

PETROLEUM DEVELOPMENT CORP Weld County CO

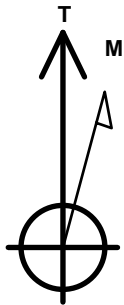
Well Name: **Becker Ranch 5J-203**

Surface Location: Becker Ranch 5M-HZ Pad Sec.5-T3N-R64W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4815.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1339320.82	3257754.34	40.261150	-104.576400	
RKB - 15' WELL @ 4830.0ft (RKB - 15')						

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 227'FNL & 2188'FWL	1.0	0.0	0.0	Point
BHL 500'FSL & 1445'FWL	6800.0	-4593.8	-717.4	Point



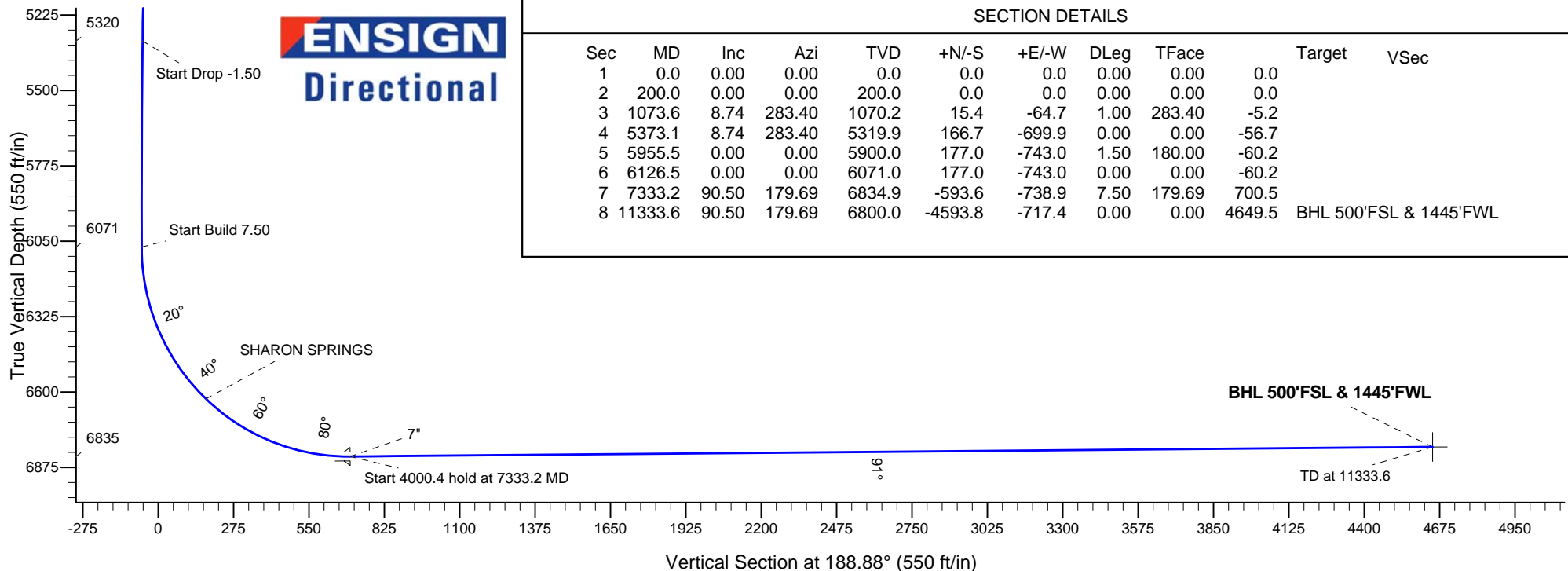
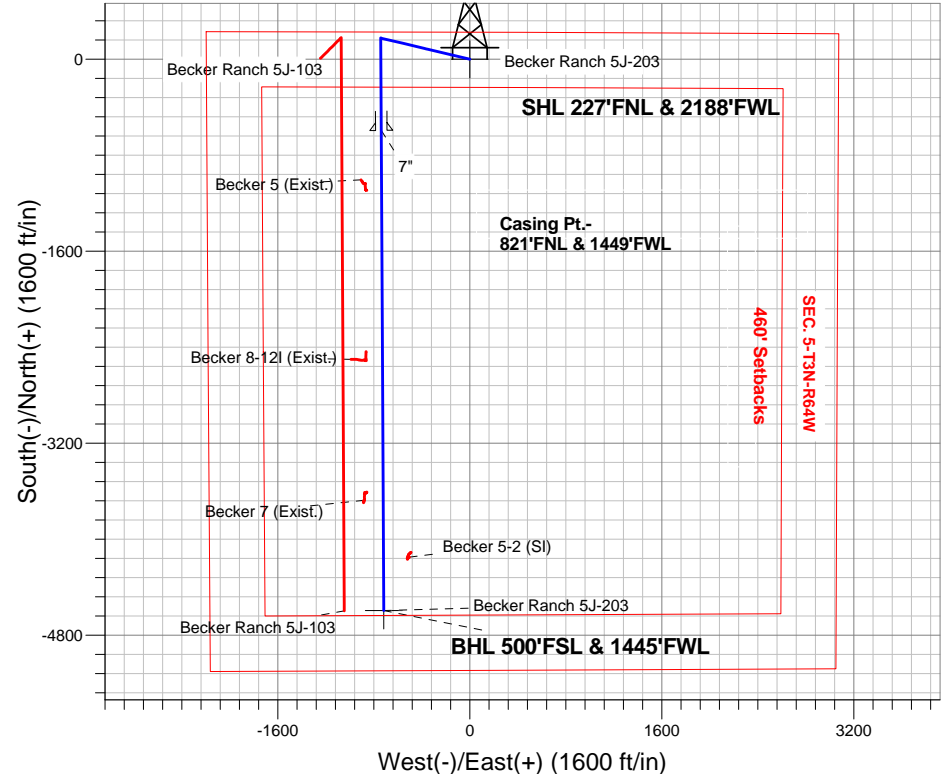
Azimuths to True North
Magnetic North: 8.26°

Magnetic Field
Strength: 52696.9snT
Dip Angle: 66.84°
Date: 1/27/2015
Model: IGRF2010

