PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Guttersen 31T-401**

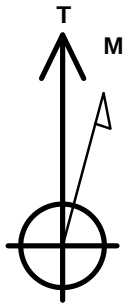
Surface Location: Guttersen 31Y-201 Pad Sec.31-T3N-R63W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4836.0

+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.0	0.0	1308210.93	3287065.77	40.174870	-104.472670	

RKB - 15' WELL @ 4851.0ft (RKB - 15')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
BHL 500' FNL, 1140' FEL	6830.0	4695.8	-706.9	Point



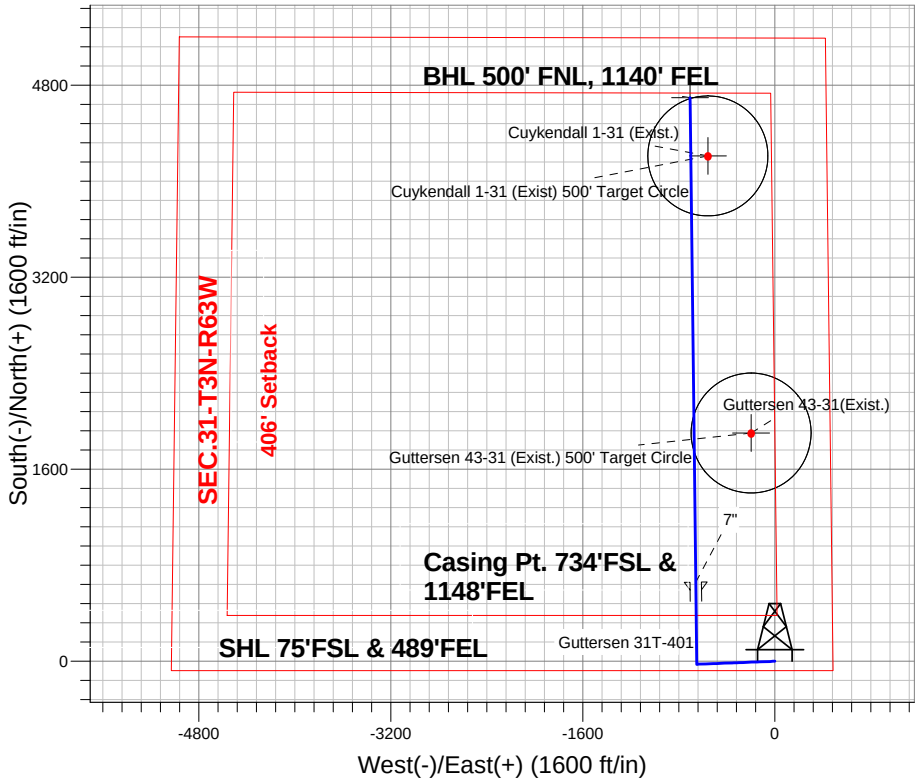
Azimuths to True North
Magnetic North: 8.42°

Magnetic Field
Strength: 52837.4snT
Dip Angle: 66.85°
Date: 5/31/2013
Model: IGRF2010

Guttersen 31Y-201 Pad Sec.31-T3N-R63W
Guttersen 31T-401
Plan #1 (5-31-13)
15:20, May 31 2013

ANNOTATIONS

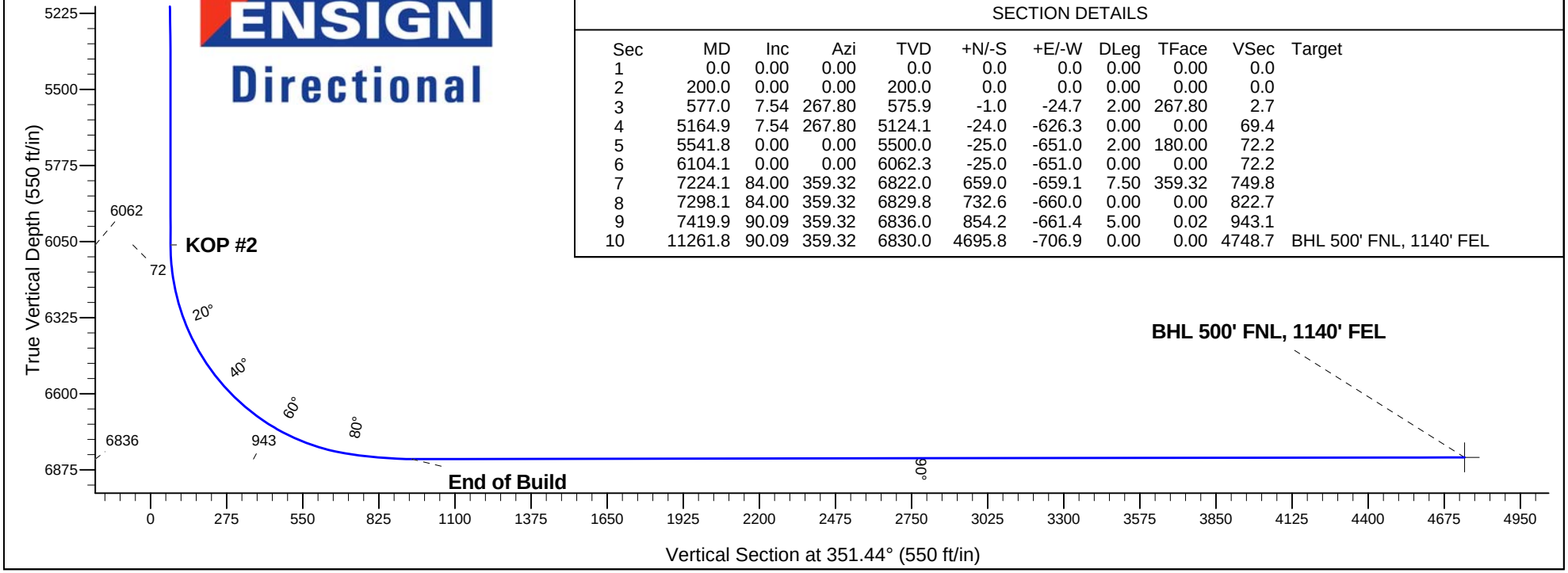
TVD	MD	Annotation
200.0	200.0	KOP #1
6062.3	6104.1	KOP #2
6836.0	7419.9	End of Build



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	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	577.0	7.54	267.80	575.9	-1.0	-24.7	2.00	267.80	2.7	
4	5164.9	7.54	267.80	5124.1	-24.0	-626.3	0.00	0.00	69.4	
5	5541.8	0.00	0.00	5500.0	-25.0	-651.0	2.00	180.00	72.2	
6	6104.1	0.00	0.00	6062.3	-25.0	-651.0	0.00	0.00	72.2	
7	7224.1	84.00	359.32	6822.0	659.0	-659.1	7.50	359.32	749.8	
8	7298.1	84.00	359.32	6829.8	732.6	-660.0	0.00	0.00	822.7	
9	7419.9	90.09	359.32	6836.0	854.2	-661.4	5.00	0.02	943.1	
10	11261.8	90.09	359.32	6830.0	4695.8	-706.9	0.00	0.00	4748.7	BHL 500' FNL, 1140' FEL



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.31-T3N-R63W
Guttersen 31Y-201 Pad Sec.31-T3N-R63W
Guttersen 31T-401

Wellbore #1

Plan: Plan #1 (5-31-13)

Standard Planning Report

31 May, 2013

Database:	Landmark	**Local Co-ordinate Reference:**	Well Guttersen 31T-401
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 4851.0ft (RKB - 15')
Project:	SEC.31-T3N-R63W	**MD Reference:**	WELL @ 4851.0ft (RKB - 15')
Site:	Guttersen 31Y-201 Pad Sec.31-T3N-R63W	**North Reference:**	True
Well:	Guttersen 31T-401	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (5-31-13)		

Project SEC.31-T3N-R63W, Weld County, Colorado

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site Guttersen 31Y-201 Pad Sec.31-T3N-R63W

Site Position:		**Northing:**	1,308,211.98 ft	**Latitude:**	40.174870
From:	Lat/Long	**Easting:**	3,287,155.18 ft	**Longitude:**	-104.472350
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	0.66 °

Well Guttersen 31T-401

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,308,210.93 ft	**Latitude:**	40.174870
	+E/-W	-89.4 ft	**Easting:**	3,287,065.77 ft	**Longitude:**	-104.472670
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,836.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/31/2013	8.42	66.85	52,837

Design Plan #1 (5-31-13)

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	351.44

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	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
577.0	7.54	267.80	575.9	-1.0	-24.7	2.00	2.00	0.00	267.80	
5,164.9	7.54	267.80	5,124.1	-24.0	-626.3	0.00	0.00	0.00	0.00	
5,541.8	0.00	0.00	5,500.0	-25.0	-651.0	2.00	-2.00	0.00	180.00	
6,104.1	0.00	0.00	6,062.3	-25.0	-651.0	0.00	0.00	0.00	0.00	
7,224.1	84.00	359.32	6,822.0	659.0	-659.1	7.50	7.50	0.00	359.32	
7,298.1	84.00	359.32	6,829.8	732.6	-660.0	0.00	0.00	0.00	0.00	
7,419.9	90.09	359.32	6,836.0	854.2	-661.4	5.00	5.00	0.00	0.02	
11,261.8	90.09	359.32	6,830.0	4,695.8	-706.9	0.00	0.00	0.00	0.00	BHL 500' FNL, 114(

Database:	Landmark	**Local Co-ordinate Reference:**	Well Guttersen 31T-401
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 4851.0ft (RKB - 15')
Project:	SEC.31-T3N-R63W	**MD Reference:**	WELL @ 4851.0ft (RKB - 15')
Site:	Guttersen 31Y-201 Pad Sec.31-T3N-R63W	**North Reference:**	True
Well:	Guttersen 31T-401	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (5-31-13)		

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
Guttersen 43-31 (Exist.) 500' Target Circle									
14.0	0.00	0.00	14.0	0.0	0.0	0.0	0.00	0.00	0.00
Cuykendall 1-31 (Exist) 500' Target Circle									
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	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
KOP #1									
240.0	0.80	267.80	240.0	0.0	-0.3	0.0	2.00	2.00	0.00
280.0	1.60	267.80	280.0	0.0	-1.1	0.1	2.00	2.00	0.00
320.0	2.40	267.80	320.0	-0.1	-2.5	0.3	2.00	2.00	0.00
360.0	3.20	267.80	359.9	-0.2	-4.5	0.5	2.00	2.00	0.00
400.0	4.00	267.80	399.8	-0.3	-7.0	0.8	2.00	2.00	0.00
440.0	4.80	267.80	439.7	-0.4	-10.0	1.1	2.00	2.00	0.00
480.0	5.60	267.80	479.6	-0.5	-13.7	1.5	2.00	2.00	0.00
520.0	6.40	267.80	519.3	-0.7	-17.8	2.0	2.00	2.00	0.00
560.0	7.20	267.80	559.1	-0.9	-22.6	2.5	2.00	2.00	0.00
577.0	7.54	267.80	575.9	-1.0	-24.7	2.7	2.00	2.00	0.00
600.0	7.54	267.80	598.7	-1.1	-27.8	3.1	0.00	0.00	0.00
640.0	7.54	267.80	638.4	-1.3	-33.0	3.7	0.00	0.00	0.00
680.0	7.54	267.80	678.0	-1.5	-38.3	4.2	0.00	0.00	0.00
720.0	7.54	267.80	717.7	-1.7	-43.5	4.8	0.00	0.00	0.00
760.0	7.54	267.80	757.3	-1.9	-48.7	5.4	0.00	0.00	0.00
800.0	7.54	267.80	797.0	-2.1	-54.0	6.0	0.00	0.00	0.00
840.0	7.54	267.80	836.6	-2.3	-59.2	6.6	0.00	0.00	0.00
880.0	7.54	267.80	876.3	-2.5	-64.5	7.1	0.00	0.00	0.00
920.0	7.54	267.80	915.9	-2.7	-69.7	7.7	0.00	0.00	0.00
960.0	7.54	267.80	955.6	-2.9	-75.0	8.3	0.00	0.00	0.00
1,000.0	7.54	267.80	995.3	-3.1	-80.2	8.9	0.00	0.00	0.00
1,040.0	7.54	267.80	1,034.9	-3.3	-85.5	9.5	0.00	0.00	0.00
1,080.0	7.54	267.80	1,074.6	-3.5	-90.7	10.1	0.00	0.00	0.00
1,120.0	7.54	267.80	1,114.2	-3.7	-95.9	10.6	0.00	0.00	0.00
1,160.0	7.54	267.80	1,153.9	-3.9	-101.2	11.2	0.00	0.00	0.00
1,200.0	7.54	267.80	1,193.5	-4.1	-106.4	11.8	0.00	0.00	0.00
1,240.0	7.54	267.80	1,233.2	-4.3	-111.7	12.4	0.00	0.00	0.00
1,280.0	7.54	267.80	1,272.8	-4.5	-116.9	13.0	0.00	0.00	0.00
1,320.0	7.54	267.80	1,312.5	-4.7	-122.2	13.5	0.00	0.00	0.00
1,360.0	7.54	267.80	1,352.1	-4.9	-127.4	14.1	0.00	0.00	0.00
1,400.0	7.54	267.80	1,391.8	-5.1	-132.7	14.7	0.00	0.00	0.00
1,440.0	7.54	267.80	1,431.5	-5.3	-137.9	15.3	0.00	0.00	0.00
1,480.0	7.54	267.80	1,471.1	-5.5	-143.1	15.9	0.00	0.00	0.00
1,520.0	7.54	267.80	1,510.8	-5.7	-148.4	16.5	0.00	0.00	0.00
1,560.0	7.54	267.80	1,550.4	-5.9	-153.6	17.0	0.00	0.00	0.00
1,600.0	7.54	267.80	1,590.1	-6.1	-158.9	17.6	0.00	0.00	0.00
1,640.0	7.54	267.80	1,629.7	-6.3	-164.1	18.2	0.00	0.00	0.00
1,680.0	7.54	267.80	1,669.4	-6.5	-169.4	18.8	0.00	0.00	0.00
1,720.0	7.54	267.80	1,709.0	-6.7	-174.6	19.4	0.00	0.00	0.00
1,760.0	7.54	267.80	1,748.7	-6.9	-179.9	19.9	0.00	0.00	0.00
1,800.0	7.54	267.80	1,788.3	-7.1	-185.1	20.5	0.00	0.00	0.00
1,840.0	7.54	267.80	1,828.0	-7.3	-190.3	21.1	0.00	0.00	0.00

