-135.85	1,653.9	653.3	1,939.7	1,849.3	90.36	21.467	
4,200.0	4,185.4	4,175.4	4,175.4	9.9	83.5	-136.10	1,653.9	653.3	1,948.4	1,855.9	92.59	21.045	
4,300.0	4,284.6	4,274.6	4,274.6	10.2	85.5	-136.35	1,653.9	653.3	1,957.3	1,862.5	94.82	20.642	
4,400.0	4,383.9	4,373.9	4,373.9	10.5	87.5	-136.59	1,653.9	653.3	1,966.1	1,869.1	97.05	20.259	
4,500.0	4,483.1	4,473.1	4,473.1	10.8	89.5	-136.83	1,653.9	653.3	1,975.0	1,875.7	99.28	19.893	
4,600.0	4,582.4	4,572.4	4,572.4	11.1	91.4	-137.07	1,653.9	653.3	1,984.0	1,882.4	101.51	19.543	
4,700.0	4,681.7	4,671.7	4,671.7	11.4	93.4	-137.34	1,653.9	653.3	1,992.8	1,889.0	103.81	19.197	
4,800.0	4,781.2	4,771.2	4,771.2	11.7	95.4	-137.62	1,653.9	653.3	1,999.7	1,893.5	106.18	18.833	
4,900.0	4,881.0	4,871.0	4,871.0	11.9	97.4	-137.79	1,653.9	653.3	2,004.1	1,895.6	108.49	18.473	
5,000.0	4,981.0	4,971.0	4,971.0	12.1	99.4	-137.86	1,653.9	653.3	2,005.9	1,895.1	110.72	18.116	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Guttersen 8T-201
Project:	SEC.8-T3N-R63W	**TVD Reference:**	WELL @ 4900.0ft (RKB - 15')
Reference Site:	Guttersen 8T-HZ Pad Sec.8-T3N-R63W	**MD Reference:**	WELL @ 4900.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 8T-201	**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 (2-05-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Sec.8-T3N-R63W - Guttersen 43-8 (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7022-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,081.0	5,071.0	5,071.0	12.3	101.4	14.51	1,653.9	653.3	2,005.9	1,893.0	112.91	17.766	
5,200.0	5,181.0	5,171.0	5,171.0	12.4	103.4	14.51	1,653.9	653.3	2,005.9	1,890.8	115.10	17.427	
5,300.0	5,281.0	5,271.0	5,271.0	12.6	105.4	14.51	1,653.9	653.3	2,005.9	1,888.6	117.30	17.101	
5,400.0	5,381.0	5,371.0	5,371.0	12.8	107.4	14.51	1,653.9	653.3	2,005.9	1,886.4	119.49	16.787	
5,500.0	5,481.0	5,471.0	5,471.0	13.0	109.4	14.51	1,653.9	653.3	2,005.9	1,884.2	121.69	16.484	
5,600.0	5,581.0	5,571.0	5,571.0	13.2	111.4	14.51	1,653.9	653.3	2,005.9	1,882.0	123.88	16.192	
5,700.0	5,681.0	5,671.0	5,671.0	13.4	113.4	14.51	1,653.9	653.3	2,005.9	1,879.8	126.08	15.910	
5,800.0	5,781.0	5,771.0	5,771.0	13.5	115.4	14.51	1,653.9	653.3	2,005.9	1,877.6	128.28	15.637	
5,900.0	5,881.0	5,871.0	5,871.0	13.7	117.4	14.51	1,653.9	653.3	2,005.9	1,875.4	130.48	15.373	
6,000.0	5,980.9	5,970.9	5,970.9	13.9	119.4	14.45	1,653.9	653.3	2,001.7	1,869.7	131.94	15.171	
6,100.0	6,079.3	6,069.3	6,069.3	14.0	121.4	14.90	1,653.9	653.3	1,985.1	1,853.8	131.27	15.122	
6,200.0	6,174.7	6,164.7	6,164.7	14.0	123.3	15.72	1,653.9	653.3	1,956.2	1,827.8	128.45	15.229	
6,300.0	6,265.3	6,255.3	6,255.3	14.1	125.1	17.01	1,653.9	653.3	1,915.6	1,792.0	123.62	15.496	
6,400.0	6,349.7	6,339.7	6,339.7	14.1	126.8	18.90	1,653.9	653.3	1,863.9	1,746.8	117.16	15.909	
6,500.0	6,426.4	6,416.4	6,416.4	14.1	128.3	21.61	1,653.9	653.3	1,802.3	1,692.4	109.88	16.403	
6,600.0	6,494.1	6,484.1	6,484.1	14.2	129.7	25.51	1,653.9	653.3	1,731.7	1,628.4	103.35	16.757	
6,700.0	6,551.6	6,541.6	6,541.6	14.4	130.8	31.18	1,653.9	653.3	1,653.6	1,553.1	100.44	16.464	
6,800.0	6,597.9	6,587.9	6,587.9	14.9	131.8	39.51	1,653.9	653.3	1,569.4	1,464.2	105.19	14.920	
6,900.0	6,632.3	6,622.3	6,622.3	15.7	132.4	51.64	1,653.9	653.3	1,480.7	1,360.8	119.89	12.350	
7,000.0	6,654.1	6,644.1	6,644.1	16.5	132.9	68.06	1,653.9	653.3	1,389.2	1,249.9	139.26	9.975	
7,100.0	6,663.0	6,653.0	6,653.0	17.6	133.1	86.70	1,653.9	653.3	1,296.7	1,146.3	150.40	8.622	
7,200.0	6,663.4	6,653.4	6,653.4	18.8	133.1	89.69	1,653.9	653.3	1,205.0	1,053.2	151.79	7.939	
7,300.0	6,663.7	6,653.7	6,653.7	20.0	133.1	89.72	1,653.9	653.3	1,114.6	961.6	153.07	7.282	
7,400.0	6,663.9	6,653.9	6,653.9	21.4	133.1	89.75	1,653.9	653.3	1,026.1	871.6	154.45	6.643	
7,500.0	6,664.2	6,654.2	6,654.2	22.9	133.1	89.78	1,653.9	653.3	939.8	783.9	155.91	6.028	
7,600.0	6,664.4	6,654.4	6,654.4	24.4	133.1	89.80	1,653.9	653.3	856.6	699.1	157.43	5.441	
7,700.0	6,664.7	6,654.7	6,654.7	26.0	133.1	89.83	1,653.9	653.3	777.3	618.3	159.01	4.888	
7,800.0	6,664.9	6,654.9	6,654.9	27.6	133.1	89.86	1,653.9	653.3	703.3	542.7	160.63	4.378	
7,900.0	6,665.2	6,655.2	6,655.2	29.2	133.1	89.89	1,653.9	653.3	636.5	474.2	162.29	3.922	
8,000.0	6,665.4	6,655.4	6,655.4	30.9	133.1	89.92	1,653.9	653.3	579.2	415.3	163.97	3.533	
8,100.0	6,665.6	6,655.6	6,655.6	32.6	133.1	89.94	1,653.9	653.3	534.8	369.1	165.69	3.228	
8,200.0	6,665.9	6,655.9	6,655.9	34.4	133.1	89.97	1,653.9	653.3	506.4	339.0	167.42	3.025	
8,297.8	6,666.1	6,656.1	6,656.1	36.1	133.1	90.00	1,653.9	653.3	496.9	327.7	169.14	2.938	CC
8,300.0	6,666.1	6,656.1	6,656.1	36.1	133.1	90.00	1,653.9	653.3	496.9	327.7	169.18	2.937	ES, SF
8,400.0	6,666.4	6,656.4	6,656.4	37.9	133.1	90.03	1,653.9	653.3	507.3	336.3	170.95	2.967	
8,500.0	6,666.6	6,656.6	6,656.6	39.6	133.1	90.06	1,653.9	653.3	536.4	363.7	172.73	3.106	
8,600.0	6,666.9	6,656.9	6,656.9	41.4	133.1	90.09	1,653.9	653.3	581.6	407.0	174.53	3.332	
8,700.0	6,667.1	6,657.1	6,657.1	43.2	133.1	90.11	1,653.9	653.3	639.3	462.9	176.34	3.625	
8,800.0	6,667.4	6,657.4	6,657.4	45.0	133.1	90.14	1,653.9	653.3	706.5	528.3	178.15	3.965	
8,900.0	6,667.6	6,657.6	6,657.6	46.9	133.2	90.17	1,653.9	653.3	780.7	600.8	179.98	4.338	
9,000.0	6,667.8	6,657.8	6,657.8	48.7	133.2	90.20	1,653.9	653.3	860.2	678.4	181.81	4.731	
9,100.0	6,668.1	6,658.1	6,658.1	50.5	133.2	90.23	1,653.9	653.3	943.6	760.0	183.65	5.138	
9,200.0	6,668.3	6,658.3	6,658.3	52.4	133.2	90.25	1,653.9	653.3	1,030.0	844.5	185.50	5.553	
9,300.0	6,668.6	6,658.6	6,658.6	54.2	133.2	90.28	1,653.9	653.3	1,118.6	931.3	187.35	5.971	
9,400.0	6,668.8	6,658.8	6,658.8	56.1	133.2	90.31	1,653.9	653.3	1,209.0	1,019.8	189.20	6.390	
9,500.0	6,669.1	6,659.1	6,659.1	57.9	133.2	90.34	1,653.9	653.3	1,300.9	1,109.8	191.06	6.809	
9,600.0	6,669.3	6,659.3	6,659.3	59.8	133.2	90.37	1,653.9	653.3	1,393.8	1,200.9	192.93	7.225	
9,700.0	6,669.6	6,659.6	6,659.6	61.6	133.2	90.40	1,653.9	653.3	1,487.7	1,292.9	194.79	7.637	
9,800.0	6,669.8	6,659.8	6,659.8	63.5	133.2	90.42	1,653.9	653.3	1,582.3	1,385.6	196.66	8.046	
9,900.0	6,670.0	6,660.0	6,660.0	65.4	133.2	90.45	1,653.9	653.3	1,677.5	1,479.0	198.54	8.449	
10,000.0	6,670.3	6,660.3	6,660.3	67.2	133.2	90.48	1,653.9	653.3	1,773.3	1,572.8	200.41	8.848	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Guttersen 8T-201
Project:	SEC.8-T3N-R63W	**TVD Reference:**	WELL @ 4900.0ft (RKB - 15')
Reference Site:	Guttersen 8T-HZ Pad Sec.8-T3N-R63W	**MD Reference:**	WELL @ 4900.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 8T-201	**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 (2-05-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Sec.8-T3N-R63W - Guttersen 43-8 (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7022-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,100.0	6,670.5	6,660.5	6,660.5	69.1	133.2	90.51	1,653.9	653.3	1,869.5	1,667.2	202.29	9.241	
10,200.0	6,670.8	6,660.8	6,660.8	71.0	133.2	90.54	1,653.9	653.3	1,966.0	1,761.9	204.17	9.629	
10,300.0	6,671.0	6,661.0	6,661.0	72.9	133.2	90.56	1,653.9	653.3	2,063.0	1,856.9	206.05	10.012	
10,400.0	6,671.3	6,661.3	6,661.3	74.8	133.2	90.59	1,653.9	653.3	2,160.1	1,952.2	207.94	10.388	
10,500.0	6,671.5	6,661.5	6,661.5	76.6	133.2	90.62	1,653.9	653.3	2,257.6	2,047.8	209.82	10.759	
10,600.0	6,671.8	6,661.8	6,661.8	78.5	133.2	90.65	1,653.9	653.3	2,355.2	2,143.5	211.71	11.125	
10,700.0	6,672.0	6,662.0	6,662.0	80.4	133.2	90.68	1,653.9	653.3	2,453.1	2,239.5	213.60	11.484	
10,800.0	6,672.2	6,662.2	6,662.2	82.3	133.2	90.71	1,653.9	653.3	2,551.1	2,335.6	215.49	11.838	
10,900.0	6,672.5	6,662.5	6,662.5	84.2	133.2	90.73	1,653.9	653.3	2,649.2	2,431.9	217.38	12.187	
11,000.0	6,672.7	6,662.7	6,662.7	86.1	133.3	90.76	1,653.9	653.3	2,747.5	2,528.2	219.28	12.530	
11,100.0	6,673.0	6,663.0	6,663.0	88.0	133.3	90.79	1,653.9	653.3	2,845.9	2,624.8	221.17	12.868	
11,108.7	6,673.0	6,663.0	6,663.0	88.1	133.3	90.79	1,653.9	653.3	2,854.5	2,633.2	221.34	12.897	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Guttersen 8T-201
Project:	SEC.8-T3N-R63W	**TVD Reference:**	WELL @ 4900.0ft (RKB - 15')
Reference Site:	Guttersen 8T-HZ Pad Sec.8-T3N-R63W	**MD Reference:**	WELL @ 4900.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 8T-201	**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 (2-05-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Sec.8-T3N-R63W - Guttersen 44-8 (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7025-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	63.54	327.9	658.9	736.0				
100.0	100.0	100.0	100.0	0.1	2.0	63.54	327.9	658.9	736.0	733.9	2.11	348.384	
200.0	200.0	200.0	200.0	0.3	4.0	63.54	327.9	658.9	736.0	731.7	4.34	169.687	
300.0	300.0	300.0	300.0	0.6	6.0	63.54	327.9	658.9	736.0	729.4	6.56	112.157	
400.0	400.0	400.0	400.0	0.8	8.0	63.54	327.9	658.9	736.0	727.2	8.79	83.760	
500.0	500.0	500.0	500.0	1.0	10.0	63.54	327.9	658.9	736.0	725.0	11.01	66.837	
600.0	600.0	600.0	600.0	1.2	12.0	63.54	327.9	658.9	736.0	722.8	13.24	55.603	
700.0	700.0	700.0	700.0	1.5	14.0	63.54	327.9	658.9	736.0	720.5	15.46	47.602	
800.0	800.0	800.0	800.0	1.7	16.0	63.54	327.9	658.9	736.0	718.3	17.69	41.614	
900.0	900.0	900.0	900.0	1.9	18.0	63.54	327.9	658.9	736.0	716.1	19.91	36.965	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	20.0	63.54	327.9	658.9	736.0	713.9	22.14	33.249	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	22.0	63.54	327.9	658.9	736.0	711.6	24.36	30.213	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	24.0	63.54	327.9	658.9	736.0	709.4	26.58	27.684	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	26.0	63.54	327.9	658.9	736.0	707.2	28.81	25.547	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	28.0	63.54	327.9	658.9	736.0	705.0	31.03	23.715	
1,500.0	1,500.0	1,500.0	1,500.0	3.3	30.0	63.54	327.9	658.9	736.0	702.7	33.26	22.129	
1,600.0	1,600.0	1,600.0	1,600.0	3.5	32.0	63.54	327.9	658.9	736.0	700.5	35.48	20.741	
1,700.0	1,700.0	1,700.0	1,700.0	3.7	34.0	63.54	327.9	658.9	736.0	698.3	37.71	19.518	
1,800.0	1,800.0	1,800.0	1,800.0	3.9	36.0	63.54	327.9	658.9	736.0	696.1	39.93	18.430	