Becker Ranch 5M-HZ Pad Sec.5-T3N-R64W
Becker Ranch 5J-203
Plan #2 (1-23-15)
6:37, January 27 2015

ANNOTATIONS

TVD	MD	Annotation
200.0	200.0	KOP - Start Build 1.00
5319.8	5373.1	Start Drop -1.50
6071.0	6126.5	Start Build 7.50
6834.9	7333.2	Start 4000.4 hold at 7333.2 MD
6800.0	11333.6	TD at 11333.6



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	Target	VSec
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	1073.6	8.74	283.40	1070.2	15.4	-64.7	1.00	283.40	-5.2	
4	5373.1	8.74	283.40	5319.9	166.7	-699.9	0.00	0.00	-56.7	
5	5955.5	0.00	0.00	5900.0	177.0	-743.0	1.50	180.00	-60.2	
6	6126.5	0.00	0.00	6071.0	177.0	-743.0	0.00	0.00	-60.2	
7	7333.2	90.50	179.69	6834.9	-593.6	-738.9	7.50	179.69	700.5	
8	11333.6	90.50	179.69	6800.0	-4593.8	-717.4	0.00	0.00	4649.5	BHL 500'FSL & 1445'FWL



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.5-T3N-R64W

Becker Ranch 5M-HZ Pad Sec.5-T3N-R64W

Becker Ranch 5J-203

Wellbore #1

Plan: Plan #2 (1-23-15)

Standard Planning Report

27 January, 2015

Database:	Landmark	Local Co-ordinate Reference:	Well Becker Ranch 5J-203
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4830.0ft (RKB - 15')
Project:	SEC.5-T3N-R64W	MD Reference:	WELL @ 4830.0ft (RKB - 15')
Site:	Becker Ranch 5M-HZ Pad Sec.5-T3N-R64W	North Reference:	True
Well:	Becker Ranch 5J-203	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (1-23-15)		

Project	SEC.5-T3N-R64W, 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						Becker Ranch 5M-HZ Pad Sec.5-T3N-R64W											
Site Position:						Northing:			1,339,320.83ft			Latitude:			40.261150		
From:			Lat/Long			Easting:			3,257,754.34ft			Longitude:			-104.576400		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.60 °		

Well	Becker Ranch 5J-203					
Well Position	+N/-S	0.0 ft	Northing:	1,339,320.82 ft	Latitude:	40.261150
	+E/-W	0.0 ft	Easting:	3,257,754.34 ft	Longitude:	-104.576400
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,815.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/27/2015	8.26	66.84	52,697

Design	Plan #2 (1-23-15)			
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	188.88

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	
1,073.6	8.74	283.40	1,070.2	15.4	-64.7	1.00	1.00	0.00	283.40	
5,373.1	8.74	283.40	5,319.9	166.7	-699.9	0.00	0.00	0.00	0.00	
5,955.5	0.00	0.00	5,900.0	177.0	-743.0	1.50	-1.50	0.00	180.00	
6,126.5	0.00	0.00	6,071.0	177.0	-743.0	0.00	0.00	0.00	0.00	
7,333.2	90.50	179.69	6,834.9	-593.6	-738.9	7.50	7.50	0.00	179.69	
11,333.6	90.50	179.69	6,800.0	-4,593.8	-717.4	0.00	0.00	0.00	0.00	BHL 500'FSL & 144

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Project:	SEC.5-T3N-R64W	MD Reference:	WELL @ 4830.0ft (RKB - 15')
Site:	Becker Ranch 5M-HZ Pad Sec.5-T3N-R64W	North Reference:	True
Well:	Becker Ranch 5J-203	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (1-23-15)		

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 227°FNL & 2188°FWL									
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
KOP - Start Build 1.00									
300.0	1.00	283.40	300.0	0.2	-0.8	-0.1	1.00	1.00	0.00
400.0	2.00	283.40	400.0	0.8	-3.4	-0.3	1.00	1.00	0.00
500.0	3.00	283.40	499.9	1.8	-7.6	-0.6	1.00	1.00	0.00
600.0	4.00	283.40	599.7	3.2	-13.6	-1.1	1.00	1.00	0.00
700.0	5.00	283.40	699.4	5.1	-21.2	-1.7	1.00	1.00	0.00
800.0	6.00	283.40	798.9	7.3	-30.5	-2.5	1.00	1.00	0.00
900.0	7.00	283.40	898.3	9.9	-41.5	-3.4	1.00	1.00	0.00
1,000.0	8.00	283.40	997.4	12.9	-54.2	-4.4	1.00	1.00	0.00
1,073.6	8.74	283.40	1,070.2	15.4	-64.7	-5.2	1.00	1.00	0.00
1,100.0	8.74	283.40	1,096.3	16.3	-68.6	-5.6	0.00	0.00	0.00
1,200.0	8.74	283.40	1,195.2	19.9	-83.3	-6.8	0.00	0.00	0.00
1,300.0	8.74	283.40	1,294.0	23.4	-98.1	-8.0	0.00	0.00	0.00
1,400.0	8.74	283.40	1,392.8	26.9	-112.9	-9.2	0.00	0.00	0.00
1,500.0	8.74	283.40	1,491.7	30.4	-127.7	-10.3	0.00	0.00	0.00
1,600.0	8.74	283.40	1,590.5	33.9	-142.4	-11.5	0.00	0.00	0.00
1,700.0	8.74	283.40	1,689.4	37.5	-157.2	-12.7	0.00	0.00	0.00
1,800.0	8.74	283.40	1,788.2	41.0	-172.0	-13.9	0.00	0.00	0.00
1,900.0	8.74	283.40	1,887.0	44.5	-186.8	-15.1	0.00	0.00	0.00
2,000.0	8.74	283.40	1,985.9	48.0	-201.5	-16.3	0.00	0.00	0.00
2,100.0	8.74	283.40	2,084.7	51.5	-216.3	-17.5	0.00	0.00	0.00
2,200.0	8.74	283.40	2,183.6	55.0	-231.1	-18.7	0.00	0.00	0.00
2,300.0	8.74	283.40	2,282.4	58.6	-245.9	-19.9	0.00	0.00	0.00
2,400.0	8.74	283.40	2,381.2	62.1	-260.6	-21.1	0.00	0.00	0.00
2,500.0	8.74	283.40	2,480.1	65.6	-275.4	-22.3	0.00	0.00	0.00
2,600.0	8.74	283.40	2,578.9	69.1	-290.2	-23.5	0.00	0.00	0.00
2,700.0	8.74	283.40	2,677.8	72.6	-305.0	-24.7	0.00	0.00	0.00
2,800.0	8.74	283.40	2,776.6	76.2	-319.7	-25.9	0.00	0.00	0.00
2,900.0	8.74	283.40	2,875.4	79.7	-334.5	-27.1	0.00	0.00	0.00
3,000.0	8.74	283.40	2,974.3	83.2	-349.3	-28.3	0.00	0.00	0.00
3,100.0	8.74	283.40	3,073.1	86.7	-364.1	-29.5	0.00	0.00	0.00
3,200.0	8.74	283.40	3,172.0	90.2	-378.8	-30.7	0.00	0.00	0.00
3,300.0	8.74	283.40	3,270.8	93.8	-393.6	-31.9	0.00	0.00	0.00
3,400.0	8.74	283.40	3,369.6	97.3	-408.4	-33.1	0.00	0.00	0.00
3,500.0	8.74	283.40	3,468.5	100.8	-423.1	-34.3	0.00	0.00	0.00
3,600.0	8.74	283.40	3,567.3	104.3	-437.9	-35.5	0.00	0.00	0.00
3,700.0	8.74	283.40	3,666.2	107.8	-452.7	-36.7	0.00	0.00	0.00
3,734.2	8.74	283.40	3,700.0	109.0	-457.8	-37.1	0.00	0.00	0.00
PARKMAN									
3,800.0	8.74	283.40	3,765.0	111.4	-467.5	-37.9	0.00	0.00	0.00
3,900.0	8.74	283.40	3,863.8	114.9	-482.2	-39.1	0.00	0.00	0.00
4,000.0	8.74	283.40	3,962.7	118.4	-497.0	-40.3	0.00	0.00	0.00
4,100.0	8.74	283.40	4,061.5	121.9	-511.8	-41.5	0.00	0.00	0.00
4,200.0	8.74	283.40	4,160.3	125.4	-526.6	-42.7	0.00	0.00	0.00
4,300.0	8.74	283.40	4,259.2	129.0	-541.3	-43.9	0.00	0.00	0.00
4,400.0	8.74	283.40	4,358.0	132.5	-556.1	-45.1	0.00	0.00	0.00
4,442.5	8.74	283.40	4,400.0	134.0	-562.4	-45.6	0.00	0.00	0.00
SUSSEX									