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Project:	SEC.31-T3N-R63W	**MD Reference:**	WELL @ 4851.0ft (RKB - 15')
Site:	Guttersen 31Y-201 Pad Sec.31-T3N-R63W	**North Reference:**	True
Well:	Guttersen 31T-401	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (5-31-13)		

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)
1,880.0	7.54	267.80	1,867.6	-7.5	-195.6	21.7	0.00	0.00	0.00
1,920.0	7.54	267.80	1,907.3	-7.7	-200.8	22.3	0.00	0.00	0.00
1,960.0	7.54	267.80	1,947.0	-7.9	-206.1	22.8	0.00	0.00	0.00
2,000.0	7.54	267.80	1,986.6	-8.1	-211.3	23.4	0.00	0.00	0.00
2,040.0	7.54	267.80	2,026.3	-8.3	-216.6	24.0	0.00	0.00	0.00
2,080.0	7.54	267.80	2,065.9	-8.5	-221.8	24.6	0.00	0.00	0.00
2,120.0	7.54	267.80	2,105.6	-8.7	-227.0	25.2	0.00	0.00	0.00
2,160.0	7.54	267.80	2,145.2	-8.9	-232.3	25.8	0.00	0.00	0.00
2,200.0	7.54	267.80	2,184.9	-9.1	-237.5	26.3	0.00	0.00	0.00
2,240.0	7.54	267.80	2,224.5	-9.3	-242.8	26.9	0.00	0.00	0.00
2,280.0	7.54	267.80	2,264.2	-9.5	-248.0	27.5	0.00	0.00	0.00
2,320.0	7.54	267.80	2,303.8	-9.7	-253.3	28.1	0.00	0.00	0.00
2,360.0	7.54	267.80	2,343.5	-9.9	-258.5	28.7	0.00	0.00	0.00
2,400.0	7.54	267.80	2,383.2	-10.1	-263.8	29.2	0.00	0.00	0.00
2,440.0	7.54	267.80	2,422.8	-10.3	-269.0	29.8	0.00	0.00	0.00
2,480.0	7.54	267.80	2,462.5	-10.5	-274.2	30.4	0.00	0.00	0.00
2,520.0	7.54	267.80	2,502.1	-10.7	-279.5	31.0	0.00	0.00	0.00
2,560.0	7.54	267.80	2,541.8	-10.9	-284.7	31.6	0.00	0.00	0.00
2,600.0	7.54	267.80	2,581.4	-11.1	-290.0	32.2	0.00	0.00	0.00
2,640.0	7.54	267.80	2,621.1	-11.3	-295.2	32.7	0.00	0.00	0.00
2,680.0	7.54	267.80	2,660.7	-11.5	-300.5	33.3	0.00	0.00	0.00
2,720.0	7.54	267.80	2,700.4	-11.7	-305.7	33.9	0.00	0.00	0.00
2,760.0	7.54	267.80	2,740.0	-11.9	-311.0	34.5	0.00	0.00	0.00
2,800.0	7.54	267.80	2,779.7	-12.1	-316.2	35.1	0.00	0.00	0.00
2,840.0	7.54	267.80	2,819.4	-12.3	-321.4	35.6	0.00	0.00	0.00
2,880.0	7.54	267.80	2,859.0	-12.5	-326.7	36.2	0.00	0.00	0.00
2,920.0	7.54	267.80	2,898.7	-12.7	-331.9	36.8	0.00	0.00	0.00
2,960.0	7.54	267.80	2,938.3	-12.9	-337.2	37.4	0.00	0.00	0.00
3,000.0	7.54	267.80	2,978.0	-13.1	-342.4	38.0	0.00	0.00	0.00
3,040.0	7.54	267.80	3,017.6	-13.4	-347.7	38.5	0.00	0.00	0.00
3,080.0	7.54	267.80	3,057.3	-13.6	-352.9	39.1	0.00	0.00	0.00
3,120.0	7.54	267.80	3,096.9	-13.8	-358.2	39.7	0.00	0.00	0.00
3,160.0	7.54	267.80	3,136.6	-14.0	-363.4	40.3	0.00	0.00	0.00
3,200.0	7.54	267.80	3,176.2	-14.2	-368.6	40.9	0.00	0.00	0.00
3,240.0	7.54	267.80	3,215.9	-14.4	-373.9	41.5	0.00	0.00	0.00
3,280.0	7.54	267.80	3,255.5	-14.6	-379.1	42.0	0.00	0.00	0.00
3,320.0	7.54	267.80	3,295.2	-14.8	-384.4	42.6	0.00	0.00	0.00
3,360.0	7.54	267.80	3,334.9	-15.0	-389.6	43.2	0.00	0.00	0.00
3,400.0	7.54	267.80	3,374.5	-15.2	-394.9	43.8	0.00	0.00	0.00
3,440.0	7.54	267.80	3,414.2	-15.4	-400.1	44.4	0.00	0.00	0.00
3,480.0	7.54	267.80	3,453.8	-15.6	-405.4	44.9	0.00	0.00	0.00
3,520.0	7.54	267.80	3,493.5	-15.8	-410.6	45.5	0.00	0.00	0.00
3,560.0	7.54	267.80	3,533.1	-16.0	-415.8	46.1	0.00	0.00	0.00
3,600.0	7.54	267.80	3,572.8	-16.2	-421.1	46.7	0.00	0.00	0.00
3,640.0	7.54	267.80	3,612.4	-16.4	-426.3	47.3	0.00	0.00	0.00
3,680.0	7.54	267.80	3,652.1	-16.6	-431.6	47.9	0.00	0.00	0.00
3,720.0	7.54	267.80	3,691.7	-16.8	-436.8	48.4	0.00	0.00	0.00
3,760.0	7.54	267.80	3,731.4	-17.0	-442.1	49.0	0.00	0.00	0.00
3,800.0	7.54	267.80	3,771.1	-17.2	-447.3	49.6	0.00	0.00	0.00
3,840.0	7.54	267.80	3,810.7	-17.4	-452.6	50.2	0.00	0.00	0.00
3,880.0	7.54	267.80	3,850.4	-17.6	-457.8	50.8	0.00	0.00	0.00
3,920.0	7.54	267.80	3,890.0	-17.8	-463.0	51.3	0.00	0.00	0.00
3,960.0	7.54	267.80	3,929.7	-18.0	-468.3	51.9	0.00	0.00	0.00

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Project:	SEC.31-T3N-R63W	**MD Reference:**	WELL @ 4851.0ft (RKB - 15')
Site:	Guttersen 31Y-201 Pad Sec.31-T3N-R63W	**North Reference:**	True
Well:	Guttersen 31T-401	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (5-31-13)		

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)
4,000.0	7.54	267.80	3,969.3	-18.2	-473.5	52.5	0.00	0.00	0.00
4,040.0	7.54	267.80	4,009.0	-18.4	-478.8	53.1	0.00	0.00	0.00
4,080.0	7.54	267.80	4,048.6	-18.6	-484.0	53.7	0.00	0.00	0.00
4,120.0	7.54	267.80	4,088.3	-18.8	-489.3	54.2	0.00	0.00	0.00
4,160.0	7.54	267.80	4,127.9	-19.0	-494.5	54.8	0.00	0.00	0.00
4,200.0	7.54	267.80	4,167.6	-19.2	-499.8	55.4	0.00	0.00	0.00
4,240.0	7.54	267.80	4,207.2	-19.4	-505.0	56.0	0.00	0.00	0.00
4,280.0	7.54	267.80	4,246.9	-19.6	-510.2	56.6	0.00	0.00	0.00
4,320.0	7.54	267.80	4,286.6	-19.8	-515.5	57.2	0.00	0.00	0.00
4,360.0	7.54	267.80	4,326.2	-20.0	-520.7	57.7	0.00	0.00	0.00
4,400.0	7.54	267.80	4,365.9	-20.2	-526.0	58.3	0.00	0.00	0.00
4,440.0	7.54	267.80	4,405.5	-20.4	-531.2	58.9	0.00	0.00	0.00
4,480.0	7.54	267.80	4,445.2	-20.6	-536.5	59.5	0.00	0.00	0.00
4,520.0	7.54	267.80	4,484.8	-20.8	-541.7	60.1	0.00	0.00	0.00
4,560.0	7.54	267.80	4,524.5	-21.0	-547.0	60.6	0.00	0.00	0.00
4,600.0	7.54	267.80	4,564.1	-21.2	-552.2	61.2	0.00	0.00	0.00
4,640.0	7.54	267.80	4,603.8	-21.4	-557.4	61.8	0.00	0.00	0.00
4,680.0	7.54	267.80	4,643.4	-21.6	-562.7	62.4	0.00	0.00	0.00
4,720.0	7.54	267.80	4,683.1	-21.8	-567.9	63.0	0.00	0.00	0.00
4,760.0	7.54	267.80	4,722.8	-22.0	-573.2	63.6	0.00	0.00	0.00
4,800.0	7.54	267.80	4,762.4	-22.2	-578.4	64.1	0.00	0.00	0.00
4,840.0	7.54	267.80	4,802.1	-22.4	-583.7	64.7	0.00	0.00	0.00
4,880.0	7.54	267.80	4,841.7	-22.6	-588.9	65.3	0.00	0.00	0.00
4,920.0	7.54	267.80	4,881.4	-22.8	-594.1	65.9	0.00	0.00	0.00
4,960.0	7.54	267.80	4,921.0	-23.0	-599.4	66.5	0.00	0.00	0.00
5,000.0	7.54	267.80	4,960.7	-23.2	-604.6	67.0	0.00	0.00	0.00
5,040.0	7.54	267.80	5,000.3	-23.4	-609.9	67.6	0.00	0.00	0.00
5,080.0	7.54	267.80	5,040.0	-23.6	-615.1	68.2	0.00	0.00	0.00
5,120.0	7.54	267.80	5,079.6	-23.8	-620.4	68.8	0.00	0.00	0.00
5,160.0	7.54	267.80	5,119.3	-24.0	-625.6	69.4	0.00	0.00	0.00
5,164.9	7.54	267.80	5,124.1	-24.0	-626.3	69.4	0.00	0.00	0.00
5,200.0	6.84	267.80	5,159.0	-24.2	-630.6	69.9	2.00	-2.00	0.00
5,240.0	6.04	267.80	5,198.7	-24.4	-635.1	70.4	2.00	-2.00	0.00
5,280.0	5.24	267.80	5,238.5	-24.5	-639.1	70.9	2.00	-2.00	0.00
5,320.0	4.44	267.80	5,278.4	-24.7	-642.4	71.2	2.00	-2.00	0.00
5,360.0	3.64	267.80	5,318.3	-24.8	-645.2	71.5	2.00	-2.00	0.00
5,400.0	2.84	267.80	5,358.2	-24.9	-647.5	71.8	2.00	-2.00	0.00
5,440.0	2.04	267.80	5,398.2	-24.9	-649.2	72.0	2.00	-2.00	0.00
5,480.0	1.24	267.80	5,438.2	-25.0	-650.3	72.1	2.00	-2.00	0.00
5,520.0	0.44	267.80	5,478.2	-25.0	-650.9	72.2	2.00	-2.00	0.00
5,541.8	0.00	0.00	5,500.0	-25.0	-651.0	72.2	2.00	-2.00	0.00
5,560.0	0.00	0.00	5,518.2	-25.0	-651.0	72.2	0.00	0.00	0.00
5,600.0	0.00	0.00	5,558.2	-25.0	-651.0	72.2	0.00	0.00	0.00
5,640.0	0.00	0.00	5,598.2	-25.0	-651.0	72.2	0.00	0.00	0.00
5,680.0	0.00	0.00	5,638.2	-25.0	-651.0	72.2	0.00	0.00	0.00
5,720.0	0.00	0.00	5,678.2	-25.0	-651.0	72.2	0.00	0.00	0.00
5,760.0	0.00	0.00	5,718.2	-25.0	-651.0	72.2	0.00	0.00	0.00
5,800.0	0.00	0.00	5,758.2	-25.0	-651.0	72.2	0.00	0.00	0.00
5,840.0	0.00	0.00	5,798.2	-25.0	-651.0	72.2	0.00	0.00	0.00
5,880.0	0.00	0.00	5,838.2	-25.0	-651.0	72.2	0.00	0.00	0.00
5,920.0	0.00	0.00	5,878.2	-25.0	-651.0	72.2	0.00	0.00	0.00
5,960.0	0.00	0.00	5,918.2	-25.0	-651.0	72.2	0.00	0.00	0.00
6,000.0	0.00	0.00	5,958.2	-25.0	-651.0	72.2	0.00	0.00	0.00

Database:	Landmark	**Local Co-ordinate Reference:**	Well Guttersen 31T-401
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 4851.0ft (RKB - 15')
Project:	SEC.31-T3N-R63W	**MD Reference:**	WELL @ 4851.0ft (RKB - 15')
Site:	Guttersen 31Y-201 Pad Sec.31-T3N-R63W	**North Reference:**	True
Well:	Guttersen 31T-401	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (5-31-13)		