1,900.0	1,900.0	1,900.0	1,900.0	4.2	38.0	63.54	327.9	658.9	736.0	693.8	42.16	17.458	
2,000.0	2,000.0	2,000.0	2,000.0	4.4	40.0	63.54	327.9	658.9	736.0	691.6	44.38	16.583	
2,100.0	2,100.0	2,100.0	2,100.0	4.6	42.0	-88.96	327.9	658.9	736.0	689.4	46.58	15.800	
2,200.0	2,199.8	2,199.8	2,199.8	4.8	44.0	-89.37	327.9	658.9	735.9	687.1	48.75	15.095	
2,293.9	2,293.4	2,293.4	2,293.4	4.9	45.9	-90.00	327.9	658.9	735.8	685.0	50.79	14.487	
2,300.0	2,299.5	2,299.5	2,299.5	4.9	46.0	-90.05	327.9	658.9	735.8	684.9	50.93	14.449	
2,400.0	2,398.8	2,398.8	2,398.8	5.1	48.0	-90.96	327.9	658.9	735.9	682.8	53.11	13.857	
2,500.0	2,498.0	2,498.0	2,498.0	5.3	50.0	-91.90	327.9	658.9	736.2	680.9	55.30	13.313	
2,600.0	2,597.3	2,597.3	2,597.3	5.6	51.9	-92.84	327.9	658.9	736.8	679.2	57.51	12.811	
2,700.0	2,696.5	2,696.5	2,696.5	5.8	53.9	-93.77	327.9	658.9	737.5	677.7	59.72	12.348	
2,800.0	2,795.8	2,795.8	2,795.8	6.0	55.9	-94.71	327.9	658.9	738.4	676.4	61.95	11.919	
2,900.0	2,895.0	2,895.0	2,895.0	6.3	57.9	-95.64	327.9	658.9	739.5	675.3	64.18	11.522	
3,000.0	2,994.3	2,994.3	2,994.3	6.5	59.9	-96.57	327.9	658.9	740.8	674.4	66.42	11.154	
3,100.0	3,093.5	3,093.5	3,093.5	6.8	61.9	-97.50	327.9	658.9	742.3	673.6	68.66	10.811	
3,200.0	3,192.8	3,192.8	3,192.8	7.1	63.9	-98.42	327.9	658.9	744.0	673.1	70.91	10.492	
3,300.0	3,292.1	3,292.1	3,292.1	7.3	65.8	-99.34	327.9	658.9	745.9	672.7	73.16	10.196	
3,400.0	3,391.3	3,391.3	3,391.3	7.6	67.8	-100.26	327.9	658.9	748.0	672.5	75.41	9.918	
3,500.0	3,490.6	3,490.6	3,490.6	7.9	69.8	-101.16	327.9	658.9	750.2	672.6	77.67	9.660	
3,600.0	3,589.8	3,589.8	3,589.8	8.2	71.8	-102.07	327.9	658.9	752.7	672.8	79.93	9.418	
3,700.0	3,689.1	3,689.1	3,689.1	8.5	73.8	-102.96	327.9	658.9	755.4	673.2	82.19	9.191	
3,800.0	3,788.3	3,788.3	3,788.3	8.8	75.8	-103.85	327.9	658.9	758.2	673.8	84.45	8.978	
3,900.0	3,887.6	3,887.6	3,887.6	9.0	77.8	-104.74	327.9	658.9	761.2	674.5	86.71	8.779	
4,000.0	3,986.9	3,986.9	3,986.9	9.3	79.7	-105.61	327.9	658.9	764.4	675.5	88.97	8.592	
4,100.0	4,086.1	4,086.1	4,086.1	9.6	81.7	-106.48	327.9	658.9	767.8	676.6	91.24	8.416	
4,200.0	4,185.4	4,185.4	4,185.4	9.9	83.7	-107.34	327.9	658.9	771.4	677.9	93.50	8.250	
4,300.0	4,284.6	4,284.6	4,284.6	10.2	85.7	-108.20	327.9	658.9	775.1	679.4	95.76	8.095	
4,400.0	4,383.9	4,383.9	4,383.9	10.5	87.7	-109.04	327.9	658.9	779.1	681.0	98.02	7.948	
4,500.0	4,483.1	4,483.1	4,483.1	10.8	89.7	-109.88	327.9	658.9	783.1	682.9	100.29	7.809	
4,600.0	4,582.4	4,582.4	4,582.4	11.1	91.6	-110.71	327.9	658.9	787.4	684.8	102.55	7.678	
4,700.0	4,681.7	4,681.7	4,681.7	11.4	93.6	-111.54	327.9	658.9	791.8	686.9	104.81	7.554	
4,800.0	4,781.2	4,781.2	4,781.2	11.7	95.6	-112.23	327.9	658.9	795.3	688.2	107.07	7.428	
4,900.0	4,881.0	4,881.0	4,881.0	11.9	97.6	-112.66	327.9	658.9	797.5	688.2	109.30	7.297	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Guttersen 8T-201
Project:	SEC.8-T3N-R63W	**TVD Reference:**	WELL @ 4900.0ft (RKB - 15')
Reference Site:	Guttersen 8T-HZ Pad Sec.8-T3N-R63W	**MD Reference:**	WELL @ 4900.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 8T-201	**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 (2-05-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Sec.8-T3N-R63W - Guttersen 44-8 (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7025-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,981.0	4,981.0	4,981.0	12.1	99.6	-112.84	327.9	658.9	798.4	687.0	111.49	7.161	
5,100.0	5,081.0	5,081.0	5,081.0	12.3	101.6	39.53	327.9	658.9	798.5	684.8	113.67	7.024	
5,200.0	5,181.0	5,181.0	5,181.0	12.4	103.6	39.53	327.9	658.9	798.5	682.6	115.86	6.892	
5,300.0	5,281.0	5,281.0	5,281.0	12.6	105.6	39.53	327.9	658.9	798.5	680.4	118.04	6.764	
5,400.0	5,381.0	5,381.0	5,381.0	12.8	107.6	39.53	327.9	658.9	798.5	678.2	120.23	6.641	
5,500.0	5,481.0	5,481.0	5,481.0	13.0	109.6	39.53	327.9	658.9	798.5	676.1	122.42	6.523	
5,600.0	5,581.0	5,581.0	5,581.0	13.2	111.6	39.53	327.9	658.9	798.5	673.9	124.60	6.408	
5,700.0	5,681.0	5,681.0	5,681.0	13.4	113.6	39.53	327.9	658.9	798.5	671.7	126.79	6.297	
5,800.0	5,781.0	5,781.0	5,781.0	13.5	115.6	39.53	327.9	658.9	798.5	669.5	128.98	6.190	
5,900.0	5,881.0	5,881.0	5,881.0	13.7	117.6	39.53	327.9	658.9	798.5	667.3	131.18	6.087	
6,000.0	5,980.9	5,980.9	5,980.9	13.9	119.6	39.72	327.9	658.9	795.1	662.2	132.90	5.983	
6,100.0	6,079.3	6,079.3	6,079.3	14.0	121.6	41.17	327.9	658.9	782.0	648.6	133.34	5.864	
6,200.0	6,174.7	6,174.7	6,174.7	14.0	123.5	43.80	327.9	658.9	759.5	626.6	132.82	5.718	
6,300.0	6,265.3	6,265.3	6,265.3	14.1	125.3	47.75	327.9	658.9	728.7	596.6	132.06	5.518	
6,400.0	6,349.7	6,349.7	6,349.7	14.1	127.0	53.11	327.9	658.9	691.2	559.1	132.13	5.231	
6,500.0	6,426.4	6,426.4	6,426.4	14.1	128.5	59.85	327.9	658.9	649.3	515.3	134.00	4.845	
6,600.0	6,494.1	6,494.1	6,494.1	14.2	129.9	67.58	327.9	658.9	606.0	468.2	137.77	4.398	
6,700.0	6,551.6	6,551.6	6,551.6	14.4	131.0	75.52	327.9	658.9	565.2	422.9	142.27	3.973	
6,800.0	6,597.9	6,597.9	6,597.9	14.9	132.0	82.60	327.9	658.9	531.8	385.9	145.95	3.644	
6,900.0	6,632.3	6,632.3	6,632.3	15.7	132.6	87.81	327.9	658.9	511.0	362.8	148.20	3.448	
6,970.8	6,649.0	6,649.0	6,649.0	16.3	133.0	90.00	327.9	658.9	506.4	357.1	149.24	3.393	CC, ES
7,000.0	6,654.1	6,654.1	6,654.1	16.5	133.1	90.50	327.9	658.9	507.2	357.6	149.59	3.390	SF
7,100.0	6,663.0	6,663.0	6,663.0	17.6	133.3	90.35	327.9	658.9	522.4	371.5	150.81	3.464	
7,200.0	6,663.4	6,663.4	6,663.4	18.8	133.3	90.06	327.9	658.9	555.4	403.5	151.99	3.655	
7,300.0	6,663.7	6,663.7	6,663.7	20.0	133.3	90.09	327.9	658.9	603.5	450.2	153.27	3.937	
7,400.0	6,663.9	6,663.9	6,663.9	21.4	133.3	90.12	327.9	658.9	663.2	508.5	154.65	4.288	
7,500.0	6,664.2	6,664.2	6,664.2	22.9	133.3	90.15	327.9	658.9	731.8	575.7	156.11	4.688	
7,600.0	6,664.4	6,664.4	6,664.4	24.4	133.3	90.17	327.9	658.9	806.9	649.3	157.63	5.119	
7,700.0	6,664.7	6,664.7	6,664.7	26.0	133.3	90.20	327.9	658.9	887.0	727.8	159.21	5.571	
7,800.0	6,664.9	6,664.9	6,664.9	27.6	133.3	90.23	327.9	658.9	970.8	810.0	160.83	6.036	
7,900.0	6,665.2	6,665.2	6,665.2	29.2	133.3	90.26	327.9	658.9	1,057.4	894.9	162.48	6.508	
8,000.0	6,665.4	6,665.4	6,665.4	30.9	133.3	90.28	327.9	658.9	1,146.2	982.0	164.17	6.982	
8,100.0	6,665.6	6,665.6	6,665.6	32.6	133.3	90.31	327.9	658.9	1,236.7	1,070.8	165.88	7.455	
8,200.0	6,665.9	6,665.9	6,665.9	34.4	133.3	90.34	327.9	658.9	1,328.6	1,160.9	167.62	7.926	
8,300.0	6,666.1	6,666.1	6,666.1	36.1	133.3	90.37	327.9	658.9	1,421.5	1,252.1	169.37	8.393	
8,400.0	6,666.4	6,666.4	6,666.4	37.9	133.3	90.39	327.9	658.9	1,515.4	1,344.2	171.14	8.855	
8,500.0	6,666.6	6,666.6	6,666.6	39.6	133.3	90.42	327.9	658.9	1,610.0	1,437.0	172.93	9.310	
8,600.0	6,666.9	6,666.9	6,666.9	41.4	133.3	90.45	327.9	658.9	1,705.2	1,530.5	174.72	9.759	
8,700.0	6,667.1	6,667.1	6,667.1	43.2	133.3	90.48	327.9	658.9	1,800.9	1,624.4	176.53	10.202	
8,800.0	6,667.4	6,667.4	6,667.4	45.0	133.3	90.51	327.9	658.9	1,897.1	1,718.7	178.34	10.637	
8,900.0	6,667.6	6,667.6	6,667.6	46.9	133.4	90.53	327.9	658.9	1,993.6	1,813.5	180.17	11.065	
9,000.0	6,667.8	6,667.8	6,667.8	48.7	133.4	90.56	327.9	658.9	2,090.5	1,908.5	182.00	11.486	
9,100.0	6,668.1	6,668.1	6,668.1	50.5	133.4	90.59	327.9	658.9	2,187.7	2,003.8	183.84	11.900	
9,200.0	6,668.3	6,668.3	6,668.3	52.4	133.4	90.62	327.9	658.9	2,285.1	2,099.4	185.69	12.306	
9,300.0	6,668.6	6,668.6	6,668.6	54.2	133.4	90.64	327.9	658.9	2,382.7	2,195.2	187.54	12.705	
9,400.0	6,668.8	6,668.8	6,668.8	56.1	133.4	90.67	327.9	658.9	2,480.5	2,291.1	189.39	13.097	
9,500.0	6,669.1	6,669.1	6,669.1	57.9	133.4	90.70	327.9	658.9	2,578.5	2,387.2	191.25	13.482	
9,600.0	6,669.3	6,669.3	6,669.3	59.8	133.4	90.73	327.9	658.9	2,676.6	2,483.5	193.11	13.860	
9,700.0	6,669.6	6,669.6	6,669.6	61.6	133.4	90.75	327.9	658.9	2,774.9	2,579.9	194.98	14.232	
9,800.0	6,669.8	6,669.8	6,669.8	63.5	133.4	90.78	327.9	658.9	2,873.2	2,676.4	196.85	14.596	
9,900.0	6,670.0	6,670.0	6,670.0	65.4	133.4	90.81	327.9	658.9	2,971.7	2,773.0	198.72	14.954	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Guttersen 8T-201
Project:	SEC.8-T3N-R63W	**TVD Reference:**	WELL @ 4900.0ft (RKB - 15')
Reference Site:	Guttersen 8T-HZ Pad Sec.8-T3N-R63W	**MD Reference:**	WELL @ 4900.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 8T-201	**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 (2-05-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Sec.8-T3N-R63W - Guttersen 44-8 (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7025-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,000.0	6,670.3	6,670.3	6,670.3	67.2	133.4	90.84	327.9	658.9	3,070.3	2,869.7	200.59	15.306	
10,100.0	6,670.5	6,670.5	6,670.5	69.1	133.4	90.86	327.9	658.9	3,169.0	2,966.5	202.47	15.651	
10,200.0	6,670.8	6,670.8	6,670.8	71.0	133.4	90.89	327.9	658.9	3,267.7	3,063.4	204.35	15.991	
10,300.0	6,671.0	6,671.0	6,671.0	72.9	133.4	90.92	327.9	658.9	3,366.6	3,160.3	206.23	16.324	
10,400.0	6,671.3	6,671.3	6,671.3	74.8	133.4	90.95	327.9	658.9	3,465.5	3,257.3	208.12	16.651	
10,500.0	6,671.5	6,671.5	6,671.5	76.6	133.4	90.98	327.9	658.9	3,564.4	3,354.4	210.00	16.973	
10,600.0	6,671.8	6,671.8	6,671.8	78.5	133.4	91.00	327.9	658.9	3,663.4	3,451.5	211.89	17.289	
10,700.0	6,672.0	6,672.0	6,672.0	80.4	133.4	91.03	327.9	658.9	3,762.5	3,548.7	213.78	17.600	
10,800.0	6,672.2	6,672.2	6,672.2	82.3	133.4	91.06	327.9	658.9	3,861.6	3,645.9	215.67	17.905	
10,900.0	6,672.5	6,672.5	6,672.5	84.2	133.4	91.09	327.9	658.9	3,960.8	3,743.2	217.56	18.205	
11,000.0	6,672.7	6,672.7	6,672.7	86.1	133.5	91.11	327.9	658.9	4,060.0	3,840.5	219.45	18.500	
11,100.0	6,673.0	6,673.0	6,673.0	88.0	133.5	91.14	327.9	658.9	4,159.2	3,937.9	221.35	18.790	
11,108.7	6,673.0	6,673.0	6,673.0	88.1	133.5	91.14	327.9	658.9	4,167.9	3,946.4	221.51	18.816	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Guttersen 8T-201
Project:	SEC.8-T3N-R63W	**TVD Reference:**	WELL @ 4900.0ft (RKB - 15')