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Project:	SEC.5-T3N-R64W	MD Reference:	WELL @ 4830.0ft (RKB - 15')
Site:	Becker Ranch 5M-HZ Pad Sec.5-T3N-R64W	North Reference:	True
Well:	Becker Ranch 5J-203	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (1-23-15)		

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)
4,500.0	8.74	283.40	4,456.9	136.0	-570.9	-46.3	0.00	0.00	0.00
4,600.0	8.74	283.40	4,555.7	139.5	-585.7	-47.5	0.00	0.00	0.00
4,700.0	8.74	283.40	4,654.5	143.0	-600.4	-48.7	0.00	0.00	0.00
4,800.0	8.74	283.40	4,753.4	146.6	-615.2	-49.9	0.00	0.00	0.00
4,900.0	8.74	283.40	4,852.2	150.1	-630.0	-51.1	0.00	0.00	0.00
5,000.0	8.74	283.40	4,951.1	153.6	-644.8	-52.3	0.00	0.00	0.00
5,100.0	8.74	283.40	5,049.9	157.1	-659.5	-53.5	0.00	0.00	0.00
5,150.7	8.74	283.40	5,100.0	158.9	-667.0	-54.1	0.00	0.00	0.00
SHANNON									
5,200.0	8.74	283.40	5,148.7	160.6	-674.3	-54.7	0.00	0.00	0.00
5,300.0	8.74	283.40	5,247.6	164.2	-689.1	-55.9	0.00	0.00	0.00
5,373.1	8.74	283.40	5,319.8	166.7	-699.9	-56.7	0.00	0.00	0.00
Start Drop -1.50									
5,400.0	8.33	283.40	5,346.4	167.7	-703.8	-57.1	1.50	-1.50	0.00
5,500.0	6.83	283.40	5,445.6	170.7	-716.6	-58.1	1.50	-1.50	0.00
5,600.0	5.33	283.40	5,545.0	173.2	-726.9	-58.9	1.50	-1.50	0.00
5,700.0	3.83	283.40	5,644.7	175.0	-734.7	-59.6	1.50	-1.50	0.00
5,800.0	2.33	283.40	5,744.5	176.3	-739.9	-60.0	1.50	-1.50	0.00
5,900.0	0.83	283.40	5,844.5	176.9	-742.6	-60.2	1.50	-1.50	0.00
5,955.5	0.00	0.00	5,900.0	177.0	-743.0	-60.2	1.50	-1.50	0.00
6,000.0	0.00	0.00	5,944.5	177.0	-743.0	-60.2	0.00	0.00	0.00
6,100.0	0.00	0.00	6,044.5	177.0	-743.0	-60.2	0.00	0.00	0.00
6,126.5	0.00	0.00	6,071.0	177.0	-743.0	-60.2	0.00	0.00	0.00
Start Build 7.50									
6,200.0	5.51	179.69	6,144.4	173.5	-743.0	-56.8	7.50	7.50	0.00
6,300.0	13.01	179.69	6,243.0	157.4	-742.9	-40.9	7.50	7.50	0.00
6,400.0	20.51	179.69	6,338.7	128.6	-742.7	-12.4	7.50	7.50	0.00
6,500.0	28.01	179.69	6,429.8	87.5	-742.5	28.1	7.50	7.50	0.00
6,600.0	35.51	179.69	6,514.7	34.9	-742.2	80.0	7.50	7.50	0.00
6,700.0	43.01	179.69	6,592.1	-28.3	-741.9	142.5	7.50	7.50	0.00
6,746.3	46.48	179.69	6,625.0	-60.9	-741.7	174.6	7.50	7.50	0.00
SHARON SPRINGS									
6,800.0	50.51	179.69	6,660.6	-101.1	-741.5	214.3	7.50	7.50	0.00
6,900.0	58.01	179.69	6,718.9	-182.2	-741.1	294.4	7.50	7.50	0.00
7,000.0	65.51	179.69	6,766.2	-270.3	-740.6	381.3	7.50	7.50	0.00
7,100.0	73.01	179.69	6,801.6	-363.7	-740.1	473.6	7.50	7.50	0.00
7,200.0	80.51	179.69	6,824.5	-461.0	-739.6	569.6	7.50	7.50	0.00
7,300.0	88.01	179.69	6,834.5	-560.4	-739.0	667.8	7.50	7.50	0.00
7,333.2	90.50	179.69	6,834.9	-593.6	-738.9	700.5	7.49	7.49	0.00
Start 4000.4 hold at 7333.2 MD - 7"									
7,400.0	90.50	179.69	6,834.3	-660.4	-738.5	766.5	0.00	0.00	0.00
7,500.0	90.50	179.69	6,833.5	-760.4	-738.0	865.2	0.00	0.00	0.00
7,600.0	90.50	179.69	6,832.6	-860.4	-737.4	963.9	0.00	0.00	0.00
7,700.0	90.50	179.69	6,831.7	-960.4	-736.9	1,062.6	0.00	0.00	0.00
7,800.0	90.50	179.69	6,830.8	-1,060.4	-736.4	1,161.3	0.00	0.00	0.00
7,900.0	90.50	179.69	6,830.0	-1,160.4	-735.8	1,260.0	0.00	0.00	0.00
8,000.0	90.50	179.69	6,829.1	-1,260.4	-735.3	1,358.7	0.00	0.00	0.00
8,100.0	90.50	179.69	6,828.2	-1,360.4	-734.8	1,457.5	0.00	0.00	0.00
8,200.0	90.50	179.69	6,827.3	-1,460.4	-734.2	1,556.2	0.00	0.00	0.00
8,300.0	90.50	179.69	6,826.5	-1,560.4	-733.7	1,654.9	0.00	0.00	0.00
8,400.0	90.50	179.69	6,825.6	-1,660.4	-733.1	1,753.6	0.00	0.00	0.00
8,500.0	90.50	179.69	6,824.7	-1,760.4	-732.6	1,852.3	0.00	0.00	0.00