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)
6,040.0	0.00	0.00	5,998.2	-25.0	-651.0	72.2	0.00	0.00	0.00
6,080.0	0.00	0.00	6,038.2	-25.0	-651.0	72.2	0.00	0.00	0.00
6,104.1	0.00	0.00	6,062.3	-25.0	-651.0	72.2	0.00	0.00	0.00
KOP #2									
6,120.0	1.19	359.32	6,078.2	-24.8	-651.0	72.3	7.50	7.50	0.00
6,160.0	4.19	359.32	6,118.1	-23.0	-651.0	74.2	7.50	7.50	0.00
6,200.0	7.19	359.32	6,157.9	-19.0	-651.1	78.1	7.50	7.50	0.00
6,240.0	10.19	359.32	6,197.5	-12.9	-651.1	84.1	7.50	7.50	0.00
6,280.0	13.19	359.32	6,236.6	-4.8	-651.2	92.2	7.50	7.50	0.00
6,320.0	16.19	359.32	6,275.3	5.3	-651.4	102.2	7.50	7.50	0.00
6,360.0	19.19	359.32	6,313.4	17.5	-651.5	114.2	7.50	7.50	0.00
6,400.0	22.19	359.32	6,350.8	31.6	-651.7	128.2	7.50	7.50	0.00
6,440.0	25.19	359.32	6,387.4	47.7	-651.9	144.2	7.50	7.50	0.00
6,480.0	28.19	359.32	6,423.2	65.6	-652.1	162.0	7.50	7.50	0.00
6,520.0	31.19	359.32	6,457.9	85.4	-652.3	181.6	7.50	7.50	0.00
6,560.0	34.19	359.32	6,491.6	107.0	-652.6	203.0	7.50	7.50	0.00
6,600.0	37.19	359.32	6,524.1	130.4	-652.8	226.1	7.50	7.50	0.00
6,640.0	40.19	359.32	6,555.3	155.4	-653.1	250.9	7.50	7.50	0.00
6,680.0	43.19	359.32	6,585.1	182.0	-653.5	277.2	7.50	7.50	0.00
6,720.0	46.19	359.32	6,613.6	210.1	-653.8	305.1	7.50	7.50	0.00
6,760.0	49.19	359.32	6,640.5	239.7	-654.1	334.4	7.50	7.50	0.00
6,800.0	52.19	359.32	6,665.8	270.6	-654.5	365.0	7.50	7.50	0.00
6,840.0	55.19	359.32	6,689.5	302.8	-654.9	397.0	7.50	7.50	0.00
6,880.0	58.19	359.32	6,711.5	336.3	-655.3	430.1	7.50	7.50	0.00
6,920.0	61.19	359.32	6,731.7	370.8	-655.7	464.3	7.50	7.50	0.00
6,960.0	64.19	359.32	6,750.0	406.3	-656.1	499.5	7.50	7.50	0.00
7,000.0	67.19	359.32	6,766.5	442.8	-656.6	535.6	7.50	7.50	0.00
7,040.0	70.19	359.32	6,781.0	480.0	-657.0	572.5	7.50	7.50	0.00
7,080.0	73.19	359.32	6,793.6	518.0	-657.4	610.1	7.50	7.50	0.00
7,120.0	76.19	359.32	6,804.1	556.6	-657.9	648.3	7.50	7.50	0.00
7,160.0	79.19	359.32	6,812.7	595.7	-658.4	687.0	7.50	7.50	0.00
7,200.0	82.19	359.32	6,819.1	635.1	-658.8	726.1	7.50	7.50	0.00
7,224.1	84.00	359.32	6,822.0	659.0	-659.1	749.8	7.50	7.50	0.00
7"									
7,240.0	84.00	359.32	6,823.7	674.9	-659.3	765.5	0.00	0.00	0.00
7,280.0	84.00	359.32	6,827.9	714.6	-659.8	804.9	0.00	0.00	0.00
7,298.1	84.00	359.32	6,829.8	732.6	-660.0	822.7	0.00	0.00	0.00
7,320.0	85.09	359.32	6,831.8	754.4	-660.3	844.3	5.00	5.00	0.00
7,360.0	87.09	359.32	6,834.6	794.3	-660.7	883.8	5.00	5.00	0.00
7,400.0	89.09	359.32	6,835.9	834.3	-661.2	923.4	5.00	5.00	0.00
7,419.9	90.09	359.32	6,836.0	854.2	-661.4	943.1	5.00	5.00	0.00
End of Build									
7,440.0	90.09	359.32	6,836.0	874.3	-661.7	963.1	0.00	0.00	0.00
7,480.0	90.09	359.32	6,835.9	914.3	-662.1	1,002.7	0.00	0.00	0.00
7,520.0	90.09	359.32	6,835.9	954.3	-662.6	1,042.3	0.00	0.00	0.00
7,560.0	90.09	359.32	6,835.8	994.3	-663.1	1,081.9	0.00	0.00	0.00
7,600.0	90.09	359.32	6,835.8	1,034.3	-663.6	1,121.5	0.00	0.00	0.00
7,640.0	90.09	359.32	6,835.7	1,074.3	-664.0	1,161.2	0.00	0.00	0.00
7,680.0	90.09	359.32	6,835.6	1,114.3	-664.5	1,200.8	0.00	0.00	0.00
7,720.0	90.09	359.32	6,835.6	1,154.3	-665.0	1,240.4	0.00	0.00	0.00
7,760.0	90.09	359.32	6,835.5	1,194.3	-665.5	1,280.0	0.00	0.00	0.00
7,800.0	90.09	359.32	6,835.4	1,234.3	-665.9	1,319.7	0.00	0.00	0.00
7,840.0	90.09	359.32	6,835.4	1,274.3	-666.4	1,359.3	0.00	0.00	0.00

Database:	Landmark	**Local Co-ordinate Reference:**	Well Guttersen 31T-401
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 4851.0ft (RKB - 15')
Project:	SEC.31-T3N-R63W	**MD Reference:**	WELL @ 4851.0ft (RKB - 15')
Site:	Guttersen 31Y-201 Pad Sec.31-T3N-R63W	**North Reference:**	True
Well:	Guttersen 31T-401	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (5-31-13)		

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)
7,880.0	90.09	359.32	6,835.3	1,314.3	-666.9	1,398.9	0.00	0.00	0.00
7,920.0	90.09	359.32	6,835.3	1,354.3	-667.3	1,438.5	0.00	0.00	0.00
7,960.0	90.09	359.32	6,835.2	1,394.3	-667.8	1,478.1	0.00	0.00	0.00
8,000.0	90.09	359.32	6,835.1	1,434.3	-668.3	1,517.8	0.00	0.00	0.00
8,040.0	90.09	359.32	6,835.1	1,474.3	-668.8	1,557.4	0.00	0.00	0.00
8,080.0	90.09	359.32	6,835.0	1,514.3	-669.2	1,597.0	0.00	0.00	0.00
8,120.0	90.09	359.32	6,834.9	1,554.3	-669.7	1,636.6	0.00	0.00	0.00
8,160.0	90.09	359.32	6,834.9	1,594.2	-670.2	1,676.2	0.00	0.00	0.00
8,200.0	90.09	359.32	6,834.8	1,634.2	-670.7	1,715.9	0.00	0.00	0.00
8,240.0	90.09	359.32	6,834.7	1,674.2	-671.1	1,755.5	0.00	0.00	0.00
8,280.0	90.09	359.32	6,834.7	1,714.2	-671.6	1,795.1	0.00	0.00	0.00
8,320.0	90.09	359.32	6,834.6	1,754.2	-672.1	1,834.7	0.00	0.00	0.00
8,360.0	90.09	359.32	6,834.6	1,794.2	-672.6	1,874.4	0.00	0.00	0.00
8,400.0	90.09	359.32	6,834.5	1,834.2	-673.0	1,914.0	0.00	0.00	0.00
8,440.0	90.09	359.32	6,834.4	1,874.2	-673.5	1,953.6	0.00	0.00	0.00
8,480.0	90.09	359.32	6,834.4	1,914.2	-674.0	1,993.2	0.00	0.00	0.00
8,520.0	90.09	359.32	6,834.3	1,954.2	-674.4	2,032.8	0.00	0.00	0.00
8,560.0	90.09	359.32	6,834.2	1,994.2	-674.9	2,072.5	0.00	0.00	0.00
8,600.0	90.09	359.32	6,834.2	2,034.2	-675.4	2,112.1	0.00	0.00	0.00
8,640.0	90.09	359.32	6,834.1	2,074.2	-675.9	2,151.7	0.00	0.00	0.00
8,680.0	90.09	359.32	6,834.1	2,114.2	-676.3	2,191.3	0.00	0.00	0.00
8,720.0	90.09	359.32	6,834.0	2,154.2	-676.8	2,231.0	0.00	0.00	0.00
8,760.0	90.09	359.32	6,833.9	2,194.2	-677.3	2,270.6	0.00	0.00	0.00
8,800.0	90.09	359.32	6,833.9	2,234.2	-677.8	2,310.2	0.00	0.00	0.00
8,840.0	90.09	359.32	6,833.8	2,274.2	-678.2	2,349.8	0.00	0.00	0.00
8,880.0	90.09	359.32	6,833.7	2,314.2	-678.7	2,389.4	0.00	0.00	0.00
8,920.0	90.09	359.32	6,833.7	2,354.2	-679.2	2,429.1	0.00	0.00	0.00
8,960.0	90.09	359.32	6,833.6	2,394.2	-679.6	2,468.7	0.00	0.00	0.00
9,000.0	90.09	359.32	6,833.6	2,434.2	-680.1	2,508.3	0.00	0.00	0.00
9,040.0	90.09	359.32	6,833.5	2,474.2	-680.6	2,547.9	0.00	0.00	0.00
9,080.0	90.09	359.32	6,833.4	2,514.2	-681.1	2,587.6	0.00	0.00	0.00
9,120.0	90.09	359.32	6,833.4	2,554.2	-681.5	2,627.2	0.00	0.00	0.00
9,160.0	90.09	359.32	6,833.3	2,594.2	-682.0	2,666.8	0.00	0.00	0.00
9,200.0	90.09	359.32	6,833.2	2,634.2	-682.5	2,706.4	0.00	0.00	0.00
9,240.0	90.09	359.32	6,833.2	2,674.2	-683.0	2,746.0	0.00	0.00	0.00
9,280.0	90.09	359.32	6,833.1	2,714.2	-683.4	2,785.7	0.00	0.00	0.00
9,320.0	90.09	359.32	6,833.1	2,754.2	-683.9	2,825.3	0.00	0.00	0.00
9,360.0	90.09	359.32	6,833.0	2,794.2	-684.4	2,864.9	0.00	0.00	0.00
9,400.0	90.09	359.32	6,832.9	2,834.2	-684.9	2,904.5	0.00	0.00	0.00
9,440.0	90.09	359.32	6,832.9	2,874.2	-685.3	2,944.2	0.00	0.00	0.00
9,480.0	90.09	359.32	6,832.8	2,914.2	-685.8	2,983.8	0.00	0.00	0.00
9,520.0	90.09	359.32	6,832.7	2,954.2	-686.3	3,023.4	0.00	0.00	0.00
9,560.0	90.09	359.32	6,832.7	2,994.2	-686.7	3,063.0	0.00	0.00	0.00
9,600.0	90.09	359.32	6,832.6	3,034.1	-687.2	3,102.6	0.00	0.00	0.00
9,640.0	90.09	359.32	6,832.5	3,074.1	-687.7	3,142.3	0.00	0.00	0.00
9,680.0	90.09	359.32	6,832.5	3,114.1	-688.2	3,181.9	0.00	0.00	0.00
9,720.0	90.09	359.32	6,832.4	3,154.1	-688.6	3,221.5	0.00	0.00	0.00
9,760.0	90.09	359.32	6,832.4	3,194.1	-689.1	3,261.1	0.00	0.00	0.00
9,800.0	90.09	359.32	6,832.3	3,234.1	-689.6	3,300.7	0.00	0.00	0.00
9,840.0	90.09	359.32	6,832.2	3,274.1	-690.1	3,340.4	0.00	0.00	0.00
9,880.0	90.09	359.32	6,832.2	3,314.1	-690.5	3,380.0	0.00	0.00	0.00
9,920.0	90.09	359.32	6,832.1	3,354.1	-691.0	3,419.6	0.00	0.00	0.00
9,960.0	90.09	359.32	6,832.0	3,394.1	-691.5	3,459.2	0.00	0.00	0.00

Database:	Landmark	**Local Co-ordinate Reference:**	Well Guttersen 31T-401
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 4851.0ft (RKB - 15')
Project:	SEC.31-T3N-R63W	**MD Reference:**	WELL @ 4851.0ft (RKB - 15')
Site:	Guttersen 31Y-201 Pad Sec.31-T3N-R63W	**North Reference:**	True
Well:	Guttersen 31T-401	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (5-31-13)		

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)
10,000.0	90.09	359.32	6,832.0	3,434.1	-691.9	3,498.9	0.00	0.00	0.00
10,040.0	90.09	359.32	6,831.9	3,474.1	-692.4	3,538.5	0.00	0.00	0.00
10,080.0	90.09	359.32	6,831.9	3,514.1	-692.9	3,578.1	0.00	0.00	0.00
10,120.0	90.09	359.32	6,831.8	3,554.1	-693.4	3,617.7	0.00	0.00	0.00
10,160.0	90.09	359.32	6,831.7	3,594.1	-693.8	3,657.3	0.00	0.00	0.00
10,200.0	90.09	359.32	6,831.7	3,634.1	-694.3	3,697.0	0.00	0.00	0.00
10,240.0	90.09	359.32	6,831.6	3,674.1	-694.8	3,736.6	0.00	0.00	0.00
10,280.0	90.09	359.32	6,831.5	3,714.1	-695.3	3,776.2	0.00	0.00	0.00
10,320.0	90.09	359.32	6,831.5	3,754.1	-695.7	3,815.8	0.00	0.00	0.00
10,360.0	90.09	359.32	6,831.4	3,794.1	-696.2	3,855.5	0.00	0.00	0.00
10,400.0	90.09	359.32	6,831.4	3,834.1	-696.7	3,895.1	0.00	0.00	0.00
10,440.0	90.09	359.32	6,831.3	3,874.1	-697.1	3,934.7	0.00	0.00	0.00
10,480.0	90.09	359.32	6,831.2	3,914.1	-697.6	3,974.3	0.00	0.00	0.00
10,520.0	90.09	359.32	6,831.2	3,954.1	-698.1	4,013.9	0.00	0.00	0.00
10,560.0	90.09	359.32	6,831.1	3,994.1	-698.6	4,053.6	0.00	0.00	0.00
10,600.0	90.09	359.32	6,831.0	4,034.1	-699.0	4,093.2	0.00	0.00	0.00
10,640.0	90.09	359.32	6,831.0	4,074.1	-699.5	4,132.8	0.00	0.00	0.00
10,680.0	90.09	359.32	6,830.9	4,114.1	-700.0	4,172.4	0.00	0.00	0.00
10,720.0	90.09	359.32	6,830.9	4,154.1	-700.5	4,212.1	0.00	0.00	0.00
10,760.0	90.09	359.32	6,830.8	4,194.1	-700.9	4,251.7	0.00	0.00	0.00
10,800.0	90.09	359.32	6,830.7	4,234.1	-701.4	4,291.3	0.00	0.00	0.00
10,840.0	90.09	359.32	6,830.7	4,274.1	-701.9	4,330.9	0.00	0.00	0.00
10,880.0	90.09	359.32	6,830.6	4,314.1	-702.4	4,370.5	0.00	0.00	0.00
10,920.0	90.09	359.32	6,830.5	4,354.1	-702.8	4,410.2	0.00	0.00	0.00
10,960.0	90.09	359.32	6,830.5	4,394.1	-703.3	4,449.8	0.00	0.00	0.00
11,000.0	90.09	359.32	6,830.4	4,434.0	-703.8	4,489.4	0.00	0.00	0.00
11,040.0	90.09	359.32	6,830.3	4,474.0	-704.2	4,529.0	0.00	0.00	0.00
11,080.0	90.09	359.32	6,830.3	4,514.0	-704.7	4,568.7	0.00	0.00	0.00
11,120.0	90.09	359.32	6,830.2	4,554.0	-705.2	4,608.3	0.00	0.00	0.00
11,160.0	90.09	359.32	6,830.2	4,594.0	-705.7	4,647.9	0.00	0.00	0.00
11,200.0	90.09	359.32	6,830.1	4,634.0	-706.1	4,687.5	0.00	0.00	0.00
11,240.0	90.09	359.32	6,830.0	4,674.0	-706.6	4,727.1	0.00	0.00	0.00
11,261.8	90.09	359.32	6,830.0	4,695.8	-706.9	4,748.7	0.00	0.00	0.00
BHL 500' FNL, 1140' FEL									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,224.1	6,822.0	7"	7	8-3/4