Reference Site:	Guttersen 8T-HZ Pad Sec.8-T3N-R63W	**MD Reference:**	WELL @ 4900.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 8T-201	**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 (2-05-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Sec.8-T3N-R63W - Guttersen 8C (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7026-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-0.13	3,635.7	-8.4	3,635.8				
100.0	100.0	75.0	75.0	0.1	1.5	-0.13	3,635.7	-8.4	3,635.7	3,634.1	1.61	2,254.614	
200.0	200.0	175.0	175.0	0.3	3.5	-0.13	3,635.7	-8.4	3,635.7	3,631.9	3.84	947.464	
300.0	300.0	275.0	275.0	0.6	5.5	-0.13	3,635.7	-8.4	3,635.7	3,629.7	6.06	599.750	
400.0	400.0	375.0	375.0	0.8	7.5	-0.13	3,635.7	-8.4	3,635.7	3,627.5	8.29	438.736	
500.0	500.0	475.0	475.0	1.0	9.5	-0.13	3,635.7	-8.4	3,635.7	3,625.2	10.51	345.878	
600.0	600.0	575.0	575.0	1.2	11.5	-0.13	3,635.7	-8.4	3,635.7	3,623.0	12.74	285.461	
700.0	700.0	675.0	675.0	1.5	13.5	-0.13	3,635.7	-8.4	3,635.7	3,620.8	14.96	243.012	
800.0	800.0	775.0	775.0	1.7	15.5	-0.13	3,635.7	-8.4	3,635.7	3,618.6	17.19	211.554	
900.0	900.0	875.0	875.0	1.9	17.5	-0.13	3,635.7	-8.4	3,635.7	3,616.3	19.41	187.306	
1,000.0	1,000.0	975.0	975.0	2.1	19.5	-0.13	3,635.7	-8.4	3,635.7	3,614.1	21.64	168.046	
1,100.0	1,100.0	1,075.0	1,075.0	2.4	21.5	-0.13	3,635.7	-8.4	3,635.7	3,611.9	23.86	152.377	
1,200.0	1,200.0	1,175.0	1,175.0	2.6	23.5	-0.13	3,635.7	-8.4	3,635.7	3,609.7	26.08	139.381	
1,300.0	1,300.0	1,275.0	1,275.0	2.8	25.5	-0.13	3,635.7	-8.4	3,635.7	3,607.4	28.31	128.427	
1,400.0	1,400.0	1,375.0	1,375.0	3.0	27.5	-0.13	3,635.7	-8.4	3,635.7	3,605.2	30.53	119.070	
1,500.0	1,500.0	1,475.0	1,475.0	3.3	29.5	-0.13	3,635.7	-8.4	3,635.7	3,603.0	32.76	110.984	
1,600.0	1,600.0	1,575.0	1,575.0	3.5	31.5	-0.13	3,635.7	-8.4	3,635.7	3,600.8	34.98	103.926	
1,700.0	1,700.0	1,675.0	1,675.0	3.7	33.5	-0.13	3,635.7	-8.4	3,635.7	3,598.5	37.21	97.712	
1,800.0	1,800.0	1,775.0	1,775.0	3.9	35.5	-0.13	3,635.7	-8.4	3,635.7	3,596.3	39.43	92.199	
1,900.0	1,900.0	1,875.0	1,875.0	4.2	37.5	-0.13	3,635.7	-8.4	3,635.7	3,594.1	41.66	87.275	
2,000.0	2,000.0	1,975.0	1,975.0	4.4	39.5	-0.13	3,635.7	-8.4	3,635.7	3,591.9	43.88	82.851	
2,100.0	2,100.0	2,075.0	2,075.0	4.6	41.5	-152.50	3,635.7	-8.4	3,637.3	3,591.2	46.06	78.971	
2,200.0	2,199.8	2,174.8	2,174.8	4.8	43.5	-152.50	3,635.7	-8.4	3,641.9	3,593.8	48.16	75.619	
2,300.0	2,299.5	2,274.5	2,274.5	4.9	45.5	-152.49	3,635.7	-8.4	3,649.7	3,599.5	50.21	72.685	
2,400.0	2,398.8	2,373.8	2,373.8	5.1	47.5	-152.53	3,635.7	-8.4	3,660.1	3,607.8	52.30	69.986	
2,500.0	2,498.0	2,473.0	2,473.0	5.3	49.5	-152.61	3,635.7	-8.4	3,670.9	3,616.5	54.46	67.401	
2,600.0	2,597.3	2,572.3	2,572.3	5.6	51.4	-152.70	3,635.7	-8.4	3,681.8	3,625.1	56.64	65.007	
2,700.0	2,696.5	2,671.5	2,671.5	5.8	53.4	-152.79	3,635.7	-8.4	3,692.6	3,633.8	58.81	62.785	
2,800.0	2,795.8	2,770.8	2,770.8	6.0	55.4	-152.87	3,635.7	-8.4	3,703.5	3,642.5	60.99	60.718	
2,900.0	2,895.0	2,870.0	2,870.0	6.3	57.4	-152.96	3,635.7	-8.4	3,714.3	3,651.1	63.18	58.790	
3,000.0	2,994.3	2,969.3	2,969.3	6.5	59.4	-153.04	3,635.7	-8.4	3,725.2	3,659.8	65.37	56.988	
3,100.0	3,093.5	3,068.5	3,068.5	6.8	61.4	-153.13	3,635.7	-8.4	3,736.1	3,668.5	67.56	55.301	
3,200.0	3,192.8	3,167.8	3,167.8	7.1	63.4	-153.21	3,635.7	-8.4	3,746.9	3,677.2	69.75	53.717	
3,300.0	3,292.1	3,267.1	3,267.1	7.3	65.3	-153.30	3,635.7	-8.4	3,757.8	3,685.9	71.95	52.229	
3,400.0	3,391.3	3,366.3	3,366.3	7.6	67.3	-153.38	3,635.7	-8.4	3,768.7	3,694.6	74.15	50.827	
3,500.0	3,490.6	3,465.6	3,465.6	7.9	69.3	-153.46	3,635.7	-8.4	3,779.6	3,703.3	76.35	49.505	
3,600.0	3,589.8	3,564.8	3,564.8	8.2	71.3	-153.54	3,635.7	-8.4	3,790.5	3,712.0	78.55	48.256	
3,700.0	3,689.1	3,664.1	3,664.1	8.5	73.3	-153.63	3,635.7	-8.4	3,801.5	3,720.7	80.75	47.074	
3,800.0	3,788.3	3,763.3	3,763.3	8.8	75.3	-153.71	3,635.7	-8.4	3,812.4	3,729.4	82.96	45.955	
3,900.0	3,887.6	3,862.6	3,862.6	9.0	77.3	-153.79	3,635.7	-8.4	3,823.3	3,738.2	85.17	44.893	
4,000.0	3,986.9	3,961.9	3,961.9	9.3	79.2	-153.87	3,635.7	-8.4	3,834.3	3,746.9	87.37	43.884	
4,100.0	4,086.1	4,061.1	4,061.1	9.6	81.2	-153.95	3,635.7	-8.4	3,845.2	3,755.6	89.58	42.924	
4,200.0	4,185.4	4,160.4	4,160.4	9.9	83.2	-154.03	3,635.7	-8.4	3,856.2	3,764.4	91.79	42.010	
4,300.0	4,284.6	4,259.6	4,259.6	10.2	85.2	-154.11	3,635.7	-8.4	3,867.1	3,773.1	94.00	41.139	
4,400.0	4,383.9	4,358.9	4,358.9	10.5	87.2	-154.18	3,635.7	-8.4	3,878.1	3,781.9	96.21	40.307	
4,500.0	4,483.1	4,458.1	4,458.1	10.8	89.2	-154.26	3,635.7	-8.4	3,889.1	3,790.7	98.43	39.513	
4,600.0	4,582.4	4,557.4	4,557.4	11.1	91.1	-154.34	3,635.7	-8.4	3,900.1	3,799.4	100.64	38.753	
4,700.0	4,681.7	4,656.7	4,656.7	11.4	93.1	-154.44	3,635.7	-8.4	3,910.9	3,808.0	102.95	37.990	
4,800.0	4,781.2	4,756.2	4,756.2	11.7	95.1	-154.58	3,635.7	-8.4	3,919.4	3,814.0	105.40	37.185	
4,900.0	4,881.0	4,856.0	4,856.0	11.9	97.1	-154.66	3,635.7	-8.4	3,924.7	3,817.0	107.76	36.420	
5,000.0	4,981.0	4,956.0	4,956.0	12.1	99.1	-154.69	3,635.7	-8.4	3,926.9	3,816.9	110.02	35.693	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Guttersen 8T-201
Project:	SEC.8-T3N-R63W	**TVD Reference:**	WELL @ 4900.0ft (RKB - 15')
Reference Site:	Guttersen 8T-HZ Pad Sec.8-T3N-R63W	**MD Reference:**	WELL @ 4900.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 8T-201	**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 (2-05-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Sec.8-T3N-R63W - Guttersen 8C (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7026-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,081.0	5,056.0	5,056.0	12.3	101.1	-2.32	3,635.7	-8.4	3,927.0	3,814.7	112.21	34.996	
5,200.0	5,181.0	5,156.0	5,156.0	12.4	103.1	-2.32	3,635.7	-8.4	3,927.0	3,812.5	114.41	34.323	
5,300.0	5,281.0	5,256.0	5,256.0	12.6	105.1	-2.32	3,635.7	-8.4	3,927.0	3,810.3	116.61	33.675	
5,400.0	5,381.0	5,356.0	5,356.0	12.8	107.1	-2.32	3,635.7	-8.4	3,927.0	3,808.1	118.81	33.051	
5,500.0	5,481.0	5,456.0	5,456.0	13.0	109.1	-2.32	3,635.7	-8.4	3,927.0	3,805.9	121.02	32.450	
5,600.0	5,581.0	5,556.0	5,556.0	13.2	111.1	-2.32	3,635.7	-8.4	3,927.0	3,803.7	123.22	31.869	
5,700.0	5,681.0	5,656.0	5,656.0	13.4	113.1	-2.32	3,635.7	-8.4	3,927.0	3,801.5	125.42	31.309	
5,800.0	5,781.0	5,756.0	5,756.0	13.5	115.1	-2.32	3,635.7	-8.4	3,927.0	3,799.3	127.63	30.769	
5,900.0	5,881.0	5,856.0	5,856.0	13.7	117.1	-2.32	3,635.7	-8.4	3,927.0	3,797.1	129.83	30.246	
6,000.0	5,980.9	5,955.9	5,955.9	13.9	119.1	-2.51	3,635.7	-8.4	3,922.6	3,791.4	131.24	29.888	
6,100.0	6,079.3	6,054.3	6,054.3	14.0	121.1	-2.58	3,635.7	-8.4	3,905.5	3,775.1	130.38	29.954	
6,200.0	6,174.7	6,149.7	6,149.7	14.0	123.0	-2.71	3,635.7	-8.4	3,875.7	3,748.5	127.15	30.482	
6,300.0	6,265.3	6,240.3	6,240.3	14.1	124.8	-2.91	3,635.7	-8.4	3,833.7	3,712.1	121.53	31.544	
6,400.0	6,349.7	6,324.7	6,324.7	14.1	126.5	-3.20	3,635.7	-8.4	3,780.2	3,666.6	113.59	33.278	
6,500.0	6,426.4	6,401.4	6,401.4	14.1	128.0	-3.63	3,635.7	-8.4	3,716.2	3,612.7	103.48	35.913	
6,600.0	6,494.1	6,469.1	6,469.1	14.2	129.4	-4.27	3,635.7	-8.4	3,642.7	3,551.3	91.43	39.840	
6,700.0	6,551.6	6,526.6	6,526.6	14.4	130.5	-5.26	3,635.7	-8.4	3,561.1	3,483.2	77.89	45.721	
6,800.0	6,597.9	6,572.9	6,572.9	14.9	131.5	-6.93	3,635.7	-8.4	3,472.7	3,408.9	63.72	54.496	
6,900.0	6,632.3	6,607.3	6,607.3	15.7	132.1	-10.17	3,635.7	-8.4	3,379.0	3,327.2	51.76	65.278	
7,000.0	6,654.1	6,629.1	6,629.1	16.5	132.6	-18.65	3,635.7	-8.4	3,281.6	3,226.0	55.58	59.047	
7,100.0	6,663.0	6,638.0	6,638.0	17.6	132.8	-65.96	3,635.7	-8.4	3,182.2	3,044.8	137.42	23.157	
7,200.0	6,663.4	6,638.4	6,638.4	18.8	132.8	-87.48	3,635.7	-8.4	3,082.3	2,931.0	151.32	20.370	
7,300.0	6,663.7	6,638.7	6,638.7	20.0	132.8	-87.56	3,635.7	-8.4	2,982.5	2,829.9	152.61	19.543	
7,400.0	6,663.9	6,638.9	6,638.9	21.4	132.8	-87.64	3,635.7	-8.4	2,882.7	2,728.7	154.00	18.718	
7,500.0	6,664.2	6,639.2	6,639.2	22.9	132.8	-87.72	3,635.7	-8.4	2,782.8	2,627.4	155.47	17.900	
7,600.0	6,664.4	6,639.4	6,639.4	24.4	132.8	-87.80	3,635.7	-8.4	2,683.0	2,526.0	157.00	17.089	
7,700.0	6,664.7	6,639.7	6,639.7	26.0	132.8	-87.89	3,635.7	-8.4	2,583.3	2,424.7	158.58	16.289	
7,800.0	6,664.9	6,639.9	6,639.9	27.6	132.8	-87.97	3,635.7	-8.4	2,483.5	2,323.3	160.21	15.501	
7,900.0	6,665.2	6,640.2	6,640.2	29.2	132.8	-88.05	3,635.7	-8.4	2,383.7	2,221.8	161.88	14.726	
8,000.0	6,665.4	6,640.4	6,640.4	30.9	132.8	-88.13	3,635.7	-8.4	2,284.0	2,120.4	163.57	13.963	
8,100.0	6,665.6	6,640.6	6,640.6	32.6	132.8	-88.21	3,635.7	-8.4	2,184.3	2,019.0	165.29	13.215	
8,200.0	6,665.9	6,640.9	6,640.9	34.4	132.8	-88.30	3,635.7	-8.4	2,084.6	1,917.6	167.04	12.480	
8,300.0	6,666.1	6,641.1	6,641.1	36.1	132.8	-88.38	3,635.7	-8.4	1,985.0	1,816.2	168.80	11.759	
8,400.0	6,666.4	6,641.4	6,641.4	37.9	132.8	-88.46	3,635.7	-8.4	1,885.3	1,714.8	170.57	11.053	
8,500.0	6,666.6	6,641.6	6,641.6	39.6	132.8	-88.54	3,635.7	-8.4	1,785.8	1,613.4	172.37	10.360	
8,600.0	6,666.9	6,641.9	6,641.9	41.4	132.8	-88.62	3,635.7	-8.4	1,686.3	1,512.1	174.17	9.682	
8,700.0	6,667.1	6,642.1	6,642.1	43.2	132.8	-88.71	3,635.7	-8.4	1,586.8	1,410.8	175.98	9.017	
8,800.0	6,667.4	6,642.4	6,642.4	45.0	132.8	-88.79	3,635.7	-8.4	1,487.4	1,309.6	177.81	8.365	
8,900.0	6,667.6	6,642.6	6,642.6	46.9	132.9	-88.87	3,635.7	-8.4	1,388.1	1,208.5	179.64	7.727	
9,000.0	6,667.8	6,642.8	6,642.8	48.7	132.9	-88.95	3,635.7	-8.4	1,289.0	1,107.5	181.48	7.103	
9,100.0	6,668.1	6,643.1	6,643.1	50.5	132.9	-89.03	3,635.7	-8.4	1,189.9	1,006.6	183.32	6.491	
9,200.0	6,668.3	6,643.3	6,643.3	52.4	132.9	-89.12	3,635.7	-8.4	1,091.0	905.9	185.17	5.892	
9,300.0	6,668.6	6,643.6	6,643.6	54.2	132.9	-89.20	3,635.7	-8.4	992.4	805.4	187.03	5.306	
9,400.0	6,668.8	6,643.8	6,643.8	56.1	132.9	-89.28	3,635.7	-8.4	894.0	705.2	188.89	4.733	
9,500.0	6,669.1	6,644.1	6,644.1	57.9	132.9	-89.36	3,635.7	-8.4	796.1	605.4	190.75	4.174	
9,600.0	6,669.3	6,644.3	6,644.3	59.8	132.9	-89.44	3,635.7	-8.4	698.8	506.1	192.62	3.628	
9,700.0	6,669.6	6,644.6	6,644.6	61.6	132.9	-89.53	3,635.7	-8.4	602.3	407.8	194.49	3.097	
9,800.0	6,669.8	6,644.8	6,644.8	63.5	132.9	-89.61	3,635.7	-8.4	507.2	310.8	196.36	2.583	
9,900.0	6,670.0	6,645.0	6,645.0	65.4	132.9	-89.69	3,635.7	-8.4	414.4	216.1	198.24	2.090	