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Well:	Becker Ranch 5J-203	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (1-23-15)		

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)
8,600.0	90.50	179.69	6,823.9	-1,860.4	-732.1	1,951.0	0.00	0.00	0.00
8,700.0	90.50	179.69	6,823.0	-1,960.4	-731.5	2,049.7	0.00	0.00	0.00
8,800.0	90.50	179.69	6,822.1	-2,060.3	-731.0	2,148.5	0.00	0.00	0.00
8,900.0	90.50	179.69	6,821.2	-2,160.3	-730.5	2,247.2	0.00	0.00	0.00
9,000.0	90.50	179.69	6,820.4	-2,260.3	-729.9	2,345.9	0.00	0.00	0.00
9,100.0	90.50	179.69	6,819.5	-2,360.3	-729.4	2,444.6	0.00	0.00	0.00
9,200.0	90.50	179.69	6,818.6	-2,460.3	-728.8	2,543.3	0.00	0.00	0.00
9,300.0	90.50	179.69	6,817.7	-2,560.3	-728.3	2,642.0	0.00	0.00	0.00
9,400.0	90.50	179.69	6,816.9	-2,660.3	-727.8	2,740.8	0.00	0.00	0.00
9,500.0	90.50	179.69	6,816.0	-2,760.3	-727.2	2,839.5	0.00	0.00	0.00
9,600.0	90.50	179.69	6,815.1	-2,860.3	-726.7	2,938.2	0.00	0.00	0.00
9,700.0	90.50	179.69	6,814.3	-2,960.3	-726.2	3,036.9	0.00	0.00	0.00
9,800.0	90.50	179.69	6,813.4	-3,060.3	-725.6	3,135.6	0.00	0.00	0.00
9,900.0	90.50	179.69	6,812.5	-3,160.3	-725.1	3,234.3	0.00	0.00	0.00
10,000.0	90.50	179.69	6,811.6	-3,260.3	-724.6	3,333.0	0.00	0.00	0.00
10,100.0	90.50	179.69	6,810.8	-3,360.3	-724.0	3,431.8	0.00	0.00	0.00
10,200.0	90.50	179.69	6,809.9	-3,460.3	-723.5	3,530.5	0.00	0.00	0.00
10,300.0	90.50	179.69	6,809.0	-3,560.3	-722.9	3,629.2	0.00	0.00	0.00
10,400.0	90.50	179.69	6,808.1	-3,660.3	-722.4	3,727.9	0.00	0.00	0.00
10,500.0	90.50	179.69	6,807.3	-3,760.3	-721.9	3,826.6	0.00	0.00	0.00
10,600.0	90.50	179.69	6,806.4	-3,860.3	-721.3	3,925.3	0.00	0.00	0.00
10,700.0	90.50	179.69	6,805.5	-3,960.2	-720.8	4,024.0	0.00	0.00	0.00
10,800.0	90.50	179.69	6,804.7	-4,060.2	-720.3	4,122.8	0.00	0.00	0.00
10,900.0	90.50	179.69	6,803.8	-4,160.2	-719.7	4,221.5	0.00	0.00	0.00
11,000.0	90.50	179.69	6,802.9	-4,260.2	-719.2	4,320.2	0.00	0.00	0.00
11,100.0	90.50	179.69	6,802.0	-4,360.2	-718.7	4,418.9	0.00	0.00	0.00
11,200.0	90.50	179.69	6,801.2	-4,460.2	-718.1	4,517.6	0.00	0.00	0.00
11,300.0	90.50	179.69	6,800.3	-4,560.2	-717.6	4,616.3	0.00	0.00	0.00
11,333.6	90.50	179.69	6,800.0	-4,593.8	-717.4	4,649.5	0.00	0.00	0.00