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
200.0	200.0	0.0	0.0	KOP #1
6,104.1	6,062.3	-25.0	-651.0	KOP #2
7,419.9	6,836.0	854.2	-661.4	End of Build

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.31-T3N-R63W
Guttersen 31Y-201 Pad Sec.31-T3N-R63W
Guttersen 31T-401

Wellbore #1
Plan #1 (5-31-13)

Anticollision Report

31 May, 2013

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Guttersen 31T-401
Project:	SEC.31-T3N-R63W	**TVD Reference:**	WELL @ 4851.0ft (RKB - 15')
Reference Site:	Guttersen 31Y-201 Pad Sec.31-T3N-R63W	**MD Reference:**	WELL @ 4851.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 31T-401	**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 (5-31-13)	**Offset TVD Reference:**	Offset Datum

Reference Plan #1 (5-31-13)

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 1,000.0ft	**Error Surface:**	Elliptical Conic

Warning Levels Evaluated at: 2.00 **Sigma**

Survey Tool Program **Date** 5/31/2013

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,261.8	Plan #1 (5-31-13) (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
Guttersen 31Q-401 Pad Sec.31-T3N-R63W						
Cuykendall 1-31 (Exist.) - Wellbore #1 - Wellbore #1	10,775.5	6,817.8	142.3	-76.4	0.651	Level 1, CC, ES, SF
Guttersen 31Y-201 Pad Sec.31-T3N-R63W						
Guttersen 31T-221 - Wellbore #1 - Plan #1 (5-31-13)	200.0	200.0	30.7	30.1	45.587	CC, ES
Guttersen 31T-221 - Wellbore #1 - Plan #1 (5-31-13)	11,261.8	11,053.9	371.8	216.1	2.389	SF
Guttersen 31Y-201 - Wellbore #1 - Plan #1 (5-31-13)	200.0	200.0	89.4	88.7	132.617	CC, ES
Guttersen 31Y-201 - Wellbore #1 - Plan #1 (5-31-13)	11,261.8	11,042.6	971.2	794.2	5.487	SF
Guttersen 31Y-441 - Wellbore #1 - Plan #1 (5-31-13)	200.0	200.0	58.7	58.0	87.030	CC, ES
Guttersen 31Y-441 - Wellbore #1 - Plan #1 (5-31-13)	11,261.8	11,224.6	623.1	440.4	3.411	SF
Guttersen 43-31(Exist.) - Wellbore #1 - Wellbore #1	8,461.8	6,834.4	475.4	299.1	2.697	CC, ES
Guttersen 43-31(Exist.) - Wellbore #1 - Wellbore #1	8,500.0	6,834.3	476.9	300.0	2.696	SF

Offset Design Guttersen 31Q-401 Pad Sec.31-T3N-R63W - Cuykendall 1-31 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7300-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
9,800.0	6,832.3	6,819.3	6,819.3	64.8	136.4	90.62	4,211.3	-558.8	985.9	785.4	200.44	4.919	
9,900.0	6,832.1	6,819.1	6,819.1	66.7	136.4	90.55	4,211.3	-558.8	887.0	684.7	202.30	4.385	
10,000.0	6,832.0	6,819.0	6,819.0	68.5	136.4	90.49	4,211.3	-558.8	788.5	584.3	204.17	3.862	
10,100.0	6,831.8	6,818.8	6,818.8	70.4	136.4	90.43	4,211.3	-558.8	690.4	484.3	206.04	3.351	
10,200.0	6,831.7	6,818.7	6,818.7	72.2	136.4	90.36	4,211.3	-558.8	592.9	385.0	207.91	2.852	
10,300.0	6,831.5	6,818.5	6,818.5	74.1	136.4	90.30	4,211.3	-558.8	496.4	286.6	209.79	2.366	
10,400.0	6,831.4	6,818.4	6,818.4	75.9	136.4	90.24	4,211.3	-558.8	401.6	189.9	211.66	1.897	
10,500.0	6,831.2	6,818.2	6,818.2	77.8	136.4	90.17	4,211.3	-558.8	310.1	96.6	213.54	1.452	Level 3
10,600.0	6,831.0	6,818.0	6,818.0	79.7	136.4	90.11	4,211.3	-558.8	226.0	10.6	215.42	1.049	Level 2
10,700.0	6,830.9	6,817.9	6,817.9	81.6	136.4	90.05	4,211.3	-558.8	161.1	-56.2	217.30	0.742	Level 1
10,775.5	6,830.8	6,817.8	6,817.8	83.0	136.4	90.00	4,211.3	-558.8	142.3	-76.4	218.73	0.651	Level 1, CC, ES, SF
10,800.0	6,830.7	6,817.7	6,817.7	83.4	136.4	89.98	4,211.3	-558.8	144.4	-74.8	219.19	0.659	Level 1
10,900.0	6,830.6	6,817.6	6,817.6	85.3	136.4	89.92	4,211.3	-558.8	189.1	-32.0	221.07	0.855	Level 1
11,000.0	6,830.4	6,817.4	6,817.4	87.2	136.3	89.86	4,211.3	-558.8	265.8	42.8	222.96	1.192	Level 2
11,100.0	6,830.3	6,817.3	6,817.3	89.1	136.3	89.79	4,211.3	-558.8	354.3	129.5	224.84	1.576	
11,200.0	6,830.1	6,817.1	6,817.1	91.0	136.3	89.73	4,211.3	-558.8	447.7	221.0	226.73	1.975	

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 31T-401
Project:	SEC.31-T3N-R63W	**TVD Reference:**	WELL @ 4851.0ft (RKB - 15')
Reference Site:	Guttersen 31Y-201 Pad Sec.31-T3N-R63W	**MD Reference:**	WELL @ 4851.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 31T-401	**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 (5-31-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Guttersen 31Q-401 Pad Sec.31-T3N-R63W - Cuykendall 1-31 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7300-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
11,261.8	6,830.0	6,817.0	6,817.0	92.1	136.3	89.69	4,211.3	-558.8	506.7	278.8	227.90	2.223	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Guttersen 31T-401
Project:	SEC.31-T3N-R63W	**TVD Reference:**	WELL @ 4851.0ft (RKB - 15')
Reference Site:	Guttersen 31Y-201 Pad Sec.31-T3N-R63W	**MD Reference:**	WELL @ 4851.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 31T-401	**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 (5-31-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Guttersen 31Y-201 Pad Sec.31-T3N-R63W - Guttersen 31T-221 - Wellbore #1 - Plan #1 (5-31-13)

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	90.01	0.0	30.7	30.7				
100.0	100.0	100.0	100.0	0.1	0.1	90.01	0.0	30.7	30.7	30.5	0.22	136.761	
200.0	200.0	200.0	200.0	0.3	0.3	90.01	0.0	30.7	30.7	30.1	0.67	45.587	CC, ES
300.0	300.0	300.0	300.0	0.6	0.6	-177.91	0.0	30.7	32.5	31.4	1.12	29.017	
400.0	399.8	399.8	399.8	0.8	0.8	-178.20	0.0	30.7	37.7	36.1	1.57	24.064	
500.0	499.5	499.5	499.5	1.0	1.0	-178.53	0.0	30.7	46.4	44.4	2.02	22.970	
600.0	598.7	598.7	598.7	1.3	1.2	-178.83	0.0	30.7	58.5	56.0	2.48	23.643	
700.0	697.8	697.8	697.8	1.6	1.5	-179.04	0.0	30.7	71.6	68.7	2.92	24.504	
800.0	797.0	797.0	797.0	1.9	1.7	-179.19	0.0	30.7	84.8	81.4	3.38	25.103	
900.0	896.1	896.1	896.1	2.3	1.9	-179.30	0.0	30.7	97.9	94.0	3.83	25.542	
1,000.0	995.3	995.3	995.3	2.6	2.1	-179.38	0.0	30.7	111.0	106.7	4.29	25.876	
1,100.0	1,094.4	1,098.6	1,098.6	2.9	2.3	-179.42	-0.1	29.0	122.5	117.7	4.74	25.847	
1,200.0	1,193.5	1,202.9	1,202.7	3.3	2.6	-179.39	-0.5	23.6	130.4	125.2	5.18	25.173	
1,300.0	1,292.7	1,307.4	1,306.8	3.6	2.8	-179.29	-1.1	14.3	134.6	129.0	5.63	23.915	
1,400.0	1,391.8	1,407.4	1,406.3	3.9	3.0	-179.18	-1.8	3.8	137.2	131.2	6.08	22.575	
1,500.0	1,490.9	1,507.4	1,505.7	4.3	3.3	-179.07	-2.5	-6.7	139.8	133.3	6.53	21.402	
1,600.0	1,590.1	1,607.3	1,605.1	4.6	3.5	-178.96	-3.2	-17.3	142.4	135.5	6.99	20.372	
1,700.0	1,689.2	1,707.3	1,704.5	4.9	3.8	-178.86	-4.0	-27.8	145.0	137.6	7.45	19.460	
1,800.0	1,788.3	1,807.3	1,803.9	5.3	4.1	-178.76	-4.7	-38.3	147.6	139.7	7.92	18.650	
1,900.0	1,887.5	1,907.2	1,903.3	5.6	4.3	-178.66	-5.4	-48.8	150.3	141.9	8.38	17.924	
2,000.0	1,986.6	2,007.2	2,002.7	5.9	4.6	-178.57	-6.1	-59.3	152.9	144.0	8.85	17.272	
2,100.0	2,085.7	2,107.2	2,102.1	6.3	4.9	-178.48	-6.8	-69.8	155.5	146.1	9.32	16.682	
2,200.0	2,184.9	2,207.1	2,201.5	6.6	5.2	-178.40	-7.5	-80.4	158.1	148.3	9.79	16.147	
2,300.0	2,284.0	2,307.1	2,300.9	7.0	5.5	-178.31	-8.2	-90.9	160.7	150.4	10.26	15.659	
2,400.0	2,383.2	2,407.1	2,400.3	7.3	5.7	-178.23	-8.9	-101.4	163.3	152.5	10.73	15.212	
2,500.0	2,482.3	2,507.0	2,499.7	7.6	6.0	-178.15	-9.6	-111.9	165.9	154.7	11.21	14.802	
2,600.0	2,581.4	2,607.0	2,599.2	8.0	6.3	-178.08	-10.4	-122.4	168.5	156.8	11.68	14.424	
2,700.0	2,680.6	2,707.0	2,698.6	8.3	6.6	-178.00	-11.1	-132.9	171.1	158.9	12.16	14.075	
2,800.0	2,779.7	2,806.9	2,798.0	8.6	6.9	-177.93	-11.8	-143.5	173.7	161.1	12.63	13.752	
2,900.0	2,878.8	2,906.9	2,897.4	9.0	7.2	-177.86	-12.5	-154.0	176.3	163.2	13.11	13.452	
3,000.0	2,978.0	3,006.9	2,996.8	9.3	7.5	-177.80	-13.2	-164.5	178.9	165.3	13.58	13.172	
3,100.0	3,077.1	3,106.8	3,096.2	9.6	7.8	-177.73	-13.9	-175.0	181.5	167.5	14.06	12.910	
3,200.0	3,176.2	3,206.8	3,195.6	10.0	8.1	-177.67	-14.6	-185.5	184.1	169.6	14.54	12.666	
3,300.0	3,275.4	3,306.8	3,295.0	10.3	8.4	-177.61	-15.3	-196.1	186.7	171.7	15.02	12.436	
3,400.0	3,374.5	3,406.7	3,394.4	10.7	8.7	-177.55	-16.0	-206.6	189.3	173.9	15.49	12.221	
3,500.0	3,473.6	3,506.7	3,493.8	11.0	9.0	-177.49	-16.7	-217.1	192.0	176.0	15.97	12.018	
3,600.0	3,572.8	3,606.7	3,593.2	11.3	9.3	-177.43	-17.5	-227.6	194.6	178.1	16.45	11.827	
3,700.0	3,671.9	3,706.6	3,692.7	11.7	9.5	-177.38	-18.2	-238.1	197.2	180.2	16.93	11.647	
3,800.0	3,771.1	3,806.6	3,792.1	12.0	9.8	-177.32	-18.9	-248.6	199.8	182.4	17.41	11.476	
3,900.0	3,870.2	3,906.5	3,891.5	12.3	10.1	-177.27	-19.6	-259.2	202.4	184.5	17.89	11.314	
4,000.0	3,969.3	4,006.5	3,990.9	12.7	10.4	-177.22	-20.3	-269.7	205.0	186.6	18.37	11.161	
4,100.0	4,068.5	4,106.5	4,090.3	13.0	10.7	-177.17	-21.0	-280.2	207.6	188.8	18.85	11.015	
4,200.0	4,167.6	4,206.4	4,189.7	13.4	11.0	-177.12	-21.7	-290.7	210.2	190.9	19.33	10.876	
4,300.0	4,266.7	4,306.4	4,289.1	13.7	11.3	-177.07	-22.4	-301.2	212.8	193.0	19.81	10.744	
4,400.0	4,365.9	4,406.4	4,388.5	14.0	11.6	-177.03	-23.1	-311.8	215.4	195.1	20.29	10.618	
4,500.0	4,465.0	4,506.3	4,487.9	14.4	11.9	-176.98	-23.9	-322.3	218.0	197.3	20.77	10.498	
4,600.0	4,564.1	4,600.0	4,581.2	14.7	12.2	-176.97	-24.4	-330.9	222.0	200.7	21.21	10.463	
4,700.0	4,663.3	4,692.4	4,673.4	15.0	12.3	-177.01	-24.8	-336.5	229.1	207.5	21.63	10.593	
4,800.0	4,762.4	4,784.3	4,765.3	15.4	12.5	-177.12	-25.0	-339.1	239.4	217.4	22.03	10.866	
4,900.0	4,861.5	4,880.6	4,861.5	15.7	12.7	-177.26	-25.0	-339.3	252.3	229.8	22.46	11.234	
5,000.0	4,960.7	4,979.7	4,960.7	16.1	12.8	-177.39	-25.0	-339.3	265.4	242.5	22.89	11.592	