10,000.0	6,670.3	6,645.3	6,645.3	67.2	132.9	-89.77	3,635.7	-8.4	325.9	125.7	200.12	1.628	
10,100.0	6,670.5	6,645.5	6,645.5	69.1	132.9	-89.85	3,635.7	-8.4	246.3	44.3	202.00	1.219	Level 2

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Guttersen 8T-201
Project:	SEC.8-T3N-R63W	**TVD Reference:**	WELL @ 4900.0ft (RKB - 15')
Reference Site:	Guttersen 8T-HZ Pad Sec.8-T3N-R63W	**MD Reference:**	WELL @ 4900.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 8T-201	**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 (2-05-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Sec.8-T3N-R63W - Guttersen 8C (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7026-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,200.0	6,670.8	6,645.8	6,645.8	71.0	132.9	-89.94	3,635.7	-8.4	187.5	-16.4	203.88	0.919	Level 1
10,277.6	6,671.0	6,646.0	6,646.0	72.5	132.9	-90.00	3,635.7	-8.4	170.6	-34.7	205.35	0.831	Level 1, CC, ES, SF
10,300.0	6,671.0	6,646.0	6,646.0	72.9	132.9	-90.02	3,635.7	-8.4	172.1	-33.7	205.77	0.836	Level 1
10,400.0	6,671.3	6,646.3	6,646.3	74.8	132.9	-90.10	3,635.7	-8.4	210.0	2.3	207.65	1.011	Level 2
10,500.0	6,671.5	6,646.5	6,646.5	76.6	132.9	-90.18	3,635.7	-8.4	280.3	70.8	209.54	1.338	Level 3
10,600.0	6,671.8	6,646.8	6,646.8	78.5	132.9	-90.26	3,635.7	-8.4	364.8	153.3	211.43	1.725	
10,700.0	6,672.0	6,647.0	6,647.0	80.4	132.9	-90.35	3,635.7	-8.4	455.5	242.2	213.32	2.136	
10,800.0	6,672.2	6,647.2	6,647.2	82.3	132.9	-90.43	3,635.7	-8.4	549.5	334.3	215.21	2.554	
10,900.0	6,672.5	6,647.5	6,647.5	84.2	132.9	-90.51	3,635.7	-8.4	645.4	428.2	217.10	2.973	
11,000.0	6,672.7	6,647.7	6,647.7	86.1	133.0	-90.59	3,635.7	-8.4	742.3	523.3	219.00	3.389	
11,100.0	6,673.0	6,648.0	6,648.0	88.0	133.0	-90.67	3,635.7	-8.4	839.9	619.0	220.89	3.802	
11,108.7	6,673.0	6,648.0	6,648.0	88.1	133.0	-90.68	3,635.7	-8.4	848.5	627.4	221.06	3.838	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Guttersen 8T-201
Project:	SEC.8-T3N-R63W	**TVD Reference:**	WELL @ 4900.0ft (RKB - 15')
Reference Site:	Guttersen 8T-HZ Pad Sec.8-T3N-R63W	**MD Reference:**	WELL @ 4900.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 8T-201	**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 (2-05-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Sec.8-T3N-R63W - Guttersen 8D (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7466-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-0.65	990.9	-11.2	991.0				
100.0	100.0	90.0	90.0	0.1	1.8	-0.65	990.9	-11.2	991.0	989.1	1.91	518.131	
200.0	200.0	190.0	190.0	0.3	3.8	-0.65	990.9	-11.2	991.0	986.8	4.14	239.518	
300.0	300.0	290.0	290.0	0.6	5.8	-0.65	990.9	-11.2	991.0	984.6	6.36	155.761	
400.0	400.0	390.0	390.0	0.8	7.8	-0.65	990.9	-11.2	991.0	982.4	8.59	115.405	
500.0	500.0	490.0	490.0	1.0	9.8	-0.65	990.9	-11.2	991.0	980.2	10.81	91.658	
600.0	600.0	590.0	590.0	1.2	11.8	-0.65	990.9	-11.2	991.0	977.9	13.04	76.015	
700.0	700.0	690.0	690.0	1.5	13.8	-0.65	990.9	-11.2	991.0	975.7	15.26	64.934	
800.0	800.0	790.0	790.0	1.7	15.8	-0.65	990.9	-11.2	991.0	973.5	17.49	56.672	
900.0	900.0	890.0	890.0	1.9	17.8	-0.65	990.9	-11.2	991.0	971.3	19.71	50.276	
1,000.0	1,000.0	990.0	990.0	2.1	19.8	-0.65	990.9	-11.2	991.0	969.0	21.94	45.177	
1,100.0	1,100.0	1,090.0	1,090.0	2.4	21.8	-0.65	990.9	-11.2	991.0	966.8	24.16	41.017	
1,200.0	1,200.0	1,190.0	1,190.0	2.6	23.8	-0.65	990.9	-11.2	991.0	964.6	26.38	37.558	
1,300.0	1,300.0	1,290.0	1,290.0	2.8	25.8	-0.65	990.9	-11.2	991.0	962.4	28.61	34.637	
1,400.0	1,400.0	1,390.0	1,390.0	3.0	27.8	-0.65	990.9	-11.2	991.0	960.1	30.83	32.138	
1,500.0	1,500.0	1,490.0	1,490.0	3.3	29.8	-0.65	990.9	-11.2	991.0	957.9	33.06	29.975	
1,600.0	1,600.0	1,590.0	1,590.0	3.5	31.8	-0.65	990.9	-11.2	991.0	955.7	35.28	28.085	
1,700.0	1,700.0	1,690.0	1,690.0	3.7	33.8	-0.65	990.9	-11.2	991.0	953.5	37.51	26.420	
1,800.0	1,800.0	1,790.0	1,790.0	3.9	35.8	-0.65	990.9	-11.2	991.0	951.2	39.73	24.940	
1,900.0	1,900.0	1,890.0	1,890.0	4.2	37.8	-0.65	990.9	-11.2	991.0	949.0	41.96	23.618	
2,000.0	2,000.0	1,990.0	1,990.0	4.4	39.8	-0.65	990.9	-11.2	991.0	946.8	44.18	22.429	
2,100.0	2,100.0	2,090.0	2,090.0	4.6	41.8	-153.05	990.9	-11.2	992.5	946.2	46.36	21.410	
2,200.0	2,199.8	2,189.8	2,189.8	4.8	43.8	-153.14	990.9	-11.2	997.2	948.7	48.46	20.578	
2,300.0	2,299.5	2,289.5	2,289.5	4.9	45.8	-153.30	990.9	-11.2	1,005.0	954.5	50.51	19.898	
2,400.0	2,398.8	2,388.8	2,388.8	5.1	47.8	-153.55	990.9	-11.2	1,015.5	962.9	52.59	19.310	
2,500.0	2,498.0	2,488.0	2,488.0	5.3	49.8	-153.85	990.9	-11.2	1,026.4	971.7	54.75	18.746	
2,600.0	2,597.3	2,587.3	2,587.3	5.6	51.7	-154.15	990.9	-11.2	1,037.4	980.5	56.92	18.224	
2,700.0	2,696.5	2,686.5	2,686.5	5.8	53.7	-154.44	990.9	-11.2	1,048.4	989.3	59.10	17.739	
2,800.0	2,795.8	2,785.8	2,785.8	6.0	55.7	-154.72	990.9	-11.2	1,059.4	998.1	61.28	17.288	
2,900.0	2,895.0	2,885.0	2,885.0	6.3	57.7	-155.00	990.9	-11.2	1,070.4	1,007.0	63.46	16.868	
3,000.0	2,994.3	2,984.3	2,984.3	6.5	59.7	-155.27	990.9	-11.2	1,081.5	1,015.8	65.64	16.475	
3,100.0	3,093.5	3,083.5	3,083.5	6.8	61.7	-155.54	990.9	-11.2	1,092.6	1,024.7	67.83	16.107	
3,200.0	3,192.8	3,182.8	3,182.8	7.1	63.7	-155.80	990.9	-11.2	1,103.7	1,033.7	70.02	15.762	
3,300.0	3,292.1	3,282.1	3,282.1	7.3	65.6	-156.06	990.9	-11.2	1,114.8	1,042.6	72.21	15.438	
3,400.0	3,391.3	3,381.3	3,381.3	7.6	67.6	-156.31	990.9	-11.2	1,126.0	1,051.6	74.41	15.133	
3,500.0	3,490.6	3,480.6	3,480.6	7.9	69.6	-156.55	990.9	-11.2	1,137.1	1,060.5	76.60	14.845	
3,600.0	3,589.8	3,579.8	3,579.8	8.2	71.6	-156.79	990.9	-11.2	1,148.3	1,069.5	78.80	14.573	
3,700.0	3,689.1	3,679.1	3,679.1	8.5	73.6	-157.03	990.9	-11.2	1,159.5	1,078.6	80.99	14.316	
3,800.0	3,788.3	3,778.3	3,778.3	8.8	75.6	-157.26	990.9	-11.2	1,170.8	1,087.6	83.19	14.073	
3,900.0	3,887.6	3,877.6	3,877.6	9.0	77.6	-157.49	990.9	-11.2	1,182.0	1,096.6	85.39	13.842	
4,000.0	3,986.9	3,976.9	3,976.9	9.3	79.5	-157.72	990.9	-11.2	1,193.3	1,105.7	87.59	13.623	
4,100.0	4,086.1	4,076.1	4,076.1	9.6	81.5	-157.93	990.9	-11.2	1,204.6	1,114.8	89.79	13.415	
4,200.0	4,185.4	4,175.4	4,175.4	9.9	83.5	-158.15	990.9	-11.2	1,215.9	1,123.9	92.00	13.217	
4,300.0	4,284.6	4,274.6	4,274.6	10.2	85.5	-158.36	990.9	-11.2	1,227.2	1,133.0	94.20	13.028	
4,400.0	4,383.9	4,373.9	4,373.9	10.5	87.5	-158.57	990.9	-11.2	1,238.5	1,142.1	96.40	12.848	
4,500.0	4,483.1	4,473.1	4,473.1	10.8	89.5	-158.77	990.9	-11.2	1,249.9	1,151.3	98.61	12.676	
4,600.0	4,582.4	4,572.4	4,572.4	11.1	91.4	-158.97	990.9	-11.2	1,261.3	1,160.5	100.81	12.511	
4,700.0	4,681.7	4,671.7	4,671.7	11.4	93.4	-159.19	990.9	-11.2	1,272.5	1,169.4	103.12	12.340	
4,800.0	4,781.2	4,771.2	4,771.2	11.7	95.4	-159.40	990.9	-11.2	1,281.3	1,175.7	105.59	12.134	
4,900.0	4,881.0	4,871.0	4,871.0	11.9	97.4	-159.53	990.9	-11.2	1,286.8	1,178.8	107.96	11.919	
5,000.0	4,981.0	4,971.0	4,971.0	12.1	99.4	-159.59	990.9	-11.2	1,289.1	1,178.8	110.22	11.695	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Guttersen 8T-201
Project:	SEC.8-T3N-R63W	**TVD Reference:**	WELL @ 4900.0ft (RKB - 15')
Reference Site:	Guttersen 8T-HZ Pad Sec.8-T3N-R63W	**MD Reference:**	WELL @ 4900.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 8T-201	**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 (2-05-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Sec.8-T3N-R63W - Guttersen 8D (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7466-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,081.0	5,071.0	5,071.0	12.3	101.4	-7.22	990.9	-11.2	1,289.1	1,176.7	112.42	11.467	
5,200.0	5,181.0	5,171.0	5,171.0	12.4	103.4	-7.22	990.9	-11.2	1,289.1	1,174.5	114.62	11.247	
5,300.0	5,281.0	5,271.0	5,271.0	12.6	105.4	-7.22	990.9	-11.2	1,289.1	1,172.3	116.82	11.035	
5,400.0	5,381.0	5,371.0	5,371.0	12.8	107.4	-7.22	990.9	-11.2	1,289.1	1,170.1	119.03	10.830	
5,500.0	5,481.0	5,471.0	5,471.0	13.0	109.4	-7.22	990.9	-11.2	1,289.1	1,167.9	121.23	10.634	
5,600.0	5,581.0	5,571.0	5,571.0	13.2	111.4	-7.22	990.9	-11.2	1,289.1	1,165.7	123.43	10.444	
5,700.0	5,681.0	5,671.0	5,671.0	13.4	113.4	-7.22	990.9	-11.2	1,289.1	1,163.5	125.64	10.260	
5,800.0	5,781.0	5,771.0	5,771.0	13.5	115.4	-7.22	990.9	-11.2	1,289.1	1,161.3	127.85	10.083	
5,900.0	5,881.0	5,871.0	5,871.0	13.7	117.4	-7.22	990.9	-11.2	1,289.1	1,159.1	130.05	9.912	
6,000.0	5,980.9	5,970.9	5,970.9	13.9	119.4	-7.45	990.9	-11.2	1,284.8	1,153.3	131.47	9.772	
6,100.0	6,079.3	6,069.3	6,069.3	14.0	121.4	-7.72	990.9	-11.2	1,267.8	1,137.1	130.65	9.704	
6,200.0	6,174.7	6,164.7	6,164.7	14.0	123.3	-8.24	990.9	-11.2	1,238.2	1,110.7	127.51	9.711	
6,300.0	6,265.3	6,255.3	6,255.3	14.1	125.1	-9.05	990.9	-11.2	1,196.6	1,074.5	122.10	9.800	
6,400.0	6,349.7	6,339.7	6,339.7	14.1	126.8	-10.27	990.9	-11.2	1,143.6	1,029.0	114.59	9.980	
6,500.0	6,426.4	6,416.4	6,416.4	14.1	128.3	-12.10	990.9	-11.2	1,080.2	974.8	105.40	10.249	
6,600.0	6,494.1	6,484.1	6,484.1	14.2	129.7	-14.87	990.9	-11.2	1,007.6	912.2	95.48	10.554	
6,700.0	6,551.6	6,541.6	6,541.6	14.4	130.8	-19.23	990.9	-11.2	927.1	840.0	87.09	10.645	
6,800.0	6,597.9	6,587.9	6,587.9	14.9	131.8	-26.43	990.9	-11.2	840.1	754.6	85.52	9.824	
6,900.0	6,632.3	6,622.3	6,622.3	15.7	132.4	-38.84	990.9	-11.2	748.4	649.0	99.42	7.528	
7,000.0	6,654.1	6,644.1	6,644.1	16.5	132.9	-59.52	990.9	-11.2	653.6	524.1	129.57	5.045	
7,100.0	6,663.0	6,653.0	6,653.0	17.6	133.1	-85.60	990.9	-11.2	557.9	407.8	150.14	3.716	
7,200.0	6,663.4	6,653.4	6,653.4	18.8	133.1	-89.63	990.9	-11.2	463.4	311.6	151.78	3.053	
7,300.0	6,663.7	6,653.7	6,653.7	20.0	133.1	-89.72	990.9	-11.2	371.7	218.7	153.07	2.429	
7,400.0	6,663.9	6,653.9	6,653.9	21.4	133.1	-89.80	990.9	-11.2	285.7	131.3	154.45	1.850	
7,500.0	6,664.2	6,654.2	6,654.2	22.9	133.1	-89.89	990.9	-11.2	212.3	56.4	155.91	1.362	Level 3
7,600.0	6,664.4	6,654.4	6,654.4	24.4	133.1	-89.97	990.9	-11.2	168.9	11.4	157.43	1.073	Level 2
7,632.8	6,664.5	6,654.5	6,654.5	24.9	133.1	-90.00	990.9	-11.2	165.7	7.7	157.95	1.049	Level 2, CC, ES, SF
7,700.0	6,664.7	6,654.7	6,654.7	26.0	133.1	-90.06	990.9	-11.2	178.8	19.8	159.01	1.124	Level 2
7,800.0	6,664.9	6,654.9	6,654.9	27.6	133.1	-90.14	990.9	-11.2	235.4	74.8	160.63	1.465	Level 3