TD at 11333.6 - BHL 500'FSL & 1445'FWL

Targets

Target Name

- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- Shape									
BHL 500'FSL & 1445'I	0.00	0.00	6,800.0	-4,593.8	-717.4	1,334,719.97	3,257,084.86	40.248540	-104.578970
- plan hits target center									
- Point									
SHL 227'FNL & 2188'	0.00	0.00	1.0	0.0	0.0	1,339,320.83	3,257,754.34	40.261150	-104.576400
- plan hits target center									
- Point									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,333.2	6,834.9	7"	7	7-1/2

Database:	Landmark	Local Co-ordinate Reference:	Well Becker Ranch 5J-203
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4830.0ft (RKB - 15')
Project:	SEC.5-T3N-R64W	MD Reference:	WELL @ 4830.0ft (RKB - 15')
Site:	Becker Ranch 5M-HZ Pad Sec.5-T3N-R64W	North Reference:	True
Well:	Becker Ranch 5J-203	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (1-23-15)		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,734.2	3,700.0	PARKMAN		0.00		
4,442.5	4,400.0	SUSSEX		0.00		
5,150.7	5,100.0	SHANNON		0.00		
6,746.3	6,625.0	SHARON SPRINGS		0.00		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
200.0	200.0	0.0	0.0	KOP - Start Build 1.00	
5,373.1	5,319.8	166.7	-699.9	Start Drop -1.50	
6,126.5	6,071.0	177.0	-743.0	Start Build 7.50	
7,333.2	6,834.9	-593.6	-738.9	Start 4000.4 hold at 7333.2 MD	
11,333.6	6,800.0	-4,593.8	-717.4	TD at 11333.6	



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.5-T3N-R64W

Becker Ranch 5M-HZ Pad Sec.5-T3N-R64W

Becker Ranch 5J-203

Wellbore #1

Plan #2 (1-23-15)

Anticollision Report

27 January, 2015



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Becker Ranch 5J-203
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4830.0ft (RKB - 15')
Reference Site:	Becker Ranch 5M-HZ Pad Sec.5-T3N-R64W	MD Reference:	WELL @ 4830.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5J-203	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 #2 (1-23-15)	Offset TVD Reference:	Offset Datum

Reference	Plan #2 (1-23-15)
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	Stations
Depth Range:	Unlimited
Results Limited by:	Maximum center-center distance of 1,000.0ft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Elliptical Conic

Survey Tool Program		Date	1/27/2015		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	11,333.1	Plan #2 (1-23-15) (Wellbore #1)	MWD	MWD - Standard	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Becker Ranch 5J-HZ Pad Sec.5-T3N-R64W						
Becker Ranch 5J-103 - Wellbore #1 - Plan #2 (1-23-15)	6,195.6	6,152.2	329.7	301.4	11.644	CC
Becker Ranch 5J-103 - Wellbore #1 - Plan #2 (1-23-15)	11,333.6	11,251.4	330.8	151.6	1.846	ES, SF
Becker Ranch 5M-HZ Pad Sec.5-T3N-R64W						
Becker Ranch 5J-323 - Wellbore #1 - Plan #2 (1-23-15)	200.0	200.0	32.8	32.1	48.637	CC
Becker Ranch 5J-323 - Wellbore #1 - Plan #2 (1-23-15)	300.0	300.0	33.0	31.9	29.591	ES
Becker Ranch 5J-323 - Wellbore #1 - Plan #2 (1-23-15)	11,333.6	11,404.3	341.5	167.0	1.957	SF
Becker Ranch 5M-243 - Wellbore #1 - Plan #2 (1-23-15)	200.0	200.0	61.9	61.3	91.852	CC
Becker Ranch 5M-243 - Wellbore #1 - Plan #2 (1-23-15)	300.0	300.0	62.1	61.0	55.710	ES
Becker Ranch 5M-243 - Wellbore #1 - Plan #2 (1-23-15)	11,333.6	11,282.2	661.6	482.7	3.699	SF
Becker Ranch 5M-303 - Wellbore #1 - Plan #2 (1-23-15)	200.0	201.0	91.1	90.4	134.607	CC
Becker Ranch 5M-303 - Wellbore #1 - Plan #2 (1-23-15)	300.0	301.0	91.3	90.2	81.661	ES
Becker Ranch 5M-303 - Wellbore #1 - Plan #2 (1-23-15)	11,333.6	11,463.2	994.7	816.8	5.593	SF
Existing Wells Sec.5-T3N-R64W						
Becker 5 (Exist.) - Wellbore #1 - Wellbore #1	7,751.0	6,826.8	166.5	125.8	4.093	CC, ES, SF
Becker 5-2 (SI) - Wellbore #1 - Wellbore #1	10,897.1	6,722.8	205.1	109.8	2.153	CC
Becker 5-2 (SI) - Wellbore #1 - Wellbore #1	10,900.0	6,722.7	205.1	109.8	2.152	ES, SF
Becker 7 (Exist.) - Wellbore #1 - Wellbore #1	10,422.3	6,738.9	163.2	78.4	1.925	CC, ES, SF
Becker 8-12I (Exist.) - Wellbore #1 - Wellbore #1	9,239.8	6,754.3	236.4	170.5	3.590	CC, ES, SF

Offset Design												
Becker Ranch 5J-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5J-103 - Wellbore #1 - Plan #2 (1-23-15)												
Survey Program: 0-MWD												
Reference												
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	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)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor
2,100.0	2,084.7	2,136.6	2,134.7	6.2	4.8	-13.64	51.7	-1,200.6	985.4	975.9	9.53	103.366
2,200.0	2,183.6	2,234.7	2,232.5	6.6	5.0	-13.57	56.3	-1,196.1	966.0	956.0	10.01	96.509
2,300.0	2,282.4	2,332.8	2,330.4	7.0	5.3	-13.50	60.9	-1,191.5	946.7	936.2	10.49	90.269
2,400.0	2,381.2	2,430.9	2,428.3	7.3	5.5	-13.43	65.5	-1,186.9	927.3	916.3	10.97	84.566
2,500.0	2,480.1	2,529.0	2,526.2	7.7	5.7	-13.36	70.1	-1,182.4	907.9	896.5	11.44	79.336
2,600.0	2,578.9	2,627.1	2,624.1	8.0	6.0	-13.28	74.7	-1,177.8	888.6	876.6	11.92	74.523
2,700.0	2,677.8	2,725.2	2,722.0	8.4	6.2	-13.20	79.3	-1,173.2	869.2	856.8	12.40	70.080
2,800.0	2,776.6	2,823.3	2,819.9	8.8	6.5	-13.12	83.9	-1,168.6	849.9	837.0	12.88	65.965