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 31T-401
Project:	SEC.31-T3N-R63W	**TVD Reference:**	WELL @ 4851.0ft (RKB - 15')
Reference Site:	Guttersen 31Y-201 Pad Sec.31-T3N-R63W	**MD Reference:**	WELL @ 4851.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 31T-401	**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 (5-31-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Guttersen 31Y-201 Pad Sec.31-T3N-R63W - Guttersen 31T-221 - Wellbore #1 - Plan #1 (5-31-13)

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	5,059.8	5,078.9	5,059.8	16.4	13.0	-177.52	-25.0	-339.3	278.5	255.2	23.33	11.936	
5,200.0	5,159.0	5,178.0	5,159.0	16.7	13.2	-177.63	-25.0	-339.3	291.4	267.6	23.77	12.260	
5,300.0	5,258.5	5,277.5	5,258.5	16.9	13.4	-177.72	-25.0	-339.3	301.5	277.4	24.15	12.486	
5,400.0	5,358.2	5,377.3	5,358.2	17.1	13.5	-177.77	-25.0	-339.3	308.2	283.7	24.50	12.580	
5,500.0	5,458.2	5,477.2	5,458.2	17.3	13.7	-177.80	-25.0	-339.3	311.4	286.6	24.83	12.545	
5,600.0	5,558.2	5,577.2	5,558.2	17.4	13.9	90.00	-25.0	-339.3	311.7	286.5	25.20	12.372	
5,700.0	5,658.2	5,677.2	5,658.2	17.5	14.1	90.00	-25.0	-339.3	311.7	286.2	25.59	12.183	
5,800.0	5,758.2	5,777.2	5,758.2	17.7	14.3	90.00	-25.0	-339.3	311.7	285.8	25.98	11.999	
5,900.0	5,858.2	5,877.2	5,858.2	17.8	14.5	90.00	-25.0	-339.3	311.7	285.4	26.37	11.820	
5,995.6	5,953.7	5,972.9	5,953.7	18.0	14.6	89.30	-21.2	-339.3	311.7	285.0	26.74	11.659	
6,000.0	5,958.2	5,977.3	5,958.1	18.0	14.7	89.22	-20.8	-339.3	311.7	285.0	26.75	11.652	
6,100.0	6,058.2	6,074.8	6,054.2	18.1	14.8	86.20	-4.3	-339.5	312.2	285.1	27.11	11.518	
6,200.0	6,157.9	6,168.5	6,143.8	18.3	15.0	82.76	22.9	-339.8	314.3	286.8	27.52	11.424	
6,300.0	6,256.0	6,259.8	6,227.2	18.4	15.2	78.84	59.7	-340.3	318.0	290.0	28.00	11.358	
6,400.0	6,350.8	6,350.0	6,304.8	18.6	15.4	75.18	105.6	-340.9	322.8	294.3	28.55	11.307	
6,500.0	6,440.7	6,436.3	6,373.5	18.8	15.6	71.92	157.8	-341.5	328.4	299.3	29.12	11.276	
6,600.0	6,524.1	6,522.1	6,435.5	18.9	15.9	69.00	217.0	-342.2	334.4	304.7	29.70	11.261	
6,700.0	6,599.5	6,606.5	6,489.7	19.2	16.2	66.47	281.7	-343.0	340.5	310.3	30.24	11.258	
6,800.0	6,665.8	6,689.8	6,535.8	19.5	16.7	64.33	351.0	-343.8	346.3	315.5	30.78	11.250	
6,900.0	6,721.8	6,772.2	6,573.7	19.9	17.3	62.57	424.2	-344.7	351.4	320.1	31.33	11.218	
7,000.0	6,766.5	6,850.0	6,602.1	20.5	18.0	61.25	496.5	-345.6	355.8	323.9	31.91	11.151	
7,100.0	6,799.1	6,935.1	6,624.5	21.2	18.9	60.22	578.5	-346.6	359.1	326.4	32.68	10.987	
7,200.0	6,819.1	7,015.8	6,637.3	22.1	19.8	59.60	658.2	-347.6	361.2	327.6	33.61	10.748	
7,300.0	6,830.0	7,099.9	6,641.6	23.2	20.9	58.91	742.1	-348.6	364.0	328.8	35.26	10.325	
7,400.0	6,835.9	7,195.1	6,641.2	24.4	22.2	57.99	837.3	-349.8	367.3	330.6	36.69	10.011	
7,500.0	6,835.9	7,295.1	6,640.7	25.7	23.6	57.92	937.3	-351.0	367.5	328.5	39.03	9.415	
7,600.0	6,835.8	7,395.1	6,640.3	27.0	25.1	57.89	1,037.3	-352.2	367.6	326.0	41.62	8.834	
7,700.0	6,835.6	7,495.1	6,639.9	28.5	26.6	57.85	1,137.3	-353.4	367.7	323.4	44.30	8.301	
7,800.0	6,835.4	7,595.1	6,639.5	30.0	28.2	57.81	1,237.2	-354.6	367.8	320.8	47.06	7.816	
7,900.0	6,835.3	7,695.1	6,639.1	31.5	29.9	57.77	1,337.2	-355.8	368.0	318.1	49.89	7.375	
8,000.0	6,835.1	7,795.1	6,638.7	33.1	31.5	57.74	1,437.2	-357.1	368.1	315.3	52.78	6.973	
8,100.0	6,835.0	7,895.1	6,638.2	34.7	33.2	57.70	1,537.2	-358.3	368.2	312.5	55.72	6.608	
8,200.0	6,834.8	7,995.1	6,637.8	36.3	34.9	57.66	1,637.2	-359.5	368.3	309.6	58.69	6.275	
8,300.0	6,834.7	8,095.1	6,637.4	38.0	36.7	57.63	1,737.2	-360.7	368.4	306.7	61.70	5.971	
8,400.0	6,834.5	8,195.1	6,637.0	39.7	38.4	57.59	1,837.2	-361.9	368.5	303.8	64.74	5.692	
8,500.0	6,834.3	8,295.1	6,636.6	41.4	40.2	57.55	1,937.2	-363.1	368.6	300.8	67.80	5.437	
8,600.0	6,834.2	8,395.1	6,636.1	43.2	42.0	57.51	2,037.2	-364.4	368.7	297.9	70.88	5.202	
8,700.0	6,834.0	8,495.1	6,635.7	44.9	43.8	57.48	2,137.2	-365.6	368.8	294.9	73.98	4.985	
8,800.0	6,833.9	8,595.1	6,635.3	46.7	45.6	57.44	2,237.2	-366.8	369.0	291.9	77.10	4.785	
8,900.0	6,833.7	8,695.1	6,634.9	48.5	47.4	57.40	2,337.1	-368.0	369.1	288.8	80.23	4.600	
9,000.0	6,833.6	8,795.1	6,634.5	50.2	49.2	57.37	2,437.1	-369.2	369.2	285.8	83.37	4.428	
9,100.0	6,833.4	8,895.1	6,634.0	52.0	51.0	57.33	2,537.1	-370.5	369.3	282.8	86.52	4.268	
9,200.0	6,833.2	8,995.1	6,633.6	53.8	52.9	57.29	2,637.1	-371.7	369.4	279.7	89.69	4.119	
9,300.0	6,833.1	9,095.1	6,633.2	55.7	54.7	57.25	2,737.1	-372.9	369.5	276.7	92.85	3.980	
9,400.0	6,832.9	9,195.1	6,632.8	57.5	56.5	57.22	2,837.1	-374.1	369.6	273.6	96.03	3.849	
9,500.0	6,832.8	9,295.1	6,632.4	59.3	58.4	57.18	2,937.1	-375.3	369.7	270.5	99.21	3.727	
9,600.0	6,832.6	9,395.1	6,631.9	61.1	60.3	57.14	3,037.1	-376.5	369.9	267.5	102.40	3.612	
9,700.0	6,832.5	9,495.1	6,631.5	63.0	62.1	57.11	3,137.1	-377.8	370.0	264.4	105.59	3.504	
9,800.0	6,832.3	9,595.1	6,631.1	64.8	64.0	57.07	3,237.1	-379.0	370.1	261.3	108.78	3.402	
9,900.0	6,832.1	9,695.1	6,630.7	66.7	65.9	57.03	3,337.1	-380.2	370.2	258.2	111.98	3.306	
10,000.0	6,832.0	9,795.1	6,630.3	68.5	67.7	57.00	3,437.1	-381.4	370.3	255.1	115.18	3.215	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Guttersen 31T-401
Project:	SEC.31-T3N-R63W	**TVD Reference:**	WELL @ 4851.0ft (RKB - 15')
Reference Site:	Guttersen 31Y-201 Pad Sec.31-T3N-R63W	**MD Reference:**	WELL @ 4851.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 31T-401	**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 (5-31-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Guttersen 31Y-201 Pad Sec.31-T3N-R63W - Guttersen 31T-221 - Wellbore #1 - Plan #1 (5-31-13)

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	6,831.8	9,895.1	6,629.9	70.4	69.6	56.96	3,537.0	-382.6	370.4	252.0	118.38	3.129	
10,200.0	6,831.7	9,995.1	6,629.4	72.2	71.5	56.92	3,637.0	-383.8	370.5	248.9	121.59	3.047	
10,300.0	6,831.5	10,095.1	6,629.0	74.1	73.4	56.88	3,737.0	-385.1	370.6	245.9	124.79	2.970	
10,400.0	6,831.4	10,195.1	6,628.6	75.9	75.2	56.85	3,837.0	-386.3	370.8	242.8	128.00	2.897	
10,500.0	6,831.2	10,295.1	6,628.2	77.8	77.1	56.81	3,937.0	-387.5	370.9	239.7	131.21	2.827	
10,600.0	6,831.0	10,395.1	6,627.8	79.7	79.0	56.77	4,037.0	-388.7	371.0	236.6	134.42	2.760	
10,700.0	6,830.9	10,495.1	6,627.3	81.6	80.9	56.74	4,137.0	-389.9	371.1	233.5	137.63	2.696	
10,800.0	6,830.7	10,595.1	6,626.9	83.4	82.8	56.70	4,237.0	-391.1	371.2	230.4	140.84	2.636	
10,900.0	6,830.6	10,695.1	6,626.5	85.3	84.7	56.66	4,337.0	-392.4	371.3	227.3	144.06	2.578	
11,000.0	6,830.4	10,795.1	6,626.1	87.2	86.6	56.63	4,437.0	-393.6	371.5	224.2	147.27	2.522	
11,100.0	6,830.3	10,895.1	6,625.7	89.1	88.4	56.59	4,537.0	-394.8	371.6	221.1	150.48	2.469	
11,200.0	6,830.1	10,995.1	6,625.2	91.0	90.3	56.55	4,637.0	-396.0	371.7	218.0	153.69	2.418	
11,228.9	6,830.1	11,024.0	6,625.1	91.5	90.9	56.54	4,665.9	-396.4	371.7	217.1	154.62	2.404	
11,261.8	6,830.0	11,053.9	6,625.0	92.1	91.5	56.53	4,695.8	-396.7	371.8	216.1	155.63	2.389	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Guttersen 31T-401
Project:	SEC.31-T3N-R63W	**TVD Reference:**	WELL @ 4851.0ft (RKB - 15')
Reference Site:	Guttersen 31Y-201 Pad Sec.31-T3N-R63W	**MD Reference:**	WELL @ 4851.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 31T-401	**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 (5-31-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Guttersen 31Y-201 Pad Sec.31-T3N-R63W - Guttersen 31Y-201 - Wellbore #1 - Plan #1 (5-31-13)