7,900.0	6,665.2	6,655.2	6,655.2	29.2	133.1	-90.23	990.9	-11.2	314.4	152.1	162.29	1.937	
8,000.0	6,665.4	6,655.4	6,655.4	30.9	133.1	-90.31	990.9	-11.2	402.9	238.9	163.97	2.457	
8,100.0	6,665.6	6,655.6	6,655.6	32.6	133.1	-90.39	990.9	-11.2	495.7	330.0	165.69	2.992	
8,200.0	6,665.9	6,655.9	6,655.9	34.4	133.1	-90.48	990.9	-11.2	590.9	423.5	167.42	3.530	
8,300.0	6,666.1	6,656.1	6,656.1	36.1	133.1	-90.56	990.9	-11.2	687.5	518.3	169.18	4.064	
8,400.0	6,666.4	6,656.4	6,656.4	37.9	133.1	-90.65	990.9	-11.2	784.9	614.0	170.94	4.592	
8,500.0	6,666.6	6,656.6	6,656.6	39.6	133.1	-90.73	990.9	-11.2	882.9	710.2	172.73	5.112	
8,600.0	6,666.9	6,656.9	6,656.9	41.4	133.1	-90.82	990.9	-11.2	981.3	806.8	174.52	5.623	
8,700.0	6,667.1	6,657.1	6,657.1	43.2	133.1	-90.90	990.9	-11.2	1,080.0	903.7	176.33	6.125	
8,800.0	6,667.4	6,657.4	6,657.4	45.0	133.1	-90.99	990.9	-11.2	1,178.9	1,000.8	178.14	6.618	
8,900.0	6,667.6	6,657.6	6,657.6	46.9	133.2	-91.07	990.9	-11.2	1,278.0	1,098.0	179.96	7.102	
9,000.0	6,667.8	6,657.8	6,657.8	48.7	133.2	-91.16	990.9	-11.2	1,377.2	1,195.4	181.79	7.576	
9,100.0	6,668.1	6,658.1	6,658.1	50.5	133.2	-91.24	990.9	-11.2	1,476.5	1,292.9	183.63	8.041	
9,200.0	6,668.3	6,658.3	6,658.3	52.4	133.2	-91.32	990.9	-11.2	1,575.9	1,390.5	185.47	8.497	
9,300.0	6,668.6	6,658.6	6,658.6	54.2	133.2	-91.41	990.9	-11.2	1,675.4	1,488.1	187.31	8.945	
9,400.0	6,668.8	6,658.8	6,658.8	56.1	133.2	-91.49	990.9	-11.2	1,775.0	1,585.8	189.16	9.383	
9,500.0	6,669.1	6,659.1	6,659.1	57.9	133.2	-91.58	990.9	-11.2	1,874.6	1,683.5	191.01	9.814	
9,600.0	6,669.3	6,659.3	6,659.3	59.8	133.2	-91.66	990.9	-11.2	1,974.2	1,781.3	192.87	10.236	
9,700.0	6,669.6	6,659.6	6,659.6	61.6	133.2	-91.75	990.9	-11.2	2,073.8	1,879.1	194.73	10.650	
9,800.0	6,669.8	6,659.8	6,659.8	63.5	133.2	-91.83	990.9	-11.2	2,173.5	1,976.9	196.59	11.056	
9,900.0	6,670.0	6,660.0	6,660.0	65.4	133.2	-91.92	990.9	-11.2	2,273.3	2,074.8	198.46	11.455	
10,000.0	6,670.3	6,660.3	6,660.3	67.2	133.2	-92.00	990.9	-11.2	2,373.0	2,172.7	200.33	11.846	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Guttersen 8T-201
Project:	SEC.8-T3N-R63W	**TVD Reference:**	WELL @ 4900.0ft (RKB - 15')
Reference Site:	Guttersen 8T-HZ Pad Sec.8-T3N-R63W	**MD Reference:**	WELL @ 4900.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 8T-201	**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 (2-05-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Sec.8-T3N-R63W - Guttersen 8D (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7466-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,100.0	6,670.5	6,660.5	6,660.5	69.1	133.2	-92.08	990.9	-11.2	2,472.8	2,270.6	202.19	12.230	
10,200.0	6,670.8	6,660.8	6,660.8	71.0	133.2	-92.17	990.9	-11.2	2,572.6	2,368.5	204.07	12.607	
10,300.0	6,671.0	6,661.0	6,661.0	72.9	133.2	-92.25	990.9	-11.2	2,672.4	2,466.4	205.94	12.977	
10,400.0	6,671.3	6,661.3	6,661.3	74.8	133.2	-92.34	990.9	-11.2	2,772.2	2,564.4	207.81	13.340	
10,500.0	6,671.5	6,661.5	6,661.5	76.6	133.2	-92.42	990.9	-11.2	2,872.0	2,662.3	209.69	13.697	
10,600.0	6,671.8	6,661.8	6,661.8	78.5	133.2	-92.51	990.9	-11.2	2,971.8	2,760.3	211.56	14.047	
10,700.0	6,672.0	6,662.0	6,662.0	80.4	133.2	-92.59	990.9	-11.2	3,071.7	2,858.2	213.44	14.391	
10,800.0	6,672.2	6,662.2	6,662.2	82.3	133.2	-92.67	990.9	-11.2	3,171.5	2,956.2	215.32	14.730	
10,900.0	6,672.5	6,662.5	6,662.5	84.2	133.2	-92.76	990.9	-11.2	3,271.4	3,054.2	217.20	15.062	
11,000.0	6,672.7	6,662.7	6,662.7	86.1	133.3	-92.84	990.9	-11.2	3,371.3	3,152.2	219.07	15.389	
11,100.0	6,673.0	6,663.0	6,663.0	88.0	133.3	-92.93	990.9	-11.2	3,471.2	3,250.2	220.95	15.710	
11,108.7	6,673.0	6,663.0	6,663.0	88.1	133.3	-92.93	990.9	-11.2	3,479.9	3,258.8	221.12	15.738	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Guttersen 8T-201
Project:	SEC.8-T3N-R63W	**TVD Reference:**	WELL @ 4900.0ft (RKB - 15')
Reference Site:	Guttersen 8T-HZ Pad Sec.8-T3N-R63W	**MD Reference:**	WELL @ 4900.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 8T-201	**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 (2-05-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Guttersen 8T-HZ Pad Sec.8-T3N-R63W - Guttersen 8Q-201 - Wellbore #1 - Plan #1 (2-05-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	167.40	-87.4	19.5	89.6				
100.0	100.0	100.0	100.0	0.1	0.1	167.40	-87.4	19.5	89.6	89.4	0.22	398.575	
200.0	200.0	200.0	200.0	0.3	0.3	167.40	-87.4	19.5	89.6	88.9	0.67	132.858	
300.0	300.0	300.1	300.1	0.6	0.6	168.52	-87.7	17.8	89.5	88.4	1.11	80.466	
368.7	368.7	368.8	368.7	0.7	0.7	170.58	-88.2	14.6	89.4	88.0	1.42	63.055	CC
400.0	400.0	400.0	399.8	0.8	0.8	171.87	-88.6	12.7	89.5	87.9	1.56	57.441	ES
500.0	500.0	499.4	498.9	1.0	1.0	177.38	-90.0	4.1	90.1	88.1	2.03	44.486	
600.0	600.0	598.1	596.8	1.2	1.3	-175.21	-91.9	-7.7	92.3	89.8	2.51	36.789	
700.0	700.0	695.9	693.4	1.5	1.6	-166.49	-94.4	-22.7	97.3	94.3	3.00	32.460	
800.0	800.0	792.5	788.2	1.7	2.0	-157.34	-97.4	-40.7	106.2	102.7	3.48	30.533	
900.0	900.0	887.7	881.1	1.9	2.4	-148.63	-100.9	-61.5	119.6	115.7	3.94	30.337	
1,000.0	1,000.0	983.8	974.2	2.1	2.9	-140.99	-104.7	-84.8	137.2	132.8	4.40	31.188	
1,100.0	1,100.0	1,080.6	1,068.1	2.4	3.4	-135.04	-108.7	-108.5	156.9	152.0	4.85	32.346	
1,200.0	1,200.0	1,177.5	1,161.9	2.6	3.9	-130.42	-112.6	-132.2	177.8	172.5	5.31	33.471	
1,300.0	1,300.0	1,274.4	1,255.8	2.8	4.4	-126.78	-116.5	-155.9	199.6	193.8	5.79	34.476	
1,400.0	1,400.0	1,371.3	1,349.6	3.0	4.9	-123.85	-120.5	-179.6	222.0	215.7	6.28	35.347	
1,500.0	1,500.0	1,468.2	1,443.5	3.3	5.4	-121.46	-124.4	-203.3	244.9	238.1	6.79	36.092	
1,600.0	1,600.0	1,565.0	1,537.4	3.5	5.9	-119.48	-128.3	-226.9	268.1	260.8	7.30	36.727	
1,700.0	1,700.0	1,661.9	1,631.2	3.7	6.5	-117.82	-132.2	-250.6	291.6	283.8	7.82	37.272	
1,800.0	1,800.0	1,758.8	1,725.1	3.9	7.0	-116.40	-136.2	-274.3	315.3	306.9	8.35	37.741	
1,900.0	1,900.0	1,855.7	1,818.9	4.2	7.5	-115.18	-140.1	-298.0	339.1	330.2	8.89	38.147	
2,000.0	2,000.0	1,952.6	1,912.8	4.4	8.0	-114.12	-144.0	-321.7	363.1	353.7	9.43	38.502	
2,100.0	2,100.0	2,049.3	2,006.5	4.6	8.5	94.20	-147.9	-345.3	387.3	377.4	9.86	39.280	
2,200.0	2,199.8	2,145.6	2,099.8	4.8	9.1	95.24	-151.8	-368.9	411.9	401.7	10.27	40.095	
2,300.0	2,299.5	2,241.5	2,192.7	4.9	9.6	96.54	-155.7	-392.3	437.3	426.6	10.68	40.930	
2,400.0	2,398.8	2,336.8	2,285.0	5.1	10.1	98.28	-159.6	-415.6	463.4	452.3	11.09	41.789	
2,500.0	2,498.0	2,432.0	2,377.2	5.3	10.6	100.12	-163.5	-438.9	490.1	478.5	11.51	42.587	
2,600.0	2,597.3	2,527.2	2,469.5	5.6	11.1	101.77	-167.3	-462.2	517.2	505.2	11.95	43.291	
2,700.0	2,696.5	2,622.4	2,561.7	5.8	11.6	103.25	-171.2	-485.5	544.6	532.2	12.40	43.910	
2,800.0	2,795.8	2,717.6	2,654.0	6.0	12.1	104.60	-175.0	-508.7	572.4	559.5	12.88	44.454	
2,900.0	2,895.0	2,812.8	2,746.2	6.3	12.6	105.82	-178.9	-532.0	600.5	587.1	13.36	44.932	
3,000.0	2,994.3	2,908.1	2,838.5	6.5	13.1	106.94	-182.8	-555.3	628.8	614.9	13.86	45.353	
3,100.0	3,093.5	3,003.3	2,930.7	6.8	13.7	107.96	-186.6	-578.6	657.2	642.9	14.37	45.725	
3,200.0	3,192.8	3,098.5	3,023.0	7.1	14.2	108.90	-190.5	-601.8	685.9	671.0	14.89	46.054	
3,300.0	3,292.1	3,193.7	3,115.2	7.3	14.7	109.76	-194.3	-625.1	714.7	699.3	15.42	46.347	
3,400.0	3,391.3	3,288.9	3,207.5	7.6	15.2	110.55	-198.2	-648.4	743.7	727.8	15.96	46.607	
3,500.0	3,490.6	3,384.1	3,299.7	7.9	15.7	111.29	-202.1	-671.7	772.8	756.3	16.50	46.839	
3,600.0	3,589.8	3,479.4	3,392.0	8.2	16.2	111.97	-205.9	-695.0	802.0	784.9	17.05	47.048	
3,700.0	3,689.1	3,574.6	3,484.2	8.5	16.7	112.61	-209.8	-718.2	831.3	813.7	17.60	47.235	
3,800.0	3,788.3	3,669.8	3,576.5	8.8	17.3	113.20	-213.6	-741.5	860.7	842.5	18.16	47.404	
3,900.0	3,887.6	3,765.0	3,668.7	9.0	17.8	113.76	-217.5	-764.8	890.1	871.4	18.72	47.557	
4,000.0	3,986.9	3,860.2	3,760.9	9.3	18.3	114.27	-221.4	-788.1	919.7	900.4	19.28	47.696	
4,100.0	4,086.1	3,955.4	3,853.2	9.6	18.8	114.76	-225.2	-811.4	949.3	929.4	19.85	47.823	
4,200.0	4,185.4	4,050.7	3,945.4	9.9	19.3	115.22	-229.1	-834.6	978.9	958.5	20.42	47.939	
4,300.0	4,284.6	4,145.9	4,037.7	10.2	19.8	115.65	-232.9	-857.9	1,008.6	987.6	20.99	48.045	
4,400.0	4,383.9	4,241.1	4,129.9	10.5	20.3	116.05	-236.8	-881.2	1,038.4	1,016.8	21.57	48.142	
4,500.0	4,483.1	4,336.3	4,222.2	10.8	20.8	116.44	-240.7	-904.5	1,068.2	1,046.0	22.15	48.232	
4,600.0	4,582.4	4,431.5	4,314.4	11.1	21.4	116.80	-244.5	-927.8	1,098.0	1,075.3	22.73	48.315	
4,700.0	4,681.7	4,526.8	4,406.7	11.4	21.9	117.31	-248.4	-951.0	1,127.8	1,104.5	23.33	48.349	
4,800.0	4,781.2	4,622.5	4,499.4	11.7	22.4	118.03	-252.3	-974.4	1,156.5	1,132.6	23.93	48.325	
4,900.0	4,881.0	4,718.7	4,592.7	11.9	22.9	118.56	-256.2	-998.0	1,183.6	1,159.1	24.51	48.294	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Guttersen 8T-201
Project:	SEC.8-T3N-R63W	**TVD Reference:**	WELL @ 4900.0ft (RKB - 15')
Reference Site:	Guttersen 8T-HZ Pad Sec.8-T3N-R63W	**MD Reference:**	WELL @ 4900.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 8T-201	**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 (2-05-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Guttersen 8T-HZ Pad Sec.8-T3N-R63W - Guttersen 8Q-201 - Wellbore #1 - Plan #1 (2-05-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,981.0	4,815.4	4,686.3	12.1	23.4	118.90	-260.1	-1,021.6	1,209.1	1,184.1	25.05	48.266	
5,100.0	5,081.0	4,912.3	4,780.2	12.3	24.0	-88.85	-264.0	-1,045.3	1,233.5	1,208.0	25.50	48.369	
5,200.0	5,181.0	5,009.2	4,874.0	12.4	24.5	-89.06	-268.0	-1,069.0	1,257.9	1,232.0	25.95	48.473	
5,300.0	5,281.0	5,106.0	4,967.9	12.6	25.0	-89.26	-271.9	-1,092.7	1,282.3	1,255.9	26.40	48.572	
5,400.0	5,381.0	5,263.3	5,121.0	12.8	25.7	-89.54	-277.8	-1,128.1	1,305.0	1,278.1	26.95	48.422	
5,500.0	5,481.0	5,443.1	5,298.1	13.0	26.2	-89.77	-282.8	-1,158.5	1,321.9	1,294.4	27.49	48.089	
5,600.0	5,581.0	5,626.2	5,480.1	13.2	26.6	-89.92	-286.0	-1,178.1	1,332.6	1,304.6	28.00	47.597	
5,700.0	5,681.0	5,811.1	5,664.8	13.4	26.8	-89.97	-287.4	-1,186.2	1,337.0	1,308.6	28.47	46.958	
5,800.0	5,781.0	5,927.3	5,781.0	13.5	27.0	-89.98	-287.4	-1,186.4	1,337.2	1,308.3	28.84	46.360	