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Becker Ranch 5J-203
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4830.0ft (RKB - 15')
Reference Site:	Becker Ranch 5M-HZ Pad Sec.5-T3N-R64W	MD Reference:	WELL @ 4830.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5J-203	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 #2 (1-23-15)	Offset TVD Reference:	Offset Datum

Offset Design Becker Ranch 5J-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5J-103 - Wellbore #1 - Plan #2 (1-23-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
2,900.0	2,875.4	2,921.4	2,917.7	9.1	6.7	-13.03		88.5	-1,164.1	830.5	817.1	13.36	62.145	
3,000.0	2,974.3	3,019.5	3,015.6	9.5	7.0	-12.94		93.1	-1,159.5	811.1	797.3	13.84	58.589	
3,100.0	3,073.1	3,117.6	3,113.5	9.9	7.2	-12.84		97.7	-1,154.9	791.8	777.5	14.33	55.271	
3,200.0	3,172.0	3,215.7	3,211.4	10.2	7.4	-12.74		102.3	-1,150.4	772.4	757.6	14.81	52.168	
3,300.0	3,270.8	3,313.8	3,309.3	10.6	7.7	-12.63		106.9	-1,145.8	753.1	737.8	15.29	49.260	
3,400.0	3,369.6	3,411.9	3,407.2	11.0	7.9	-12.52		111.5	-1,141.2	733.8	718.0	15.77	46.529	
3,500.0	3,468.5	3,510.0	3,505.1	11.3	8.2	-12.40		116.1	-1,136.7	714.4	698.2	16.25	43.960	
3,600.0	3,567.3	3,608.1	3,603.0	11.7	8.4	-12.27		120.7	-1,132.1	695.1	678.3	16.73	41.539	
3,700.0	3,666.2	3,706.2	3,700.8	12.1	8.7	-12.14		125.3	-1,127.5	675.7	658.5	17.21	39.254	
3,800.0	3,765.0	3,804.3	3,798.7	12.4	8.9	-12.00		129.8	-1,122.9	656.4	638.7	17.70	37.093	
3,900.0	3,863.8	3,902.4	3,896.6	12.8	9.2	-11.85		134.4	-1,118.4	637.1	618.9	18.18	35.047	
4,000.0	3,962.7	4,000.5	3,994.5	13.2	9.4	-11.69		139.0	-1,113.8	617.8	599.1	18.66	33.106	
4,100.0	4,061.5	4,098.6	4,092.4	13.5	9.7	-11.53		143.6	-1,109.2	598.4	579.3	19.14	31.264	
4,200.0	4,160.3	4,196.7	4,190.3	13.9	9.9	-11.35		148.2	-1,104.7	579.1	559.5	19.62	29.513	
4,300.0	4,259.2	4,294.8	4,288.2	14.3	10.2	-11.15		152.8	-1,100.1	559.8	539.7	20.10	27.846	
4,400.0	4,358.0	4,392.9	4,386.0	14.6	10.4	-10.95		157.4	-1,095.5	540.5	519.9	20.59	26.257	
4,500.0	4,456.9	4,491.0	4,483.9	15.0	10.6	-10.73		162.0	-1,091.0	521.2	500.2	21.07	24.741	
4,600.0	4,555.7	4,589.1	4,581.8	15.3	10.9	-10.49		166.6	-1,086.4	501.9	480.4	21.55	23.294	
4,700.0	4,654.5	4,687.2	4,679.7	15.7	11.1	-10.23		171.2	-1,081.8	482.7	460.6	22.03	21.910	
4,800.0	4,753.4	4,783.1	4,775.4	16.1	11.4	-9.97		175.6	-1,077.4	463.5	441.0	22.50	20.601	
4,900.0	4,852.2	4,874.3	4,866.5	16.4	11.6	-9.86		178.7	-1,074.4	445.4	422.5	22.92	19.438	
5,000.0	4,951.1	4,966.0	4,958.2	16.8	11.7	-9.97		180.2	-1,072.9	429.0	405.7	23.33	18.388	
5,100.0	5,049.9	5,061.7	5,053.9	17.2	11.9	-10.30		180.3	-1,072.8	413.9	390.1	23.76	17.419	
5,200.0	5,148.7	5,160.6	5,152.7	17.5	12.1	-10.69		180.3	-1,072.8	398.9	374.7	24.22	16.474	
5,300.0	5,247.6	5,259.4	5,251.6	17.9	12.3	-11.11		180.3	-1,072.8	384.0	359.3	24.68	15.558	
5,373.1	5,319.9	5,331.7	5,323.9	18.2	12.4	-11.44		180.3	-1,072.8	373.1	348.1	25.02	14.910	
5,400.0	5,346.4	5,358.3	5,350.4	18.3	12.5	-11.55		180.3	-1,072.8	369.2	344.0	25.16	14.676	
5,500.0	5,445.6	5,457.4	5,449.6	18.5	12.7	-11.94		180.3	-1,072.8	356.3	330.7	25.61	13.909	
5,600.0	5,545.0	5,556.8	5,549.0	18.7	12.9	-12.27		180.3	-1,072.8	345.9	319.9	26.05	13.278	
5,700.0	5,644.7	5,656.5	5,648.7	18.9	13.1	-12.53		180.3	-1,072.8	338.1	311.6	26.47	12.775	
5,800.0	5,744.5	5,756.4	5,748.5	19.1	13.3	-12.71		180.3	-1,072.8	332.9	306.0	26.86	12.393	
5,900.0	5,844.5	5,856.3	5,848.5	19.3	13.5	-12.81		180.3	-1,072.8	330.2	302.9	27.23	12.126	
5,955.5	5,900.0	5,911.8	5,904.0	19.3	13.6	-89.42		180.3	-1,072.8	329.8	302.4	27.42	12.029	
6,000.0	5,944.5	5,956.3	5,948.5	19.4	13.7	-89.42		180.3	-1,072.8	329.8	302.2	27.59	11.952	
6,100.0	6,044.5	6,056.4	6,048.6	19.5	13.9	-89.46		180.1	-1,072.8	329.8	301.8	27.99	11.784	
6,126.5	6,071.0	6,083.1	6,075.2	19.6	14.0	-89.64		179.1	-1,072.7	329.8	301.7	28.08	11.743	
6,150.0	6,094.5	6,106.6	6,098.7	19.6	14.0	90.44		177.4	-1,072.7	329.7	301.6	28.17	11.703	
6,195.6	6,140.0	6,152.2	6,144.0	19.7	14.1	89.98		172.0	-1,072.7	329.7	301.4	28.32	11.644 CC	
6,200.0	6,144.4	6,156.6	6,148.3	19.7	14.1	89.94		171.3	-1,072.7	329.7	301.4	28.33	11.638	
6,250.0	6,193.9	6,206.4	6,197.3	19.7	14.1	89.44		162.1	-1,072.7	329.7	301.3	28.47	11.584	
6,300.0	6,243.0	6,256.0	6,245.3	19.7	14.2	88.95		149.8	-1,072.6	329.8	301.2	28.58	11.538	
6,350.0	6,291.3	6,305.5	6,292.3	19.8	14.2	88.47		134.5	-1,072.5	329.8	301.2	28.68	11.499	
6,400.0	6,338.7	6,354.8	6,338.0	19.8	14.3	87.99		116.2	-1,072.4	329.9	301.2	28.78	11.465	
6,450.0	6,384.9	6,403.9	6,382.3	19.8	14.3	87.52		95.0	-1,072.3	330.0	301.2	28.87	11.433	
6,500.0	6,429.8	6,452.8	6,425.1	19.9	14.3	87.06		71.2	-1,072.2	330.2	301.2	28.96	11.400	
6,550.0	6,473.1	6,501.6	6,466.0	19.9	14.4	86.61		44.7	-1,072.0	330.3	301.2	29.07	11.363	
6,600.0	6,514.7	6,550.0	6,505.0	19.9	14.4	86.19		15.9	-1,071.9	330.4	301.3	29.20	11.317	
6,650.0	6,554.5	6,598.6	6,542.2	20.0	14.5	85.77		-15.4	-1,071.7	330.6	301.3	29.36	11.260	
6,700.0	6,592.1	6,647.0	6,577.1	20.0	14.6	85.38		-48.8	-1,071.5	330.8	301.2	29.57	11.187	
6,750.0	6,627.5	6,695.2	6,609.7	20.1	14.7	85.00		-84.3	-1,071.3	331.0	301.1	29.83	11.096	
6,800.0	6,660.6	6,743.3	6,640.0	20.1	14.8	84.65		-121.6	-1,071.1	331.1	301.0	30.15	10.984	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Becker Ranch 5J-203
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4830.0ft (RKB - 15')
Reference Site:	Becker Ranch 5M-HZ Pad Sec.5-T3N-R64W	MD Reference:	WELL @ 4830.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5J-203	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 #2 (1-23-15)	Offset TVD Reference:	Offset Datum