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	90.00	0.0	89.4	89.4				
100.0	100.0	100.0	100.0	0.1	0.1	90.00	0.0	89.4	89.4	89.2	0.22	397.850	
200.0	200.0	200.0	200.0	0.3	0.3	90.00	0.0	89.4	89.4	88.7	0.67	132.617	CC, ES
300.0	300.0	300.0	300.0	0.6	0.6	-177.84	0.0	89.4	91.2	90.0	1.12	81.438	
400.0	399.8	399.8	399.8	0.8	0.8	-177.95	0.0	89.4	96.4	94.8	1.57	61.509	
500.0	499.5	499.5	499.5	1.0	1.0	-178.12	0.0	89.4	105.1	103.1	2.02	52.003	
600.0	598.7	598.7	598.7	1.3	1.2	-178.31	0.0	89.4	117.2	114.7	2.48	47.349	
700.0	697.8	697.8	697.8	1.6	1.5	-178.48	0.0	89.4	130.3	127.4	2.92	44.571	
800.0	797.0	797.0	797.0	1.9	1.7	-178.62	0.0	89.4	143.4	140.1	3.38	42.477	
900.0	896.1	896.1	896.1	2.3	1.9	-178.73	0.0	89.4	156.5	152.7	3.83	40.848	
1,000.0	995.3	995.3	995.3	2.6	2.1	-178.83	0.0	89.4	169.7	165.4	4.29	39.549	
1,100.0	1,094.4	1,090.1	1,090.1	2.9	2.3	-178.86	-0.1	90.5	183.9	179.2	4.73	38.887	
1,200.0	1,193.5	1,184.0	1,184.0	3.3	2.5	-178.79	-0.6	93.8	200.5	195.4	5.16	38.862	
1,300.0	1,292.7	1,277.1	1,276.9	3.6	2.7	-178.65	-1.3	99.4	219.5	213.9	5.59	39.253	
1,400.0	1,391.8	1,374.8	1,374.3	3.9	2.9	-178.48	-2.2	106.5	239.8	233.8	6.03	39.751	
1,500.0	1,490.9	1,472.7	1,472.0	4.3	3.1	-178.33	-3.1	113.7	260.1	253.7	6.47	40.183	
1,600.0	1,590.1	1,570.7	1,569.6	4.6	3.4	-178.21	-3.9	120.8	280.4	273.5	6.92	40.540	
1,700.0	1,689.2	1,668.6	1,667.3	4.9	3.6	-178.10	-4.8	128.0	300.8	293.4	7.36	40.839	
1,800.0	1,788.3	1,766.5	1,764.9	5.3	3.8	-178.01	-5.7	135.1	321.1	313.3	7.81	41.093	
1,900.0	1,887.5	1,864.4	1,862.6	5.6	4.1	-177.93	-6.6	142.3	341.4	333.1	8.27	41.303	
2,000.0	1,986.6	1,962.3	1,960.2	5.9	4.3	-177.85	-7.5	149.4	361.7	353.0	8.72	41.491	
2,100.0	2,085.7	2,060.2	2,057.9	6.3	4.6	-177.79	-8.4	156.6	382.0	372.8	9.17	41.652	
2,200.0	2,184.9	2,158.1	2,155.5	6.6	4.8	-177.73	-9.3	163.7	402.3	392.7	9.63	41.792	
2,300.0	2,284.0	2,256.1	2,253.2	7.0	5.0	-177.68	-10.2	170.9	422.6	412.5	10.08	41.915	
2,400.0	2,383.2	2,354.0	2,350.8	7.3	5.3	-177.63	-11.1	178.0	442.9	432.4	10.54	42.023	
2,500.0	2,482.3	2,451.9	2,448.5	7.6	5.5	-177.58	-12.0	185.2	463.3	452.3	11.00	42.120	
2,600.0	2,581.4	2,549.8	2,546.1	8.0	5.8	-177.54	-12.9	192.3	483.6	472.1	11.46	42.206	
2,700.0	2,680.6	2,647.7	2,643.8	8.3	6.0	-177.51	-13.8	199.4	503.9	492.0	11.92	42.283	
2,800.0	2,779.7	2,745.6	2,741.4	8.6	6.3	-177.47	-14.7	206.6	524.2	511.8	12.38	42.352	
2,900.0	2,878.8	2,843.5	2,839.1	9.0	6.5	-177.44	-15.6	213.7	544.5	531.7	12.84	42.415	
3,000.0	2,978.0	2,941.5	2,936.7	9.3	6.8	-177.41	-16.5	220.9	564.8	551.5	13.30	42.471	
3,100.0	3,077.1	3,039.4	3,034.4	9.6	7.0	-177.38	-17.4	228.0	585.1	571.4	13.76	42.523	
3,200.0	3,176.2	3,137.3	3,132.0	10.0	7.3	-177.36	-18.3	235.2	605.5	591.2	14.22	42.570	
3,300.0	3,275.4	3,235.2	3,229.6	10.3	7.5	-177.33	-19.2	242.3	625.8	611.1	14.69	42.613	
3,400.0	3,374.5	3,333.1	3,327.3	10.7	7.8	-177.31	-20.1	249.5	646.1	630.9	15.15	42.653	
3,500.0	3,473.6	3,431.0	3,424.9	11.0	8.0	-177.29	-21.0	256.6	666.4	650.8	15.61	42.689	
3,600.0	3,572.8	3,528.9	3,522.6	11.3	8.3	-177.27	-21.9	263.8	686.7	670.7	16.07	42.723	
3,700.0	3,671.9	3,626.9	3,620.2	11.7	8.6	-177.25	-22.8	270.9	707.0	690.5	16.54	42.754	
3,800.0	3,771.1	3,724.8	3,717.9	12.0	8.8	-177.23	-23.7	278.1	727.4	710.4	17.00	42.783	
3,900.0	3,870.2	3,846.0	3,838.9	12.3	9.1	-177.23	-24.6	285.1	746.2	728.7	17.48	42.689	
4,000.0	3,969.3	3,968.9	3,961.7	12.7	9.3	-177.26	-25.0	288.2	761.8	743.9	17.95	42.450	
4,100.0	4,068.5	4,075.6	4,068.5	13.0	9.5	-177.31	-25.0	288.4	775.1	756.7	18.40	42.134	
4,200.0	4,167.6	4,174.7	4,167.6	13.4	9.7	-177.36	-25.0	288.4	788.2	769.4	18.84	41.836	
4,300.0	4,266.7	4,273.9	4,266.7	13.7	9.9	-177.40	-25.0	288.4	801.3	782.0	19.29	41.548	
4,400.0	4,365.9	4,373.0	4,365.9	14.0	10.1	-177.44	-25.0	288.4	814.4	794.7	19.73	41.270	
4,500.0	4,465.0	4,472.1	4,465.0	14.4	10.3	-177.48	-25.0	288.4	827.5	807.3	20.18	41.004	
4,600.0	4,564.1	4,571.3	4,564.1	14.7	10.5	-177.52	-25.0	288.4	840.6	820.0	20.63	40.747	
4,700.0	4,663.3	4,670.4	4,663.3	15.0	10.7	-177.56	-25.0	288.4	853.7	832.7	21.08	40.500	
4,800.0	4,762.4	4,769.5	4,762.4	15.4	10.9	-177.60	-25.0	288.4	866.8	845.3	21.53	40.262	
4,900.0	4,861.5	4,868.7	4,861.5	15.7	11.1	-177.63	-25.0	288.4	880.0	858.0	21.98	40.033	
5,000.0	4,960.7	4,967.8	4,960.7	16.1	11.3	-177.67	-25.0	288.4	893.1	870.6	22.43	39.812	

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 31T-401
Project:	SEC.31-T3N-R63W	**TVD Reference:**	WELL @ 4851.0ft (RKB - 15')
Reference Site:	Guttersen 31Y-201 Pad Sec.31-T3N-R63W	**MD Reference:**	WELL @ 4851.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 31T-401	**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 (5-31-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Guttersen 31Y-201 Pad Sec.31-T3N-R63W - Guttersen 31Y-201 - Wellbore #1 - Plan #1 (5-31-13)

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	5,059.8	5,066.9	5,059.8	16.4	11.5	-177.70	-25.0	288.4	906.2	883.3	22.88	39.599	
5,200.0	5,159.0	5,166.1	5,159.0	16.7	11.7	-177.74	-25.0	288.4	919.1	895.7	23.34	39.369	
5,300.0	5,258.5	5,265.6	5,258.5	16.9	11.9	-177.77	-25.0	288.4	929.2	905.5	23.78	39.083	
5,400.0	5,358.2	5,365.4	5,358.2	17.1	12.1	-177.79	-25.0	288.4	935.9	911.7	24.18	38.712	
5,500.0	5,458.2	5,465.3	5,458.2	17.3	12.3	-177.80	-25.0	288.4	939.1	914.6	24.55	38.259	
5,600.0	5,558.2	5,565.3	5,558.2	17.4	12.5	90.00	-25.0	288.4	939.4	914.5	24.94	37.674	
5,700.0	5,658.2	5,665.3	5,658.2	17.5	12.7	90.00	-25.0	288.4	939.4	914.1	25.33	37.081	
5,800.0	5,758.2	5,765.3	5,758.2	17.7	12.9	90.00	-25.0	288.4	939.4	913.7	25.74	36.503	
5,900.0	5,858.2	5,865.3	5,858.2	17.8	13.1	90.00	-25.0	288.4	939.4	913.3	26.14	35.942	
6,000.0	5,958.2	5,966.2	5,958.9	18.0	13.3	89.74	-20.7	288.4	939.4	912.8	26.54	35.400	
6,050.2	6,008.3	6,016.1	6,008.3	18.1	13.4	89.31	-13.8	288.3	939.4	912.6	26.73	35.143	
6,100.0	6,058.2	6,064.6	6,055.8	18.1	13.5	88.72	-4.0	288.2	939.4	912.5	26.92	34.900	
6,200.0	6,157.9	6,159.1	6,146.1	18.3	13.7	88.00	23.7	287.8	940.0	912.7	27.29	34.447	
6,300.0	6,256.0	6,250.0	6,229.1	18.4	13.9	86.67	60.6	287.4	941.0	913.4	27.68	33.999	
6,400.0	6,350.8	6,340.9	6,307.2	18.6	14.1	85.37	107.1	286.8	942.6	914.4	28.14	33.501	
6,500.0	6,440.7	6,428.8	6,376.8	18.8	14.3	84.16	160.5	286.2	944.4	915.7	28.69	32.917	
6,600.0	6,524.1	6,515.0	6,438.8	18.9	14.7	83.06	220.4	285.5	946.5	917.1	29.39	32.209	
6,700.0	6,599.5	6,600.0	6,492.9	19.2	15.1	82.05	285.9	284.7	948.7	918.4	30.26	31.354	
6,800.0	6,665.8	6,683.4	6,538.6	19.5	15.7	81.18	355.6	283.9	950.8	919.4	31.34	30.340	
6,900.0	6,721.8	6,766.0	6,576.1	19.9	16.4	80.43	429.2	283.0	952.7	920.1	32.64	29.191	
7,000.0	6,766.5	6,850.0	6,605.9	20.5	17.3	79.81	507.7	282.0	954.5	920.3	34.18	27.921	
7,100.0	6,799.1	6,929.2	6,625.9	21.2	18.2	79.35	584.3	281.1	955.8	919.9	35.92	26.611	
7,200.0	6,819.1	7,010.0	6,638.0	22.1	19.1	79.04	664.2	280.2	956.8	918.9	37.87	25.265	
7,300.0	6,830.0	7,090.4	6,641.7	23.2	20.2	78.73	744.4	279.2	958.0	917.9	40.07	23.906	
7,400.0	6,835.9	7,188.6	6,640.2	24.4	21.5	78.23	842.5	278.0	959.4	916.9	42.58	22.535	
7,500.0	6,835.9	7,288.5	6,638.7	25.7	23.0	78.14	942.5	276.8	959.7	914.4	45.37	21.152	
7,600.0	6,835.8	7,388.5	6,637.1	27.0	24.5	78.06	1,042.5	275.6	960.0	911.7	48.32	19.868	
7,700.0	6,835.6	7,488.5	6,635.6	28.5	26.1	77.98	1,142.5	274.4	960.3	908.9	51.37	18.693	
7,800.0	6,835.4	7,588.5	6,634.0	30.0	27.7	77.90	1,242.4	273.3	960.6	906.1	54.51	17.622	
7,900.0	6,835.3	7,688.5	6,632.5	31.5	29.4	77.82	1,342.4	272.1	960.8	903.1	57.72	16.646	
8,000.0	6,835.1	7,788.5	6,631.0	33.1	31.1	77.74	1,442.4	270.9	961.1	900.1	60.99	15.758	
8,100.0	6,835.0	7,888.5	6,629.4	34.7	32.8	77.66	1,542.3	269.7	961.4	897.1	64.32	14.948	
8,200.0	6,834.8	7,988.5	6,627.9	36.3	34.5	77.58	1,642.3	268.5	961.7	894.0	67.68	14.209	
8,300.0	6,834.7	8,088.5	6,626.4	38.0	36.3	77.49	1,742.3	267.3	962.0	890.9	71.08	13.533	
8,400.0	6,834.5	8,188.5	6,624.8	39.7	38.0	77.41	1,842.3	266.1	962.2	887.7	74.52	12.913	
8,500.0	6,834.3	8,288.4	6,623.3	41.4	39.8	77.33	1,942.2	264.9	962.5	884.6	77.98	12.343	
8,600.0	6,834.2	8,388.4	6,621.8	43.2	41.6	77.25	2,042.2	263.7	962.8	881.4	81.46	11.819	
8,700.0	6,834.0	8,488.4	6,620.2	44.9	43.4	77.17	2,142.2	262.5	963.1	878.1	84.97	11.335	
8,800.0	6,833.9	8,588.4	6,618.7	46.7	45.2	77.09	2,242.1	261.3	963.4	874.9	88.49	10.887	
8,900.0	6,833.7	8,688.4	6,617.2	48.5	47.1	77.01	2,342.1	260.1	963.7	871.7	92.03	10.472	
9,000.0	6,833.6	8,788.4	6,615.6	50.2	48.9	76.93	2,442.1	258.9	964.0	868.4	95.58	10.086	
9,100.0	6,833.4	8,888.4	6,614.1	52.0	50.7	76.85	2,542.1	257.7	964.3	865.2	99.14	9.727	
9,200.0	6,833.2	8,988.4	6,612.5	53.8	52.6	76.77	2,642.0	256.5	964.6	861.9	102.71	9.392	
9,300.0	6,833.1	9,088.4	6,611.0	55.7	54.4	76.69	2,742.0	255.3	964.9	858.6	106.29	9.078	
9,400.0	6,832.9	9,188.4	6,609.5	57.5	56.3	76.61	2,842.0	254.1	965.2	855.3	109.88	8.785	
9,500.0	6,832.8	9,288.4	6,607.9	59.3	58.1	76.53	2,941.9	252.9	965.5	852.0	113.47	8.509	
9,600.0	6,832.6	9,388.3	6,606.4	61.1	60.0	76.45	3,041.9	251.7	965.8	848.8	117.07	8.250	
9,700.0	6,832.5	9,488.3	6,604.9	63.0	61.9	76.37	3,141.9	250.5	966.1	845.5	120.68	8.006	
9,800.0	6,832.3	9,588.3	6,603.3	64.8	63.7	76.30	3,241.9	249.3	966.4	842.2	124.29	7.776	
9,900.0	6,832.1	9,688.3	6,601.8	66.7	65.6	76.22	3,341.8	248.1	966.8	838.9	127.90	7.559	
10,000.0	6,832.0	9,788.3	6,600.3	68.5	67.5	76.14	3,441.8	246.9	967.1	835.6	131.52	7.353	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Guttersen 31T-401
Project:	SEC.31-T3N-R63W	**TVD Reference:**	WELL @ 4851.0ft (RKB - 15')
Reference Site:	Guttersen 31Y-201 Pad Sec.31-T3N-R63W	**MD Reference:**	WELL @ 4851.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 31T-401	**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 (5-31-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Guttersen 31Y-201 Pad Sec.31-T3N-R63W - Guttersen 31Y-201 - Wellbore #1 - Plan #1 (5-31-13)