5,900.0	5,881.0	6,027.3	5,881.0	13.7	27.1	-89.98	-287.4	-1,186.4	1,337.2	1,308.0	29.19	45.810	
6,000.0	5,980.9	6,126.9	5,980.5	13.9	27.1	-90.14	-283.1	-1,186.4	1,337.2	1,307.7	29.51	45.317	
6,100.0	6,079.3	6,226.5	6,078.5	14.0	27.2	-90.14	-266.1	-1,186.5	1,337.3	1,307.6	29.70	45.027	
6,200.0	6,174.7	6,326.0	6,173.4	14.0	27.3	-90.13	-236.6	-1,186.5	1,337.4	1,307.6	29.81	44.872	
6,300.0	6,265.3	6,425.6	6,263.8	14.1	27.3	-90.13	-194.9	-1,186.6	1,337.6	1,307.8	29.88	44.774	
6,400.0	6,349.7	6,525.2	6,348.0	14.1	27.3	-90.12	-141.8	-1,186.8	1,337.9	1,307.9	29.98	44.629	
6,500.0	6,426.4	6,624.8	6,424.6	14.1	27.3	-90.10	-78.2	-1,186.9	1,338.3	1,308.1	30.20	44.320	
6,600.0	6,494.1	6,724.5	6,492.3	14.2	27.4	-90.09	-5.2	-1,187.1	1,338.7	1,308.0	30.61	43.732	
6,700.0	6,551.6	6,824.2	6,549.9	14.4	27.5	-90.08	76.1	-1,187.3	1,339.1	1,307.8	31.30	42.784	
6,800.0	6,597.9	6,924.0	6,596.5	14.9	27.6	-90.06	164.2	-1,187.5	1,339.6	1,307.2	32.32	41.452	
6,900.0	6,632.3	7,023.8	6,631.3	15.7	27.9	-90.04	257.7	-1,187.7	1,340.1	1,306.4	33.69	39.781	
7,000.0	6,654.1	7,123.7	6,653.6	16.5	28.2	-90.02	355.0	-1,187.9	1,340.6	1,305.2	35.40	37.870	
7,100.0	6,663.0	7,223.6	6,663.0	17.6	28.7	-90.00	454.5	-1,188.2	1,341.1	1,303.7	37.41	35.846	
7,200.0	6,663.4	7,323.6	6,663.5	18.8	29.3	-90.00	554.5	-1,188.4	1,341.6	1,301.9	39.69	33.803	
7,300.0	6,663.7	7,423.6	6,663.7	20.0	30.0	-90.00	654.5	-1,188.6	1,342.2	1,300.0	42.18	31.817	
7,400.0	6,663.9	7,523.6	6,664.0	21.4	30.8	-90.00	754.5	-1,188.9	1,342.7	1,297.8	44.87	29.925	
7,500.0	6,664.2	7,623.6	6,664.2	22.9	31.8	-90.00	854.5	-1,189.1	1,343.2	1,295.5	47.71	28.153	
7,600.0	6,664.4	7,723.6	6,664.5	24.4	32.8	-90.00	954.5	-1,189.3	1,343.7	1,293.1	50.68	26.512	
7,700.0	6,664.7	7,823.6	6,664.7	26.0	34.0	-90.00	1,054.5	-1,189.6	1,344.3	1,290.5	53.77	25.001	
7,800.0	6,664.9	7,923.6	6,664.9	27.6	35.2	-90.00	1,154.5	-1,189.8	1,344.8	1,287.9	56.94	23.617	
7,900.0	6,665.2	8,023.6	6,665.2	29.2	36.5	-90.00	1,254.5	-1,190.0	1,345.3	1,285.1	60.19	22.350	
8,000.0	6,665.4	8,123.6	6,665.4	30.9	37.9	-90.00	1,354.5	-1,190.3	1,345.9	1,282.3	63.51	21.191	
8,100.0	6,665.6	8,223.6	6,665.7	32.6	39.3	-90.00	1,454.5	-1,190.5	1,346.4	1,279.5	66.88	20.130	
8,200.0	6,665.9	8,323.6	6,665.9	34.4	40.8	-90.00	1,554.5	-1,190.7	1,346.9	1,276.6	70.30	19.158	
8,300.0	6,666.1	8,423.6	6,666.2	36.1	42.3	-90.00	1,654.5	-1,191.0	1,347.4	1,273.7	73.76	18.267	
8,400.0	6,666.4	8,523.6	6,666.4	37.9	43.8	-90.00	1,754.5	-1,191.2	1,348.0	1,270.7	77.26	17.447	
8,500.0	6,666.6	8,623.6	6,666.7	39.6	45.4	-90.00	1,854.5	-1,191.5	1,348.5	1,267.7	80.79	16.692	
8,600.0	6,666.9	8,723.6	6,666.9	41.4	47.0	-90.00	1,954.5	-1,191.7	1,349.0	1,264.7	84.34	15.994	
8,700.0	6,667.1	8,823.6	6,667.1	43.2	48.6	-90.00	2,054.5	-1,191.9	1,349.6	1,261.6	87.92	15.350	
8,800.0	6,667.4	8,923.6	6,667.4	45.0	50.3	-90.00	2,154.5	-1,192.2	1,350.1	1,258.6	91.52	14.752	
8,900.0	6,667.6	9,023.6	6,667.6	46.9	51.9	-90.00	2,254.4	-1,192.4	1,350.6	1,255.5	95.14	14.196	
9,000.0	6,667.8	9,123.6	6,667.9	48.7	53.6	-90.00	2,354.4	-1,192.6	1,351.1	1,252.4	98.77	13.679	
9,100.0	6,668.1	9,223.6	6,668.1	50.5	55.3	-90.00	2,454.4	-1,192.9	1,351.7	1,249.3	102.42	13.197	
9,200.0	6,668.3	9,323.6	6,668.4	52.4	57.0	-90.00	2,554.4	-1,193.1	1,352.2	1,246.1	106.08	12.747	
9,300.0	6,668.6	9,423.6	6,668.6	54.2	58.8	-90.00	2,654.4	-1,193.3	1,352.7	1,243.0	109.76	12.325	
9,400.0	6,668.8	9,523.6	6,668.9	56.1	60.5	-90.00	2,754.4	-1,193.6	1,353.3	1,239.8	113.44	11.929	
9,500.0	6,669.1	9,623.6	6,669.1	57.9	62.3	-90.00	2,854.4	-1,193.8	1,353.8	1,236.7	117.14	11.557	
9,600.0	6,669.3	9,723.6	6,669.3	59.8	64.0	-90.00	2,954.4	-1,194.0	1,354.3	1,233.5	120.84	11.207	
9,700.0	6,669.6	9,823.6	6,669.6	61.6	65.8	-90.00	3,054.4	-1,194.3	1,354.9	1,230.3	124.55	10.878	
9,800.0	6,669.8	9,923.6	6,669.8	63.5	67.6	-90.00	3,154.4	-1,194.5	1,355.4	1,227.1	128.27	10.566	
9,900.0	6,670.0	10,023.6	6,670.1	65.4	69.4	-90.00	3,254.4	-1,194.8	1,355.9	1,223.9	132.00	10.272	
10,000.0	6,670.3	10,123.6	6,670.3	67.2	71.2	-90.00	3,354.4	-1,195.0	1,356.4	1,220.7	135.73	9.994	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Guttersen 8T-201
Project:	SEC.8-T3N-R63W	**TVD Reference:**	WELL @ 4900.0ft (RKB - 15')
Reference Site:	Guttersen 8T-HZ Pad Sec.8-T3N-R63W	**MD Reference:**	WELL @ 4900.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 8T-201	**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 (2-05-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Guttersen 8T-HZ Pad Sec.8-T3N-R63W - Guttersen 8Q-201 - Wellbore #1 - Plan #1 (2-05-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,100.0	6,670.5	10,223.6	6,670.6	69.1	73.0	-90.00	3,454.4	-1,195.2	1,357.0	1,217.5	139.47	9.730	
10,200.0	6,670.8	10,323.6	6,670.8	71.0	74.8	-90.00	3,554.4	-1,195.5	1,357.5	1,214.3	143.21	9.479	
10,300.0	6,671.0	10,423.6	6,671.1	72.9	76.6	-90.00	3,654.4	-1,195.7	1,358.0	1,211.1	146.96	9.241	
10,400.0	6,671.3	10,523.6	6,671.3	74.8	78.4	-90.00	3,754.4	-1,195.9	1,358.6	1,207.8	150.71	9.014	
10,500.0	6,671.5	10,623.6	6,671.5	76.6	80.2	-90.00	3,854.4	-1,196.2	1,359.1	1,204.6	154.47	8.798	
10,600.0	6,671.8	10,723.6	6,671.8	78.5	82.0	-90.00	3,954.4	-1,196.4	1,359.6	1,201.4	158.23	8.593	
10,700.0	6,672.0	10,823.6	6,672.0	80.4	83.9	-90.00	4,054.4	-1,196.6	1,360.1	1,198.2	161.99	8.396	
10,800.0	6,672.2	10,923.6	6,672.3	82.3	85.7	-90.00	4,154.4	-1,196.9	1,360.7	1,194.9	165.76	8.209	
10,900.0	6,672.5	11,023.6	6,672.5	84.2	87.5	-90.00	4,254.4	-1,197.1	1,361.2	1,191.7	169.53	8.029	
11,000.0	6,672.7	11,123.6	6,672.8	86.1	89.4	-90.00	4,354.4	-1,197.3	1,361.7	1,188.4	173.30	7.857	
11,100.0	6,673.0	11,221.0	6,673.0	88.0	91.2	-90.00	4,451.8	-1,197.6	1,362.3	1,185.2	177.03	7.695	
11,108.7	6,673.0	11,221.0	6,673.0	88.1	91.2	-90.00	4,451.8	-1,197.6	1,362.4	1,185.2	177.20	7.688	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Guttersen 8T-201
Project:	SEC.8-T3N-R63W	**TVD Reference:**	WELL @ 4900.0ft (RKB - 15')
Reference Site:	Guttersen 8T-HZ Pad Sec.8-T3N-R63W	**MD Reference:**	WELL @ 4900.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 8T-201	**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 (2-05-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Guttersen 8T-HZ Pad Sec.8-T3N-R63W - Guttersen 8T-341 - Wellbore #1 - Plan #1 (2-05-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	163.96	-29.1	8.4	30.3				
100.0	100.0	100.0	100.0	0.1	0.1	163.96	-29.1	8.4	30.3	30.1	0.22	134.896	
200.0	200.0	200.0	200.0	0.3	0.3	163.96	-29.1	8.4	30.3	29.6	0.67	44.965	
300.0	300.0	300.0	300.0	0.6	0.6	163.96	-29.1	8.4	30.3	29.2	1.12	26.979	
400.0	400.0	400.0	400.0	0.8	0.8	163.96	-29.1	8.4	30.3	28.7	1.57	19.271	
500.0	500.0	500.0	500.0	1.0	1.0	163.96	-29.1	8.4	30.3	28.3	2.02	14.988	
600.0	600.0	600.0	600.0	1.2	1.2	163.96	-29.1	8.4	30.3	27.8	2.47	12.263	
700.0	700.0	700.0	700.0	1.5	1.5	163.96	-29.1	8.4	30.3	27.4	2.92	10.377	
800.0	800.0	800.0	800.0	1.7	1.7	163.96	-29.1	8.4	30.3	26.9	3.37	8.993	
900.0	900.0	900.0	900.0	1.9	1.9	163.96	-29.1	8.4	30.3	26.5	3.82	7.935	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	163.96	-29.1	8.4	30.3	26.0	4.27	7.100	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	163.96	-29.1	8.4	30.3	25.6	4.72	6.424	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	163.96	-29.1	8.4	30.3	25.2	5.17	5.865	CC
1,300.0	1,300.0	1,299.7	1,299.7	2.8	2.8	167.13	-29.9	6.8	30.7	25.1	5.60	5.487	ES
1,400.0	1,400.0	1,399.2	1,399.1	3.0	3.0	176.03	-32.4	2.2	32.5	26.4	6.01	5.397	
1,500.0	1,500.0	1,498.3	1,497.7	3.3	3.2	-171.64	-36.4	-5.3	36.8	30.4	6.44	5.723	
1,600.0	1,600.0	1,596.6	1,595.3	3.5	3.4	-159.27	-41.9	-15.9	45.1	38.2	6.86	6.568	
1,700.0	1,700.0	1,694.3	1,691.9	3.7	3.7	-149.19	-48.9	-29.2	57.6	50.3	7.29	7.897	
1,800.0	1,800.0	1,792.9	1,789.2	3.9	3.9	-142.37	-56.5	-43.6	72.2	64.5	7.72	9.354	
1,900.0	1,900.0	1,891.6	1,886.4	4.2	4.2	-137.89	-64.1	-57.9	87.5	79.3	8.15	10.728	
2,000.0	2,000.0	1,990.2	1,983.7	4.4	4.5	-134.74	-71.7	-72.3	103.1	94.5	8.60	11.994	
2,100.0	2,100.0	2,088.8	2,081.0	4.6	4.9	75.71	-79.3	-86.7	118.6	109.5	9.03	13.126	
2,200.0	2,199.8	2,187.3	2,178.1	4.8	5.2	79.29	-86.8	-101.1	133.6	124.2	9.42	14.187	
2,300.0	2,299.5	2,285.6	2,275.1	4.9	5.5	83.40	-94.4	-115.4	148.7	138.9	9.81	15.158	
2,400.0	2,398.8	2,383.5	2,371.7	5.1	5.9	87.88	-101.9	-129.7	164.4	154.2	10.22	16.085	
2,500.0	2,498.0	2,481.4	2,468.2	5.3	6.2	91.84	-109.4	-143.9	181.0	170.3	10.65	16.989	
2,600.0	2,597.3	2,579.3	2,564.8	5.6	6.6	95.12	-116.9	-158.2	198.3	187.1	11.10	17.855	
2,700.0	2,696.5	2,677.2	2,661.4	5.8	6.9	97.88	-124.5	-172.5	216.1	204.5	11.57	18.672	
2,800.0	2,795.8	2,775.2	2,757.9	6.0	7.3	100.22	-132.0	-186.7	234.3	222.3	12.06	19.435	
2,900.0	2,895.0	2,873.1	2,854.5	6.3	7.6	102.22	-139.5	-201.0	252.9	240.3	12.55	20.144	
3,000.0	2,994.3	2,971.0	2,951.1	6.5	8.0	103.94	-147.0	-215.3	271.7	258.6	13.06	20.802	
3,100.0	3,093.5	3,068.9	3,047.6	6.8	8.3	105.44	-154.6	-229.5	290.7	277.1	13.58	21.411	
3,200.0	3,192.8	3,166.8	3,144.2	7.1	8.7	106.76	-162.1	-243.8	309.9	295.8	14.10	21.975	
3,300.0	3,292.1	3,264.7	3,240.8	7.3	9.1	107.92	-169.6	-258.1	329.2	314.6	14.64	22.496	
3,400.0	3,391.3	3,362.6	3,337.3	7.6	9.4	108.96	-177.1	-272.4	348.7	333.5	15.17	22.980	
3,500.0	3,490.6	3,460.5	3,433.9	7.9	9.8	109.89	-184.7	-286.6	368.2	352.5	15.72	23.428	
3,600.0	3,589.8	3,558.4	3,530.5	8.2	10.2	110.72	-192.2	-300.9	387.9	371.6	16.27	23.845	
3,700.0	3,689.1	3,656.3	3,627.0	8.5	10.6	111.47	-199.7	-315.2	407.6	390.8	16.82	24.232	
3,800.0	3,788.3	3,754.2	3,723.6	8.8	10.9	112.15	-207.2	-329.4	427.3	410.0	17.38	24.593	
3,900.0	3,887.6	3,852.1	3,820.2	9.0	11.3	112.78	-214.7	-343.7	447.2	429.2	17.94	24.930	
4,000.0	3,986.9	3,950.0	3,916.7	9.3	11.7	113.35	-222.3	-358.0	467.0	448.5	18.50	25.245	
4,100.0	4,086.1	4,047.9	4,013.3	9.6	12.1	113.87	-229.8	-372.2	486.9	467.9	19.07	25.539	
4,200.0	4,185.4	4,145.8	4,109.9	9.9	12.4	114.35	-237.3	-386.5	506.9	487.2	19.63	25.816	
4,300.0	4,284.6	4,243.7	4,206.4	10.2	12.8	114.80	-244.8	-400.8	526.9	506.7	20.21	26.075	