Offset Design Becker Ranch 5J-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5J-103 - Wellbore #1 - Plan #2 (1-23-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
6,850.0	6,691.1	6,791.2	6,667.8	20.2	15.1	84.32		-160.7	-1,070.9	331.3	300.8	30.54	10.850	
6,900.0	6,718.9	6,839.1	6,693.0	20.3	15.3	84.01		-201.4	-1,070.7	331.5	300.5	31.01	10.692	
6,950.0	6,744.0	6,866.8	6,715.6	20.5	15.6	83.73		-243.4	-1,070.4	331.7	300.1	31.56	10.510	
7,000.0	6,766.2	6,934.5	6,735.5	20.6	16.0	83.47		-286.7	-1,070.2	331.8	299.6	32.19	10.307	
7,050.0	6,785.4	6,982.1	6,752.6	20.8	16.3	83.24		-331.1	-1,070.0	332.0	299.1	32.92	10.085	
7,100.0	6,801.6	7,029.6	6,766.9	21.1	16.7	83.04		-376.4	-1,069.7	332.1	298.4	33.73	9.846	
7,150.0	6,814.6	7,077.1	6,778.3	21.4	17.2	82.87		-422.5	-1,069.5	332.2	297.6	34.63	9.594	
7,200.0	6,824.5	7,124.5	6,786.9	21.7	17.7	82.72		-469.1	-1,069.2	332.3	296.7	35.61	9.334	
7,250.0	6,831.1	7,171.8	6,792.5	22.1	18.2	82.61		-516.1	-1,068.9	332.4	295.8	36.66	9.068	
7,300.0	6,834.5	7,219.2	6,795.2	22.5	18.8	82.52		-563.4	-1,068.7	332.5	294.7	37.77	8.801	
7,333.2	6,834.9	7,250.9	6,795.4	22.8	19.1	82.49		-595.1	-1,068.5	332.5	293.9	38.55	8.624	
7,400.0	6,834.3	7,317.8	6,795.0	23.5	20.0	82.52		-662.0	-1,068.1	332.5	292.3	40.19	8.272	
7,500.0	6,833.5	7,417.8	6,794.4	24.5	21.3	82.56		-762.0	-1,067.6	332.4	289.6	42.81	7.766	
7,600.0	6,832.6	7,517.8	6,793.8	25.7	22.7	82.61		-862.0	-1,067.0	332.4	286.8	45.59	7.291	
7,700.0	6,831.7	7,617.8	6,793.2	27.0	24.2	82.65		-962.0	-1,066.5	332.3	283.8	48.51	6.851	
7,800.0	6,830.8	7,717.8	6,792.6	28.4	25.8	82.70		-1,061.9	-1,065.9	332.3	280.7	51.55	6.446	
7,900.0	6,830.0	7,817.8	6,792.0	29.8	27.3	82.74		-1,161.9	-1,065.4	332.2	277.5	54.69	6.075	
8,000.0	6,829.1	7,917.8	6,791.4	31.3	29.0	82.79		-1,261.9	-1,064.8	332.2	274.3	57.91	5.736	
8,100.0	6,828.2	8,017.8	6,790.8	32.9	30.6	82.83		-1,361.9	-1,064.3	332.2	270.9	61.20	5.427	
8,200.0	6,827.3	8,117.8	6,790.2	34.4	32.3	82.88		-1,461.9	-1,063.8	332.1	267.6	64.55	5.145	
8,300.0	6,826.5	8,217.8	6,789.5	36.0	34.0	82.92		-1,561.9	-1,063.2	332.1	264.1	67.95	4.887	
8,400.0	6,825.6	8,317.8	6,788.9	37.7	35.8	82.96		-1,661.9	-1,062.7	332.0	260.6	71.39	4.651	
8,500.0	6,824.7	8,417.8	6,788.3	39.3	37.5	83.01		-1,761.9	-1,062.1	332.0	257.1	74.87	4.434	
8,600.0	6,823.9	8,517.8	6,787.7	41.0	39.3	83.05		-1,861.9	-1,061.6	331.9	253.6	78.38	4.235	
8,700.0	6,823.0	8,617.8	6,787.1	42.7	41.1	83.10		-1,961.9	-1,061.0	331.9	250.0	81.92	4.051	
8,800.0	6,822.1	8,717.8	6,786.5	44.5	42.9	83.14		-2,061.9	-1,060.5	331.8	246.4	85.48	3.882	
8,900.0	6,821.2	8,817.8	6,785.9	46.2	44.7	83.19		-2,161.9	-1,059.9	331.8	242.7	89.07	3.725	
9,000.0	6,820.4	8,917.8	6,785.3	47.9	46.5	83.23		-2,261.9	-1,059.4	331.8	239.1	92.67	3.580	
9,100.0	6,819.5	9,017.8	6,784.7	49.7	48.3	83.28		-2,361.9	-1,058.8	331.7	235.4	96.30	3.445	
9,200.0	6,818.6	9,117.8	6,784.0	51.5	50.2	83.32		-2,461.9	-1,058.3	331.7	231.7	99.94	3.319	
9,300.0	6,817.7	9,217.8	6,783.4	53.3	52.0	83.37		-2,561.9	-1,057.7	331.6	228.0	103.59	3.201	