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	6,831.8	9,888.3	6,598.7	70.4	69.4	76.06	3,541.8	245.7	967.4	832.3	135.14	7.159	
10,200.0	6,831.7	9,988.3	6,597.2	72.2	71.2	75.98	3,641.7	244.5	967.7	829.0	138.76	6.974	
10,300.0	6,831.5	10,088.3	6,595.7	74.1	73.1	75.90	3,741.7	243.3	968.0	825.6	142.38	6.799	
10,400.0	6,831.4	10,188.3	6,594.1	75.9	75.0	75.82	3,841.7	242.1	968.4	822.3	146.01	6.632	
10,500.0	6,831.2	10,288.3	6,592.6	77.8	76.9	75.74	3,941.7	240.9	968.7	819.0	149.64	6.474	
10,600.0	6,831.0	10,388.2	6,591.0	79.7	78.8	75.66	4,041.6	239.7	969.0	815.7	153.26	6.322	
10,700.0	6,830.9	10,488.2	6,589.5	81.6	80.7	75.58	4,141.6	238.5	969.3	812.4	156.89	6.178	
10,800.0	6,830.7	10,588.2	6,588.0	83.4	82.6	75.50	4,241.6	237.4	969.7	809.1	160.52	6.041	
10,900.0	6,830.6	10,688.2	6,586.4	85.3	84.5	75.42	4,341.5	236.2	970.0	805.8	164.15	5.909	
11,000.0	6,830.4	10,788.2	6,584.9	87.2	86.4	75.34	4,441.5	235.0	970.3	802.5	167.78	5.783	
11,100.0	6,830.3	10,888.2	6,583.4	89.1	88.3	75.26	4,541.5	233.8	970.7	799.3	171.41	5.663	
11,200.0	6,830.1	10,988.2	6,581.8	91.0	90.1	75.19	4,641.5	232.6	971.0	796.0	175.04	5.547	
11,261.8	6,830.0	11,042.6	6,581.0	92.1	91.0	75.14	4,695.8	231.9	971.2	794.2	177.00	5.487	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Guttersen 31T-401
Project:	SEC.31-T3N-R63W	**TVD Reference:**	WELL @ 4851.0ft (RKB - 15')
Reference Site:	Guttersen 31Y-201 Pad Sec.31-T3N-R63W	**MD Reference:**	WELL @ 4851.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 31T-401	**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 (5-31-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Guttersen 31Y-201 Pad Sec.31-T3N-R63W - Guttersen 31Y-441 - Wellbore #1 - Plan #1 (5-31-13)

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	90.00	0.0	58.7	58.7				
100.0	100.0	100.0	100.0	0.1	0.1	90.00	0.0	58.7	58.7	58.5	0.22	261.089	
200.0	200.0	200.0	200.0	0.3	0.3	90.00	0.0	58.7	58.7	58.0	0.67	87.030	CC, ES
300.0	300.0	300.0	300.0	0.6	0.6	-177.86	0.0	58.7	60.4	59.3	1.12	53.979	
400.0	399.8	399.8	399.8	0.8	0.8	-178.03	0.0	58.7	65.7	64.1	1.57	41.895	
500.0	499.5	499.5	499.5	1.0	1.0	-178.26	0.0	58.7	74.4	72.3	2.02	36.795	
600.0	598.7	598.7	598.7	1.3	1.2	-178.49	0.0	58.7	86.5	84.0	2.48	34.931	
700.0	697.8	697.8	697.8	1.6	1.5	-178.69	0.0	58.7	99.6	96.7	2.92	34.059	
800.0	797.0	797.0	797.0	1.9	1.7	-178.85	0.0	58.7	112.7	109.3	3.38	33.376	
900.0	896.1	896.1	896.1	2.3	1.9	-178.97	0.0	58.7	125.8	122.0	3.83	32.830	
1,000.0	995.3	995.3	995.3	2.6	2.1	-179.06	0.0	58.7	138.9	134.6	4.29	32.386	
1,100.0	1,094.4	1,094.4	1,094.4	2.9	2.3	-179.14	0.0	58.7	152.0	147.3	4.75	32.019	
1,200.0	1,193.5	1,193.5	1,193.5	3.3	2.6	-179.21	0.0	58.7	165.2	160.0	5.21	31.711	
1,300.0	1,292.7	1,292.7	1,292.7	3.6	2.8	-179.27	0.0	58.7	178.3	172.6	5.67	31.448	
1,400.0	1,391.8	1,391.8	1,391.8	3.9	3.0	-179.32	0.0	58.7	191.4	185.3	6.13	31.222	
1,500.0	1,490.9	1,490.9	1,490.9	4.3	3.2	-179.36	0.0	58.7	204.5	197.9	6.59	31.026	
1,600.0	1,590.1	1,590.1	1,590.1	4.6	3.5	-179.40	0.0	58.7	217.6	210.6	7.05	30.853	
1,700.0	1,689.2	1,689.2	1,689.2	4.9	3.7	-179.44	0.0	58.7	230.8	223.2	7.52	30.701	
1,800.0	1,788.3	1,788.3	1,788.3	5.3	3.9	-179.47	0.0	58.7	243.9	235.9	7.98	30.565	
1,900.0	1,887.5	1,887.5	1,887.5	5.6	4.1	-179.49	0.0	58.7	257.0	248.6	8.44	30.443	
2,000.0	1,986.6	1,986.6	1,986.6	5.9	4.4	-179.52	0.0	58.7	270.1	261.2	8.90	30.334	
2,100.0	2,085.7	2,085.7	2,085.7	6.3	4.6	-179.54	0.0	58.7	283.2	273.9	9.37	30.235	
2,200.0	2,184.9	2,184.9	2,184.9	6.6	4.8	-179.56	0.0	58.7	296.4	286.5	9.83	30.144	
2,300.0	2,284.0	2,284.0	2,284.0	7.0	5.0	-179.58	0.0	58.7	309.5	299.2	10.29	30.062	
2,400.0	2,383.2	2,383.2	2,383.2	7.3	5.2	-179.60	0.0	58.7	322.6	311.8	10.76	29.986	
2,500.0	2,482.3	2,482.3	2,482.3	7.6	5.5	-179.61	0.0	58.7	335.7	324.5	11.22	29.917	
2,600.0	2,581.4	2,581.4	2,581.4	8.0	5.7	-179.63	0.0	58.7	348.8	337.2	11.69	29.852	
2,700.0	2,680.6	2,680.6	2,680.6	8.3	5.9	-179.64	0.0	58.7	362.0	349.8	12.15	29.793	
2,800.0	2,779.7	2,779.7	2,779.7	8.6	6.1	-179.65	0.0	58.7	375.1	362.5	12.61	29.737	
2,900.0	2,878.8	2,878.8	2,878.8	9.0	6.4	-179.66	0.0	58.7	388.2	375.1	13.08	29.686	
3,000.0	2,978.0	2,978.0	2,978.0	9.3	6.6	-179.68	0.0	58.7	401.3	387.8	13.54	29.637	
3,100.0	3,077.1	3,089.7	3,089.7	9.6	6.8	-179.64	-0.4	57.3	413.3	399.3	14.02	29.486	
3,200.0	3,176.2	3,205.7	3,205.6	10.0	7.0	-179.46	-2.0	51.6	421.4	406.9	14.48	29.108	
3,300.0	3,275.4	3,322.3	3,321.7	10.3	7.3	-179.12	-5.0	41.3	425.6	410.7	14.94	28.482	
3,400.0	3,374.5	3,425.7	3,424.3	10.7	7.5	-178.73	-8.3	29.4	427.2	411.8	15.39	27.755	
3,500.0	3,473.6	3,525.7	3,523.5	11.0	7.7	-178.36	-11.6	17.8	428.7	412.8	15.84	27.070	
3,600.0	3,572.8	3,625.6	3,622.7	11.3	7.9	-177.98	-14.9	6.2	430.2	413.9	16.28	26.420	
3,700.0	3,671.9	3,725.6	3,721.9	11.7	8.2	-177.61	-18.2	-5.4	431.7	415.0	16.73	25.799	
3,800.0	3,771.1	3,817.0	3,812.8	12.0	8.4	-177.30	-21.1	-15.4	433.9	416.7	17.17	25.272	
3,900.0	3,870.2	3,900.0	3,895.5	12.3	8.6	-177.10	-23.0	-22.3	438.9	421.3	17.59	24.954	
4,000.0	3,969.3	3,991.0	3,986.3	12.7	8.8	-176.99	-24.4	-27.1	446.8	428.7	18.02	24.790	
4,100.0	4,068.5	4,077.3	4,072.6	13.0	8.9	-176.99	-25.0	-29.2	457.5	439.1	18.43	24.819	
4,200.0	4,167.6	4,172.3	4,167.6	13.4	9.1	-177.07	-25.0	-29.3	470.5	451.6	18.87	24.937	
4,300.0	4,266.7	4,271.4	4,266.7	13.7	9.3	-177.15	-25.0	-29.3	483.6	464.3	19.32	25.027	
4,400.0	4,365.9	4,370.6	4,365.9	14.0	9.5	-177.22	-25.0	-29.3	496.7	476.9	19.78	25.105	
4,500.0	4,465.0	4,469.7	4,465.0	14.4	9.8	-177.29	-25.0	-29.3	509.8	489.5	20.25	25.180	
4,600.0	4,564.1	4,568.8	4,564.1	14.7	10.0	-177.36	-25.0	-29.3	522.9	502.2	20.71	25.251	
4,700.0	4,663.3	4,668.0	4,663.3	15.0	10.2	-177.43	-25.0	-29.3	536.0	514.8	21.17	25.319	
4,800.0	4,762.4	4,767.1	4,762.4	15.4	10.4	-177.49	-25.0	-29.3	549.1	527.5	21.63	25.384	
4,900.0	4,861.5	4,866.2	4,861.5	15.7	10.6	-177.55	-25.0	-29.3	562.2	540.1	22.09	25.446	
5,000.0	4,960.7	4,965.4	4,960.7	16.1	10.9	-177.60	-25.0	-29.3	575.3	552.8	22.56	25.505	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Guttersen 31T-401
Project:	SEC.31-T3N-R63W	**TVD Reference:**	WELL @ 4851.0ft (RKB - 15')
Reference Site:	Guttersen 31Y-201 Pad Sec.31-T3N-R63W	**MD Reference:**	WELL @ 4851.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 31T-401	**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 (5-31-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Guttersen 31Y-201 Pad Sec.31-T3N-R63W - Guttersen 31Y-441 - Wellbore #1 - Plan #1 (5-31-13)