4,400.0	4,383.9	4,341.6	4,303.0	10.5	13.2	115.21	-252.4	-415.1	546.9	526.1	20.78	26.319	
4,500.0	4,483.1	4,439.5	4,399.6	10.8	13.6	115.60	-259.9	-429.3	566.9	545.5	21.35	26.548	
4,600.0	4,582.4	4,537.4	4,496.1	11.1	13.9	115.95	-267.4	-443.6	586.9	565.0	21.93	26.765	
4,700.0	4,681.7	4,650.6	4,607.9	11.4	14.3	116.47	-275.6	-459.1	606.1	583.6	22.51	26.922	
4,800.0	4,781.2	4,772.7	4,729.2	11.7	14.6	117.09	-282.2	-471.6	620.6	597.6	23.05	26.931	
4,900.0	4,881.0	4,896.1	4,852.3	11.9	14.8	117.46	-286.4	-479.6	629.8	606.3	23.53	26.770	
5,000.0	4,981.0	5,020.3	4,976.4	12.1	15.0	117.61	-288.1	-482.9	633.6	609.6	23.96	26.447	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Guttersen 8T-201
Project:	SEC.8-T3N-R63W	**TVD Reference:**	WELL @ 4900.0ft (RKB - 15')
Reference Site:	Guttersen 8T-HZ Pad Sec.8-T3N-R63W	**MD Reference:**	WELL @ 4900.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 8T-201	**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 (2-05-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Guttersen 8T-HZ Pad Sec.8-T3N-R63W - Guttersen 8T-341 - Wellbore #1 - Plan #1 (2-05-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,081.0	5,124.9	5,081.0	12.3	15.2	-90.01	-288.1	-482.9	633.7	609.4	24.32	26.056	
5,200.0	5,181.0	5,224.9	5,181.0	12.4	15.3	-90.01	-288.1	-482.9	633.7	609.0	24.68	25.678	
5,300.0	5,281.0	5,324.9	5,281.0	12.6	15.5	-90.01	-288.1	-482.9	633.7	608.6	25.04	25.308	
5,400.0	5,381.0	5,424.9	5,381.0	12.8	15.6	-90.01	-288.1	-482.9	633.7	608.3	25.40	24.945	
5,500.0	5,481.0	5,524.9	5,481.0	13.0	15.8	-90.01	-288.1	-482.9	633.7	607.9	25.77	24.591	
5,600.0	5,581.0	5,624.9	5,581.0	13.2	15.9	-90.01	-288.1	-482.9	633.7	607.5	26.14	24.243	
5,700.0	5,681.0	5,724.9	5,681.0	13.4	16.1	-90.01	-288.1	-482.9	633.7	607.2	26.51	23.904	
5,800.0	5,781.0	5,824.9	5,781.0	13.5	16.3	-90.01	-288.1	-482.9	633.7	606.8	26.88	23.571	
5,900.0	5,881.0	5,924.9	5,881.0	13.7	16.4	-90.01	-288.1	-482.9	633.7	606.4	27.26	23.246	
5,922.4	5,903.4	5,947.3	5,903.4	13.8	16.5	-90.21	-288.1	-482.9	633.7	606.3	27.34	23.175	
6,000.0	5,980.9	6,024.8	5,980.9	13.9	16.6	-90.57	-288.1	-482.9	633.7	606.1	27.60	22.957	
6,100.0	6,079.3	6,125.1	6,081.1	14.0	16.7	-91.69	-283.4	-482.9	634.0	606.2	27.82	22.788	
6,200.0	6,174.7	6,227.3	6,181.6	14.0	16.8	-92.79	-265.3	-483.0	634.6	606.6	27.93	22.723	
6,300.0	6,265.3	6,331.3	6,280.4	14.1	16.9	-93.86	-233.3	-483.0	635.4	607.4	27.96	22.727	
6,400.0	6,349.7	6,437.0	6,375.5	14.1	16.9	-94.87	-187.3	-483.1	636.5	608.5	27.99	22.742	
6,500.0	6,426.4	6,544.5	6,464.7	14.1	16.9	-95.79	-127.5	-483.2	637.7	609.6	28.10	22.698	
6,600.0	6,494.1	6,653.7	6,545.9	14.2	16.8	-96.61	-54.6	-483.3	639.1	610.7	28.39	22.514	
6,700.0	6,551.6	6,764.4	6,616.7	14.4	16.9	-97.31	30.4	-483.5	640.4	611.5	28.96	22.115	
6,800.0	6,597.9	6,876.4	6,675.1	14.9	17.0	-97.88	125.8	-483.7	641.7	611.8	29.88	21.476	
6,900.0	6,632.3	6,989.6	6,719.3	15.7	17.3	-98.29	229.9	-483.9	642.9	611.7	31.21	20.598	
7,000.0	6,654.1	7,103.5	6,747.8	16.5	18.0	-98.55	340.1	-484.0	643.8	610.9	32.94	19.543	
7,100.0	6,663.0	7,217.9	6,759.7	17.6	19.0	-98.64	453.7	-484.2	644.5	609.4	35.04	18.391	
7,200.0	6,663.4	7,320.7	6,760.0	18.8	20.2	-98.61	556.5	-484.4	644.9	607.6	37.35	17.265	
7,300.0	6,663.7	7,420.7	6,760.0	20.0	21.4	-98.58	656.5	-484.6	645.4	605.5	39.87	16.187	
7,400.0	6,663.9	7,520.7	6,760.0	21.4	22.7	-98.56	756.5	-484.8	645.8	603.2	42.58	15.168	
7,500.0	6,664.2	7,620.7	6,760.0	22.9	24.1	-98.53	856.5	-485.0	646.2	600.8	45.44	14.221	
7,600.0	6,664.4	7,720.7	6,760.0	24.4	25.6	-98.50	956.5	-485.1	646.6	598.2	48.43	13.351	
7,700.0	6,664.7	7,820.7	6,760.0	26.0	27.1	-98.47	1,056.5	-485.3	647.1	595.5	51.53	12.556	
7,800.0	6,664.9	7,920.7	6,760.0	27.6	28.6	-98.45	1,156.5	-485.5	647.5	592.8	54.73	11.832	
7,900.0	6,665.2	8,020.7	6,760.0	29.2	30.2	-98.42	1,256.5	-485.7	647.9	589.9	57.99	11.173	
8,000.0	6,665.4	8,120.7	6,760.0	30.9	31.9	-98.39	1,356.5	-485.8	648.4	587.0	61.32	10.574	
8,100.0	6,665.6	8,220.7	6,760.0	32.6	33.6	-98.36	1,456.5	-486.0	648.8	584.1	64.70	10.028	
8,200.0	6,665.9	8,320.7	6,760.0	34.4	35.3	-98.34	1,556.5	-486.2	649.2	581.1	68.13	9.530	
8,300.0	6,666.1	8,420.7	6,760.0	36.1	37.0	-98.31	1,656.5	-486.4	649.6	578.1	71.59	9.074	
8,400.0	6,666.4	8,520.7	6,760.0	37.9	38.7	-98.28	1,756.5	-486.5	650.1	575.0	75.09	8.657	
8,500.0	6,666.6	8,620.7	6,760.0	39.6	40.5	-98.25	1,856.5	-486.7	650.5	571.9	78.62	8.274	
8,600.0	6,666.9	8,720.7	6,760.0	41.4	42.2	-98.23	1,956.5	-486.9	650.9	568.8	82.17	7.922	
8,700.0	6,667.1	8,820.6	6,760.0	43.2	44.0	-98.20	2,056.5	-487.1	651.4	565.6	85.75	7.596	
8,800.0	6,667.4	8,920.6	6,760.0	45.0	45.8	-98.17	2,156.5	-487.3	651.8	562.5	89.34	7.296	
8,900.0	6,667.6	9,020.6	6,760.0	46.9	47.6	-98.14	2,256.5	-487.4	652.2	559.3	92.95	7.017	
9,000.0	6,667.8	9,120.6	6,760.0	48.7	49.4	-98.12	2,356.5	-487.6	652.7	556.1	96.58	6.758	
9,100.0	6,668.1	9,220.6	6,760.0	50.5	51.2	-98.09	2,456.5	-487.8	653.1	552.9	100.22	6.516	
9,200.0	6,668.3	9,320.6	6,760.0	52.4	53.0	-98.06	2,556.5	-488.0	653.5	549.6	103.88	6.291	
9,300.0	6,668.6	9,420.6	6,760.0	54.2	54.9	-98.04	2,656.5	-488.1	653.9	546.4	107.54	6.081	
9,400.0	6,668.8	9,520.6	6,760.0	56.1	56.7	-98.01	2,756.5	-488.3	654.4	543.2	111.22	5.884	
9,500.0	6,669.1	9,620.6	6,760.0	57.9	58.5	-97.98	2,856.5	-488.5	654.8	539.9	114.90	5.699	
9,600.0	6,669.3	9,720.6	6,760.0	59.8	60.4	-97.96	2,956.5	-488.7	655.2	536.6	118.60	5.525	
9,700.0	6,669.6	9,820.6	6,760.0	61.6	62.2	-97.93	3,056.5	-488.8	655.7	533.4	122.30	5.361	
9,800.0	6,669.8	9,920.6	6,760.0	63.5	64.1	-97.90	3,156.5	-489.0	656.1	530.1	126.01	5.207	
9,900.0	6,670.0	10,020.6	6,760.0	65.4	66.0	-97.88	3,256.5	-489.2	656.5	526.8	129.72	5.061	
10,000.0	6,670.3	10,120.6	6,760.0	67.2	67.8	-97.85	3,356.5	-489.4	657.0	523.5	133.44	4.923	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Guttersen 8T-201
Project:	SEC.8-T3N-R63W	**TVD Reference:**	WELL @ 4900.0ft (RKB - 15')
Reference Site:	Guttersen 8T-HZ Pad Sec.8-T3N-R63W	**MD Reference:**	WELL @ 4900.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 8T-201	**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 (2-05-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Guttersen 8T-HZ Pad Sec.8-T3N-R63W - Guttersen 8T-341 - Wellbore #1 - Plan #1 (2-05-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,100.0	6,670.5	10,220.6	6,760.0	69.1	69.7	-97.82	3,456.5	-489.5	657.4	520.2	137.17	4.793	
10,200.0	6,670.8	10,320.6	6,760.0	71.0	71.5	-97.80	3,556.5	-489.7	657.8	516.9	140.90	4.669	
10,300.0	6,671.0	10,420.6	6,760.0	72.9	73.4	-97.77	3,656.5	-489.9	658.3	513.6	144.64	4.551	
10,400.0	6,671.3	10,520.6	6,760.0	74.8	75.3	-97.74	3,756.5	-490.1	658.7	510.3	148.38	4.439	
10,500.0	6,671.5	10,620.6	6,760.0	76.6	77.2	-97.72	3,856.5	-490.2	659.1	507.0	152.12	4.333	
10,600.0	6,671.8	10,720.6	6,760.0	78.5	79.0	-97.69	3,956.5	-490.4	659.6	503.7	155.87	4.232	
10,700.0	6,672.0	10,820.6	6,760.0	80.4	80.9	-97.66	4,056.5	-490.6	660.0	500.4	159.62	4.135	
10,800.0	6,672.2	10,920.6	6,760.0	82.3	82.8	-97.64	4,156.5	-490.8	660.4	497.1	163.38	4.042	
10,900.0	6,672.5	11,020.6	6,760.0	84.2	84.7	-97.61	4,256.5	-491.0	660.9	493.7	167.13	3.954	
11,000.0	6,672.7	11,120.6	6,760.0	86.1	86.6	-97.58	4,356.5	-491.1	661.3	490.4	170.90	3.870	
11,100.0	6,673.0	11,220.6	6,760.0	88.0	88.5	-97.56	4,456.5	-491.3	661.7	487.1	174.66	3.789	
11,108.7	6,673.0	11,223.2	6,760.0	88.1	88.5	-97.56	4,459.1	-491.3	661.8	486.9	174.87	3.784	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Guttersen 8T-201
Project:	SEC.8-T3N-R63W	**TVD Reference:**	WELL @ 4900.0ft (RKB - 15')
Reference Site:	Guttersen 8T-HZ Pad Sec.8-T3N-R63W	**MD Reference:**	WELL @ 4900.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 8T-201	**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 (2-05-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Guttersen 8T-HZ Pad Sec.8-T3N-R63W - Guttersen 8Y-441 - Wellbore #1 - Plan #1 (2-05-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	166.53	-58.3	14.0	59.9				
100.0	100.0	100.0	100.0	0.1	0.1	166.53	-58.3	14.0	59.9	59.7	0.22	266.645	
200.0	200.0	200.0	200.0	0.3	0.3	166.53	-58.3	14.0	59.9	59.3	0.67	88.882	
300.0	300.0	300.0	300.0	0.6	0.6	166.53	-58.3	14.0	59.9	58.8	1.12	53.329	
400.0	400.0	400.0	400.0	0.8	0.8	166.53	-58.3	14.0	59.9	58.4	1.57	38.092	CC, ES
500.0	500.0	499.0	499.0	1.0	1.0	165.09	-58.7	15.6	60.7	58.7	2.01	30.281	
600.0	600.0	597.8	597.6	1.2	1.2	161.03	-59.9	20.6	63.4	60.9	2.44	26.004	
700.0	700.0	696.1	695.6	1.5	1.4	155.04	-61.9	28.8	68.4	65.5	2.89	23.666	
800.0	800.0	793.7	792.5	1.7	1.7	148.14	-64.7	40.2	76.5	73.2	3.37	22.702	
900.0	900.0	890.4	888.0	1.9	2.0	141.31	-68.2	54.6	88.2	84.3	3.88	22.756	
1,000.0	1,000.0	987.1	983.0	2.1	2.3	135.18	-72.5	72.0	103.5	99.1	4.40	23.515	
1,100.0	1,100.0	1,085.2	1,079.3	2.4	2.7	130.44	-76.9	90.3	120.4	115.4	4.94	24.385	
1,200.0	1,200.0	1,183.3	1,175.7	2.6	3.1	126.86	-81.4	108.5	137.8	132.3	5.47	25.214	
1,300.0	1,300.0	1,281.5	1,272.0	2.8	3.5	124.10	-85.8	126.8	155.7	149.7	5.99	25.975	
1,400.0	1,400.0	1,379.6	1,368.3	3.0	3.9	121.90	-90.3	145.1	173.8	167.3	6.52	26.664	
1,500.0	1,500.0	1,477.8	1,464.6	3.3	4.3	120.12	-94.8	163.3	192.1	185.1	7.04	27.285	
1,600.0	1,600.0	1,575.9	1,561.0	3.5	4.7	118.65	-99.2	181.6	210.6	203.0	7.56	27.843	
1,700.0	1,700.0	1,674.1	1,657.3	3.7	5.1	117.42	-103.7	199.9	229.2	221.1	8.09	28.345	
1,800.0	1,800.0	1,772.2	1,753.6	3.9	5.5	116.37	-108.1	218.1	247.8	239.2	8.61	28.799	
1,900.0	1,900.0	1,870.4	1,850.0	4.2	6.0	115.47	-112.6	236.4	266.6	257.5	9.13	29.209	
2,000.0	2,000.0	1,968.5	1,946.3	4.4	6.4	114.68	-117.1	254.7	285.4	275.7	9.65	29.582	
2,100.0	2,100.0	2,066.9	2,042.8	4.6	6.8	-38.36	-121.5	273.0	302.9	293.5	9.40	32.220	
2,200.0	2,199.8	2,165.5	2,139.6	4.8	7.2	-39.37	-126.0	291.3	317.8	308.0	9.82	32.363	
2,300.0	2,299.5	2,264.4	2,236.7	4.9	7.6	-40.69	-130.5	309.8	330.2	319.9	10.24	32.253	
2,400.0	2,398.8	2,363.4	2,333.8	5.1	8.1	-42.33	-135.0	328.2	340.5	329.9	10.66	31.938	
2,500.0	2,498.0	2,462.3	2,430.9	5.3	8.5	-43.99	-139.5	346.6	350.9	339.8	11.10	31.600	