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	5,059.8	5,064.5	5,059.8	16.4	11.1	-177.66	-25.0	-29.3	588.4	565.4	23.02	25.562	
5,200.0	5,159.0	5,163.7	5,159.0	16.7	11.3	-177.71	-25.0	-29.3	601.3	577.8	23.48	25.605	
5,300.0	5,258.5	5,263.1	5,258.5	16.9	11.5	-177.76	-25.0	-29.3	611.5	587.6	23.91	25.577	
5,400.0	5,358.2	5,362.9	5,358.2	17.1	11.7	-177.79	-25.0	-29.3	618.2	593.9	24.30	25.439	
5,500.0	5,458.2	5,462.9	5,458.2	17.3	12.0	-177.80	-25.0	-29.3	621.4	596.7	24.66	25.195	
5,600.0	5,558.2	5,562.9	5,558.2	17.4	12.2	90.00	-25.0	-29.3	621.7	596.6	25.06	24.811	
5,700.0	5,658.2	5,662.9	5,658.2	17.5	12.4	90.00	-25.0	-29.3	621.7	596.2	25.46	24.413	
5,800.0	5,758.2	5,762.9	5,758.2	17.7	12.6	90.00	-25.0	-29.3	621.7	595.8	25.87	24.027	
5,900.0	5,858.2	5,862.9	5,858.2	17.8	12.8	90.00	-25.0	-29.3	621.7	595.4	26.29	23.651	
6,000.0	5,958.2	5,962.9	5,958.2	18.0	13.1	90.00	-25.0	-29.3	621.7	595.0	26.70	23.286	
6,100.0	6,058.2	6,062.9	6,058.2	18.1	13.3	90.00	-25.0	-29.3	621.7	594.6	27.11	22.932	
6,200.0	6,157.9	6,163.8	6,158.8	18.3	13.5	90.67	-18.9	-29.4	621.7	594.2	27.51	22.600	
6,300.0	6,256.0	6,264.7	6,257.8	18.4	13.7	90.66	0.5	-29.6	621.7	593.8	27.90	22.282	
6,400.0	6,350.8	6,365.6	6,353.3	18.6	14.0	90.63	32.6	-30.0	621.7	593.4	28.31	21.960	
6,500.0	6,440.7	6,466.4	6,443.8	18.8	14.2	90.59	77.1	-30.5	621.7	592.9	28.79	21.598	
6,600.0	6,524.1	6,567.2	6,527.5	18.9	14.5	90.54	133.0	-31.1	621.7	592.3	29.39	21.151	
6,700.0	6,599.5	6,667.9	6,603.1	19.2	14.9	90.48	199.5	-31.9	621.7	591.5	30.20	20.586	
6,800.0	6,665.8	6,768.5	6,669.3	19.5	15.4	90.41	275.2	-32.8	621.8	590.5	31.27	19.881	
6,900.0	6,721.8	6,869.0	6,724.9	19.9	16.1	90.34	358.8	-33.7	621.8	589.1	32.65	19.042	
7,000.0	6,766.5	6,969.4	6,769.0	20.5	16.9	90.26	448.9	-34.8	621.8	587.5	34.36	18.098	
7,100.0	6,799.1	7,069.7	6,800.9	21.2	17.9	90.17	543.9	-35.9	621.8	585.5	36.38	17.095	
7,200.0	6,819.1	7,169.9	6,820.0	22.1	19.1	90.08	642.2	-37.0	621.9	583.2	38.67	16.081	
7,300.0	6,830.0	7,269.9	6,830.6	23.2	20.4	90.06	741.6	-38.1	621.9	580.7	41.19	15.097	
7,400.0	6,835.9	7,370.0	6,835.9	24.4	21.7	90.00	841.5	-39.3	621.9	578.0	43.90	14.167	
7,500.0	6,835.9	7,470.0	6,835.8	25.7	23.1	89.99	941.5	-40.5	622.0	575.2	46.76	13.301	
7,600.0	6,835.8	7,570.0	6,835.7	27.0	24.6	89.99	1,041.5	-41.6	622.0	572.2	49.75	12.502	
7,700.0	6,835.6	7,670.0	6,835.5	28.5	26.2	89.99	1,141.5	-42.8	622.0	569.2	52.85	11.769	
7,800.0	6,835.4	7,770.0	6,835.4	30.0	27.8	89.99	1,241.5	-43.9	622.1	566.0	56.04	11.099	
7,900.0	6,835.3	7,870.0	6,835.2	31.5	29.4	89.99	1,341.5	-45.1	622.1	562.8	59.32	10.488	
8,000.0	6,835.1	7,970.0	6,835.1	33.1	31.1	89.99	1,441.4	-46.2	622.1	559.5	62.65	9.930	
8,100.0	6,835.0	8,070.0	6,834.9	34.7	32.8	89.99	1,541.4	-47.4	622.1	556.1	66.04	9.420	
8,200.0	6,834.8	8,170.0	6,834.8	36.3	34.5	89.99	1,641.4	-48.5	622.2	552.7	69.48	8.955	
8,300.0	6,834.7	8,270.0	6,834.6	38.0	36.3	89.99	1,741.4	-49.7	622.2	549.2	72.96	8.528	
8,400.0	6,834.5	8,370.0	6,834.4	39.7	38.0	90.00	1,841.4	-50.8	622.2	545.7	76.47	8.136	
8,500.0	6,834.3	8,470.0	6,834.3	41.4	39.8	90.00	1,941.4	-52.0	622.2	542.2	80.02	7.776	
8,600.0	6,834.2	8,570.0	6,834.1	43.2	41.6	90.00	2,041.4	-53.2	622.3	538.7	83.59	7.444	
8,700.0	6,834.0	8,670.0	6,834.0	44.9	43.4	90.00	2,141.4	-54.3	622.3	535.1	87.18	7.138	
8,800.0	6,833.9	8,770.0	6,833.8	46.7	45.2	90.00	2,241.4	-55.5	622.3	531.5	90.80	6.854	
8,900.0	6,833.7	8,870.0	6,833.7	48.5	47.0	90.00	2,341.4	-56.6	622.4	527.9	94.43	6.591	
9,000.0	6,833.6	8,970.0	6,833.5	50.2	48.8	90.00	2,441.4	-57.8	622.4	524.3	98.08	6.346	
9,100.0	6,833.4	9,070.0	6,833.4	52.0	50.7	90.00	2,541.4	-58.9	622.4	520.7	101.74	6.117	
9,200.0	6,833.2	9,170.0	6,833.2	53.8	52.5	90.00	2,641.4	-60.1	622.4	517.0	105.42	5.904	
9,300.0	6,833.1	9,270.0	6,833.0	55.7	54.4	90.00	2,741.4	-61.2	622.5	513.4	109.11	5.705	
9,400.0	6,832.9	9,370.0	6,832.9	57.5	56.2	90.00	2,841.3	-62.4	622.5	509.7	112.81	5.518	
9,500.0	6,832.8	9,470.0	6,832.7	59.3	58.1	90.00	2,941.3	-63.5	622.5	506.0	116.52	5.343	
9,600.0	6,832.6	9,570.0	6,832.6	61.1	59.9	90.00	3,041.3	-64.7	622.6	502.3	120.23	5.178	
9,700.0	6,832.5	9,670.0	6,832.4	63.0	61.8	90.00	3,141.3	-65.9	622.6	498.6	123.96	5.023	
9,800.0	6,832.3	9,770.0	6,832.3	64.8	63.7	90.00	3,241.3	-67.0	622.6	494.9	127.69	4.876	
9,900.0	6,832.1	9,870.0	6,832.1	66.7	65.5	90.00	3,341.3	-68.2	622.6	491.2	131.43	4.737	
10,000.0	6,832.0	9,970.0	6,832.0	68.5	67.4	90.00	3,441.3	-69.3	622.7	487.5	135.17	4.606	
10,100.0	6,831.8	10,070.0	6,831.8	70.4	69.3	90.00	3,541.3	-70.5	622.7	483.8	138.92	4.482	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Guttersen 31T-401
Project:	SEC.31-T3N-R63W	**TVD Reference:**	WELL @ 4851.0ft (RKB - 15')
Reference Site:	Guttersen 31Y-201 Pad Sec.31-T3N-R63W	**MD Reference:**	WELL @ 4851.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 31T-401	**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 (5-31-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Guttersen 31Y-201 Pad Sec.31-T3N-R63W - Guttersen 31Y-441 - Wellbore #1 - Plan #1 (5-31-13)

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	6,831.7	10,170.0	6,831.6	72.2	71.2	90.00	3,641.3	-71.6	622.7	480.0	142.68	4.365	
10,300.0	6,831.5	10,270.0	6,831.5	74.1	73.0	90.00	3,741.3	-72.8	622.8	476.3	146.44	4.253	
10,400.0	6,831.4	10,370.0	6,831.3	75.9	74.9	90.00	3,841.3	-73.9	622.8	472.6	150.20	4.146	
10,500.0	6,831.2	10,470.0	6,831.2	77.8	76.8	90.00	3,941.3	-75.1	622.8	468.8	153.97	4.045	
10,600.0	6,831.0	10,570.0	6,831.0	79.7	78.7	90.00	4,041.3	-76.2	622.8	465.1	157.74	3.948	
10,700.0	6,830.9	10,670.0	6,830.9	81.6	80.6	90.00	4,141.3	-77.4	622.9	461.3	161.52	3.856	
10,800.0	6,830.7	10,770.0	6,830.7	83.4	82.5	90.00	4,241.3	-78.6	622.9	457.6	165.29	3.768	
10,900.0	6,830.6	10,870.0	6,830.6	85.3	84.4	90.00	4,341.2	-79.7	622.9	453.8	169.07	3.684	
11,000.0	6,830.4	10,970.0	6,830.4	87.2	86.3	90.00	4,441.2	-80.9	622.9	450.1	172.86	3.604	
11,100.0	6,830.3	11,070.0	6,830.2	89.1	88.2	90.00	4,541.2	-82.0	623.0	446.3	176.65	3.527	
11,200.0	6,830.1	11,170.0	6,830.1	91.0	90.0	90.00	4,641.2	-83.2	623.0	442.6	180.43	3.453	
11,232.0	6,830.0	11,202.0	6,830.0	91.6	90.7	90.00	4,673.2	-83.5	623.0	441.4	181.65	3.430	
11,261.8	6,830.0	11,224.6	6,830.0	92.1	91.1	90.00	4,695.8	-83.8	623.1	440.4	182.64	3.411	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Guttersen 31T-401
Project:	SEC.31-T3N-R63W	**TVD Reference:**	WELL @ 4851.0ft (RKB - 15')
Reference Site:	Guttersen 31Y-201 Pad Sec.31-T3N-R63W	**MD Reference:**	WELL @ 4851.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 31T-401	**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 (5-31-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Guttersen 31Y-201 Pad Sec.31-T3N-R63W - Guttersen 43-31(Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

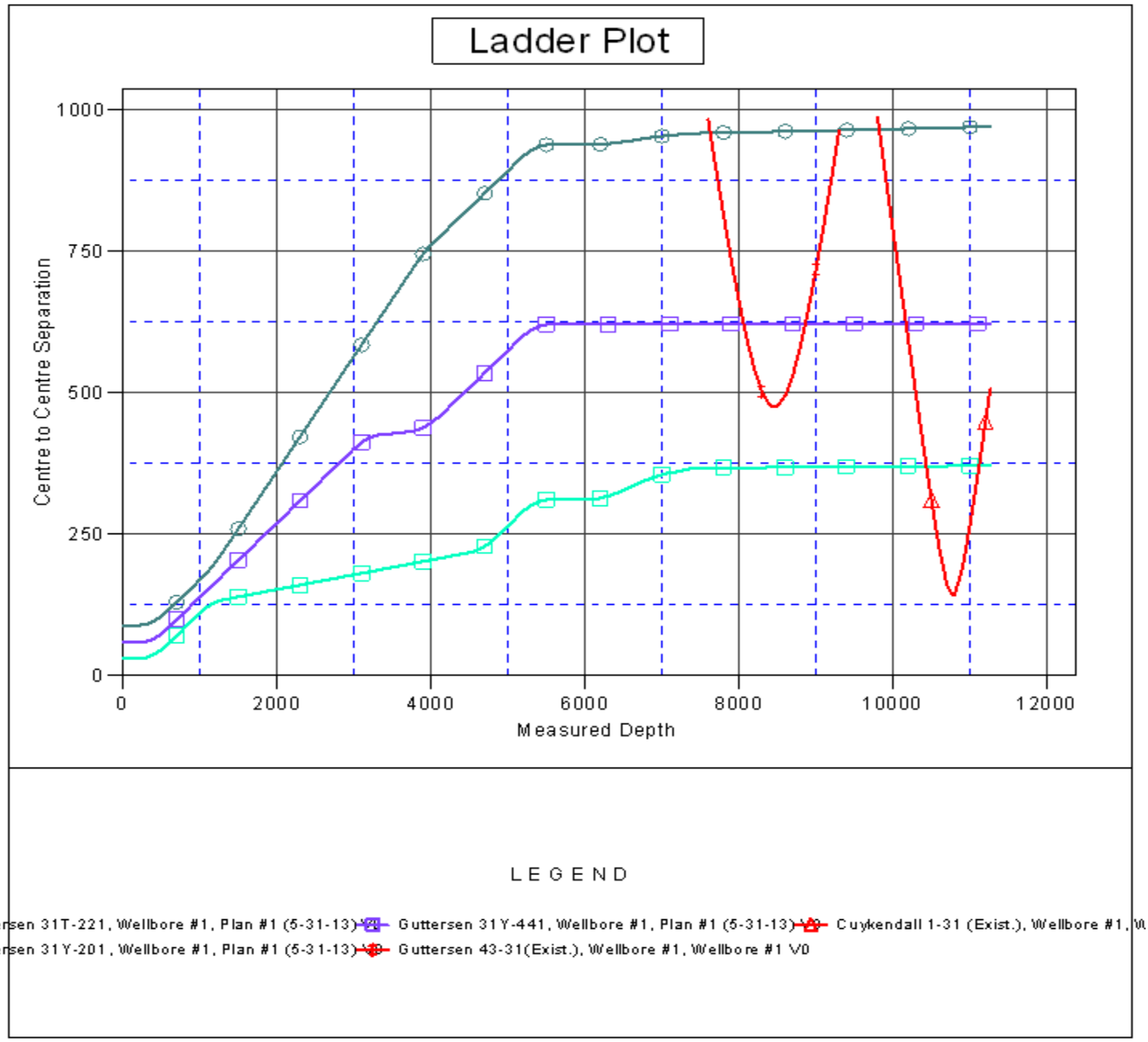
Survey Program: 7300-UNKNOWN

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
7,600.0	6,835.8	6,835.8	6,835.8	27.0	136.7	90.16	1,901.6	-198.4	984.2	822.4	161.86	6.081	
7,700.0	6,835.6	6,835.6	6,835.6	28.5	136.7	90.14	1,901.6	-198.4	898.0	734.6	163.40	5.495	
7,800.0	6,835.4	6,835.4	6,835.4	30.0	136.7	90.13	1,901.6	-198.4	814.8	649.8	164.99	4.939	
7,900.0	6,835.3	6,835.3	6,835.3	31.5	136.7	90.11	1,901.6	-198.4	735.9	569.3	166.62	4.417	
8,000.0	6,835.1	6,835.1	6,835.1	33.1	136.7	90.09	1,901.6	-198.4	662.8	494.5	168.28	3.938	
8,100.0	6,835.0	6,835.0	6,835.0	34.7	136.7	90.07	1,901.6	-198.4	597.4	427.4	169.97	3.515	
8,200.0	6,834.8	6,834.8	6,834.8	36.3	136.7	90.05	1,901.6	-198.4	542.7	371.0	171.68	3.161	
8,300.0	6,834.7	6,834.7	6,834.7	38.0	136.7	90.03	1,901.6	-198.4	502.2	328.8	173.41	2.896	
8,400.0	6,834.5	6,834.5	6,834.5	39.7	136.7	90.01	1,901.6	-198.4	479.4	304.2	175.16	2.737	
8,461.8	6,834.4	6,834.4	6,834.4	40.8	136.7	90.00	1,901.6	-198.4	475.4	299.1	176.25	2.697	CC, ES
8,500.0	6,834.3	6,834.3	6,834.3	41.4	136.7	89.99	1,901.6	-198.4	476.9	300.0	176.92	2.696	SF
8,600.0	6,834.2	6,834.2	6,834.2	43.2	136.7	89.97	1,901.6	-198.4	495.1	316.4	178.70	2.770	
8,700.0	6,834.0	6,834.0	6,834.0	44.9	136.7	89.95	1,901.6	-198.4	531.7	351.2	180.49	2.946	
8,800.0	6,833.9	6,833.9	6,833.9	46.7	136.7	89.94	1,901.6	-198.4	583.4	401.1	182.29	3.200	
8,900.0	6,833.7	6,833.7	6,833.7	48.5	136.7	89.92	1,901.6	-198.4	646.6	462.4	184.10	3.512	
9,000.0	6,833.6	6,833.6	6,833.6	50.2	136.7	89.90	1,901.6	-198.4	718.1	532.2	185.92	3.862	
9,100.0	6,833.4	6,833.4	6,833.4	52.0	136.7	89.88	1,901.6	-198.4	795.8	608.1	187.75	4.239	
9,200.0	6,833.2	6,833.2	6,833.2	53.8	136.7	89.86	1,901.6	-198.4	878.0	688.5	189.58	4.632	
9,300.0	6,833.1	6,833.1	6,833.1	55.7	136.7	89.84	1,901.6	-198.4	963.6	772.2	191.42	5.034	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Guttersen 31T-401
Project:	SEC.31-T3N-R63W	**TVD Reference:**	WELL @ 4851.0ft (RKB - 15')
Reference Site:	Guttersen 31Y-201 Pad Sec.31-T3N-R63W	**MD Reference:**	WELL @ 4851.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 31T-401	**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 (5-31-13)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4851.0ft (RKB - 15')	Coordinates are relative to: Guttersen 31T-401
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: 0.66°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Guttersen 31T-401
Project:	SEC.31-T3N-R63W	**TVD Reference:**	WELL @ 4851.0ft (RKB - 15')
Reference Site:	Guttersen 31Y-201 Pad Sec.31-T3N-R63W	**MD Reference:**	WELL @ 4851.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Guttersen 31T-401	**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 (5-31-13)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4851.0ft (RKB - 15')	Coordinates are relative to: Guttersen 31T-401
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: 0.66°