2,600.0	2,597.3	2,561.3	2,528.1	5.6	8.9	-45.56	-144.0	365.0	361.5	349.9	11.56	31.273	
2,700.0	2,696.5	2,660.2	2,625.2	5.8	9.4	-47.04	-148.5	383.4	372.4	360.4	12.03	30.957	
2,800.0	2,795.8	2,759.2	2,722.3	6.0	9.8	-48.43	-153.0	401.8	383.5	371.0	12.51	30.651	
2,900.0	2,895.0	2,858.2	2,819.4	6.3	10.2	-49.74	-157.5	420.3	394.8	381.8	13.01	30.354	
3,000.0	2,994.3	2,957.1	2,916.6	6.5	10.6	-50.98	-162.0	438.7	406.3	392.8	13.51	30.067	
3,100.0	3,093.5	3,056.1	3,013.7	6.8	11.1	-52.15	-166.5	457.1	418.0	404.0	14.03	29.789	
3,200.0	3,192.8	3,155.0	3,110.8	7.1	11.5	-53.26	-171.0	475.5	429.9	415.3	14.56	29.520	
3,300.0	3,292.1	3,254.0	3,207.9	7.3	11.9	-54.31	-175.5	493.9	441.9	426.8	15.10	29.261	
3,400.0	3,391.3	3,352.9	3,305.1	7.6	12.3	-55.30	-180.0	512.4	454.0	438.4	15.65	29.012	
3,500.0	3,490.6	3,451.9	3,402.2	7.9	12.8	-56.25	-184.5	530.8	466.3	450.1	16.21	28.773	
3,600.0	3,589.8	3,550.9	3,499.3	8.2	13.2	-57.14	-189.0	549.2	478.7	461.9	16.77	28.543	
3,700.0	3,689.1	3,649.8	3,596.4	8.5	13.6	-57.99	-193.5	567.6	491.2	473.8	17.34	28.323	
3,800.0	3,788.3	3,748.8	3,693.6	8.8	14.1	-58.79	-198.0	586.0	503.8	485.9	17.92	28.111	
3,900.0	3,887.6	3,847.7	3,790.7	9.0	14.5	-59.56	-202.4	604.5	516.5	498.0	18.51	27.909	
4,000.0	3,986.9	3,946.7	3,887.8	9.3	14.9	-60.29	-206.9	622.9	529.3	510.2	19.10	27.716	
4,100.0	4,086.1	4,045.7	3,984.9	9.6	15.3	-60.99	-211.4	641.3	542.1	522.4	19.69	27.530	
4,200.0	4,185.4	4,144.6	4,082.1	9.9	15.8	-61.65	-215.9	659.7	555.1	534.8	20.29	27.353	
4,300.0	4,284.6	4,243.6	4,179.2	10.2	16.2	-62.28	-220.4	678.1	568.1	547.2	20.90	27.184	
4,400.0	4,383.9	4,342.5	4,276.3	10.5	16.6	-62.89	-224.9	696.6	581.2	559.6	21.51	27.022	
4,500.0	4,483.1	4,441.5	4,373.4	10.8	17.1	-63.47	-229.4	715.0	594.3	572.2	22.12	26.867	
4,600.0	4,582.4	4,540.4	4,470.6	11.1	17.5	-64.02	-233.9	733.4	607.5	584.7	22.74	26.719	
4,700.0	4,681.7	4,639.4	4,567.7	11.4	17.9	-64.61	-238.4	751.8	620.8	597.5	23.35	26.591	
4,800.0	4,781.2	4,738.3	4,664.7	11.7	18.3	-65.15	-242.9	770.2	635.3	611.4	23.89	26.595	
4,900.0	4,881.0	4,837.0	4,761.6	11.9	18.8	-65.43	-247.4	788.6	651.2	626.8	24.38	26.711	
5,000.0	4,981.0	4,935.4	4,858.2	12.1	19.2	-65.45	-251.9	806.9	668.6	643.7	24.82	26.932	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Guttersen 8T-201
Project:	SEC.8-T3N-R63W	**TVD Reference:**	WELL @ 4900.0ft (RKB - 15')
Reference Site:	Guttersen 8T-HZ Pad Sec.8-T3N-R63W	**MD Reference:**	WELL @ 4900.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 8T-201	**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 (2-05-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Guttersen 8T-HZ Pad Sec.8-T3N-R63W - Guttersen 8Y-441 - Wellbore #1 - Plan #1 (2-05-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,081.0	5,033.6	4,954.6	12.3	19.6	87.31	-256.3	825.2	686.9	661.7	25.25	27.203	
5,200.0	5,181.0	5,131.7	5,050.9	12.4	20.0	87.75	-260.8	843.5	705.4	679.7	25.66	27.488	
5,300.0	5,281.0	5,229.9	5,147.2	12.6	20.5	88.17	-265.3	861.7	723.8	697.8	26.07	27.764	
5,400.0	5,381.0	5,328.0	5,243.5	12.8	20.9	88.56	-269.7	880.0	742.3	715.8	26.48	28.029	
5,500.0	5,481.0	5,426.2	5,339.9	13.0	21.3	88.94	-274.2	898.3	760.9	734.0	26.90	28.284	
5,600.0	5,581.0	5,555.3	5,467.1	13.2	21.8	89.37	-279.5	920.0	777.7	750.4	27.33	28.451	
5,700.0	5,681.0	5,690.4	5,601.0	13.4	22.1	89.68	-283.6	936.8	790.1	762.3	27.75	28.473	
5,800.0	5,781.0	5,826.7	5,736.9	13.5	22.3	89.87	-286.2	947.4	797.9	769.8	28.16	28.339	
5,900.0	5,881.0	5,963.9	5,873.9	13.7	22.5	89.95	-287.3	951.8	801.1	772.6	28.56	28.048	
6,000.0	5,980.9	6,070.8	5,980.9	13.9	22.7	90.09	-287.3	952.0	801.2	772.4	28.86	27.766	
6,100.0	6,079.3	6,169.2	6,079.3	14.0	22.8	91.28	-287.3	952.0	801.4	772.4	28.99	27.644	
6,200.0	6,174.7	6,270.5	6,180.3	14.0	22.9	92.93	-280.9	952.0	802.3	773.3	29.01	27.653	
6,300.0	6,265.3	6,375.4	6,283.0	14.1	23.0	94.57	-260.2	952.0	803.8	774.9	28.99	27.726	
6,400.0	6,349.7	6,483.9	6,385.4	14.1	23.0	96.14	-224.2	952.0	805.9	777.0	28.99	27.805	
6,500.0	6,426.4	6,596.4	6,484.9	14.1	23.0	97.64	-172.0	952.1	808.5	779.4	29.07	27.816	
6,600.0	6,494.1	6,713.0	6,578.8	14.2	23.0	99.01	-103.2	952.2	811.2	781.9	29.32	27.671	
6,700.0	6,551.6	6,833.4	6,663.6	14.4	23.0	100.23	-17.9	952.3	814.0	784.1	29.82	27.293	
6,800.0	6,597.9	6,957.5	6,735.9	14.9	23.1	101.25	82.8	952.4	816.5	785.8	30.66	26.630	
6,900.0	6,632.3	7,084.7	6,792.2	15.7	23.3	102.04	196.7	952.5	818.5	786.6	31.89	25.662	
7,000.0	6,654.1	7,214.2	6,829.2	16.5	23.6	102.57	320.7	952.7	819.8	786.3	33.54	24.445	
7,100.0	6,663.0	7,332.3	6,845.4	17.6	24.2	102.87	437.5	952.8	820.6	785.2	35.43	23.161	
7,200.0	6,663.4	7,445.1	6,854.4	18.8	24.9	103.43	550.0	952.9	822.2	784.6	37.64	21.846	
7,300.0	6,663.7	7,551.3	6,855.3	20.0	25.9	103.48	656.2	953.1	822.2	782.1	40.14	20.485	
7,400.0	6,663.9	7,651.3	6,855.6	21.4	26.9	103.48	756.2	953.2	822.0	779.3	42.76	19.226	
7,500.0	6,664.2	7,751.3	6,855.9	22.9	28.0	103.49	856.2	953.3	821.9	776.3	45.53	18.049	
7,600.0	6,664.4	7,851.3	6,856.2	24.4	29.3	103.49	956.2	953.4	821.7	773.3	48.44	16.963	
7,700.0	6,664.7	7,951.3	6,856.5	26.0	30.6	103.50	1,056.2	953.5	821.5	770.1	51.46	15.965	
7,800.0	6,664.9	8,051.3	6,856.7	27.6	32.0	103.51	1,156.2	953.6	821.4	766.8	54.56	15.054	
7,900.0	6,665.2	8,151.3	6,857.0	29.2	33.5	103.51	1,256.2	953.8	821.2	763.5	57.74	14.221	
8,000.0	6,665.4	8,251.3	6,857.3	30.9	35.0	103.52	1,356.2	953.9	821.0	760.0	60.99	13.462	
8,100.0	6,665.6	8,351.3	6,857.6	32.6	36.5	103.52	1,456.2	954.0	820.9	756.6	64.29	12.768	
8,200.0	6,665.9	8,451.3	6,857.9	34.4	38.1	103.53	1,556.2	954.1	820.7	753.1	67.63	12.134	
8,300.0	6,666.1	8,551.3	6,858.1	36.1	39.7	103.53	1,656.2	954.2	820.5	749.5	71.02	11.554	
8,400.0	6,666.4	8,651.3	6,858.4	37.9	41.4	103.54	1,756.2	954.3	820.4	745.9	74.44	11.021	
8,500.0	6,666.6	8,751.3	6,858.7	39.6	43.0	103.54	1,856.2	954.5	820.2	742.3	77.89	10.531	
8,600.0	6,666.9	8,851.3	6,859.0	41.4	44.7	103.55	1,956.2	954.6	820.1	738.7	81.36	10.079	
8,700.0	6,667.1	8,951.3	6,859.2	43.2	46.4	103.55	2,056.2	954.7	819.9	735.0	84.86	9.662	
8,800.0	6,667.4	9,051.3	6,859.5	45.0	48.2	103.56	2,156.2	954.8	819.7	731.3	88.38	9.275	
8,900.0	6,667.6	9,151.3	6,859.8	46.9	49.9	103.56	2,256.2	954.9	819.6	727.7	91.91	8.917	
9,000.0	6,667.8	9,251.3	6,860.1	48.7	51.6	103.57	2,356.2	955.0	819.4	723.9	95.46	8.583	
9,100.0	6,668.1	9,351.3	6,860.4	50.5	53.4	103.57	2,456.2	955.2	819.2	720.2	99.03	8.273	
9,200.0	6,668.3	9,451.3	6,860.6	52.4	55.2	103.58	2,556.2	955.3	819.1	716.5	102.61	7.983	
9,300.0	6,668.6	9,551.3	6,860.9	54.2	57.0	103.58	2,656.2	955.4	818.9	712.7	106.19	7.711	
9,400.0	6,668.8	9,651.3	6,861.2	56.1	58.7	103.59	2,756.2	955.5	818.7	709.0	109.79	7.457	
9,500.0	6,669.1	9,751.3	6,861.5	57.9	60.5	103.59	2,856.2	955.6	818.6	705.2	113.40	7.219	
9,600.0	6,669.3	9,851.3	6,861.8	59.8	62.3	103.60	2,956.2	955.7	818.4	701.4	117.02	6.994	
9,700.0	6,669.6	9,951.3	6,862.0	61.6	64.2	103.61	3,056.2	955.9	818.3	697.6	120.64	6.783	
9,800.0	6,669.8	10,051.3	6,862.3	63.5	66.0	103.61	3,156.2	956.0	818.1	693.8	124.27	6.583	
9,900.0	6,670.0	10,151.3	6,862.6	65.4	67.8	103.62	3,256.2	956.1	817.9	690.0	127.91	6.395	
10,000.0	6,670.3	10,251.3	6,862.9	67.2	69.6	103.62	3,356.2	956.2	817.8	686.2	131.55	6.216	
10,100.0	6,670.5	10,351.3	6,863.2	69.1	71.5	103.63	3,456.2	956.3	817.6	682.4	135.20	6.047	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Guttersen 8T-201
Project:	SEC.8-T3N-R63W	**TVD Reference:**	WELL @ 4900.0ft (RKB - 15')
Reference Site:	Guttersen 8T-HZ Pad Sec.8-T3N-R63W	**MD Reference:**	WELL @ 4900.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 8T-201	**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 (2-05-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Guttersen 8T-HZ Pad Sec.8-T3N-R63W - Guttersen 8Y-441 - Wellbore #1 - Plan #1 (2-05-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

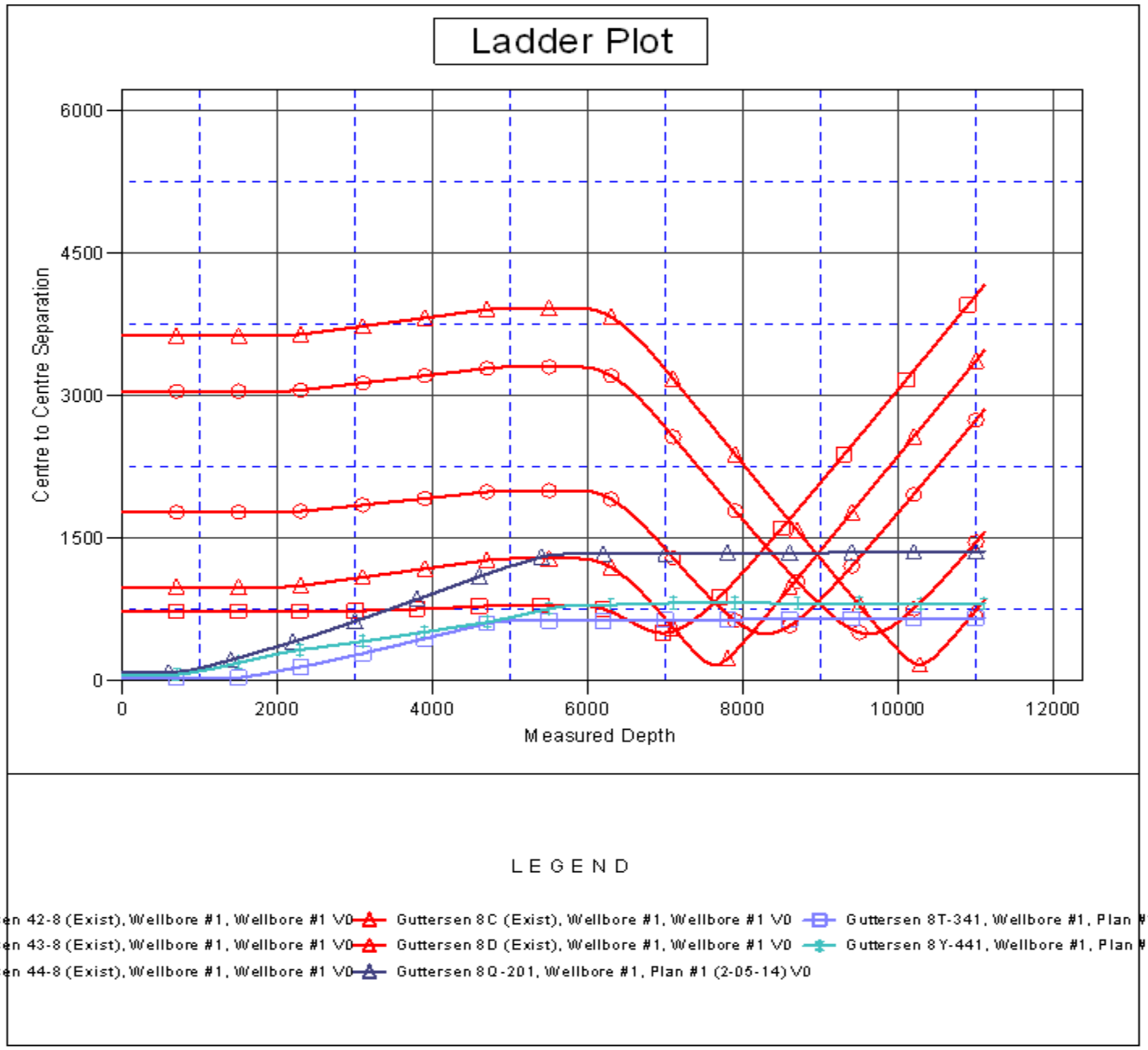
Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,200.0	6,670.8	10,451.3	6,863.4	71.0	73.3	103.63	3,556.2	956.4	817.4	678.6	138.85	5.887	
10,300.0	6,671.0	10,551.3	6,863.7	72.9	75.1	103.64	3,656.2	956.6	817.3	674.8	142.51	5.735	
10,400.0	6,671.3	10,651.3	6,864.0	74.8	77.0	103.64	3,756.2	956.7	817.1	670.9	146.17	5.590	
10,500.0	6,671.5	10,751.3	6,864.3	76.6	78.8	103.65	3,856.2	956.8	816.9	667.1	149.83	5.452	
10,600.0	6,671.8	10,851.3	6,864.6	78.5	80.7	103.65	3,956.2	956.9	816.8	663.3	153.50	5.321	
10,700.0	6,672.0	10,951.3	6,864.8	80.4	82.5	103.66	4,056.2	957.0	816.6	659.4	157.17	5.196	
10,800.0	6,672.2	11,051.3	6,865.1	82.3	84.4	103.66	4,156.2	957.1	816.4	655.6	160.85	5.076	
10,900.0	6,672.5	11,151.3	6,865.4	84.2	86.2	103.67	4,256.2	957.3	816.3	651.8	164.52	4.962	
11,000.0	6,672.7	11,251.3	6,865.7	86.1	88.1	103.67	4,356.2	957.4	816.1	647.9	168.20	4.852	
11,100.0	6,673.0	11,351.3	6,866.0	88.0	90.0	103.68	4,456.2	957.5	816.0	644.1	171.88	4.747	
11,108.7	6,673.0	11,360.0	6,866.0	88.1	90.1	103.68	4,464.9	957.5	815.9	643.7	172.21	4.738	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Guttersen 8T-201
Project:	SEC.8-T3N-R63W	**TVD Reference:**	WELL @ 4900.0ft (RKB - 15')
Reference Site:	Guttersen 8T-HZ Pad Sec.8-T3N-R63W	**MD Reference:**	WELL @ 4900.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 8T-201	**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 (2-05-14)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4900.0ft (RKB - 15')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Guttersen 8T-201
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.67°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Guttersen 8T-201
Project:	SEC.8-T3N-R63W	**TVD Reference:**	WELL @ 4900.0ft (RKB - 15')
Reference Site:	Guttersen 8T-HZ Pad Sec.8-T3N-R63W	**MD Reference:**	WELL @ 4900.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 8T-201	**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 (2-05-14)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4900.0ft (RKB - 15')	Coordinates are relative to: Guttersen 8T-201
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: 0.67°