9,400.0	6,816.9	9,317.8	6,782.8	55.1	53.8	83.41		-2,661.9	-1,057.2	331.6	224.3	107.25	3.092	
9,500.0	6,816.0	9,417.8	6,782.2	56.9	55.7	83.46		-2,761.9	-1,056.6	331.5	220.6	110.93	2.989	
9,600.0	6,815.1	9,517.8	6,781.6	58.7	57.5	83.50		-2,861.9	-1,056.1	331.5	216.9	114.61	2.892	
9,700.0	6,814.3	9,617.8	6,781.0	60.5	59.4	83.54		-2,961.9	-1,055.5	331.5	213.2	118.31	2.802	
9,800.0	6,813.4	9,717.8	6,780.4	62.3	61.3	83.59		-3,061.9	-1,055.0	331.4	209.4	122.02	2.716	
9,900.0	6,812.5	9,817.8	6,779.8	64.2	63.1	83.63		-3,161.9	-1,054.4	331.4	205.7	125.73	2.636	
10,000.0	6,811.6	9,917.8	6,779.2	66.0	65.0	83.68		-3,261.9	-1,053.9	331.3	201.9	129.45	2.560	
10,100.0	6,810.8	10,017.8	6,778.5	67.8	66.9	83.72		-3,361.9	-1,053.3	331.3	198.1	133.17	2.488	
10,200.0	6,809.9	10,117.8	6,777.9	69.7	68.7	83.77		-3,461.9	-1,052.8	331.3	194.4	136.91	2.420	
10,300.0	6,809.0	10,217.8	6,777.3	71.5	70.6	83.81		-3,561.9	-1,052.2	331.2	190.6	140.64	2.355	
10,400.0	6,808.1	10,317.8	6,776.7	73.4	72.5	83.86		-3,661.9	-1,051.7	331.2	186.8	144.39	2.294	
10,500.0	6,807.3	10,417.8	6,776.1	75.2	74.4	83.90		-3,761.8	-1,051.1	331.1	183.0	148.14	2.235	
10,600.0	6,806.4	10,517.8	6,775.5	77.1	76.3	83.95		-3,861.8	-1,050.6	331.1	179.2	151.89	2.180	
10,700.0	6,805.5	10,617.8	6,774.9	78.9	78.1	83.99		-3,961.8	-1,050.0	331.1	175.4	155.65	2.127	
10,800.0	6,804.7	10,717.8	6,774.3	80.8	80.0	84.04		-4,061.8	-1,049.5	331.0	171.6	159.41	2.077	
10,900.0	6,803.8	10,817.8	6,773.7	82.7	81.9	84.08		-4,161.8	-1,049.0	331.0	167.8	163.17	2.028	
11,000.0	6,802.9	10,917.8	6,773.1	84.5	83.8	84.13		-4,261.8	-1,048.4	331.0	164.0	166.94	1.982	
11,100.0	6,802.0	11,017.8	6,772.4	86.4	85.7	84.17		-4,361.8	-1,047.9	330.9	160.2	170.71	1.938	
11,200.0	6,801.2	11,117.8	6,771.8	88.3	87.6	84.22		-4,461.8	-1,047.3	330.9	156.4	174.49	1.896	
11,300.0	6,800.3	11,217.8	6,771.2	90.2	89.4	84.26		-4,561.8	-1,046.8	330.8	152.6	178.20	1.857	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Becker Ranch 5J-203
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4830.0ft (RKB - 15')
Reference Site:	Becker Ranch 5M-HZ Pad Sec.5-T3N-R64W	MD Reference:	WELL @ 4830.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5J-203	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 #2 (1-23-15)	Offset TVD Reference:	Offset Datum

Offset Design Becker Ranch 5J-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5J-103 - Wellbore #1 - Plan #2 (1-23-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference	Offset	Semi Major Axis		Distance										
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
11,333.6	6,800.0	11,251.4	6,771.0	90.7	89.9	84.28	-4,595.4	-1,046.6	330.8	151.6	179.23	1.846 ES, SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Becker Ranch 5J-203
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4830.0ft (RKB - 15')
Reference Site:	Becker Ranch 5M-HZ Pad Sec.5-T3N-R64W	MD Reference:	WELL @ 4830.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5J-203	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 #2 (1-23-15)	Offset TVD Reference:	Offset Datum

Offset Design Becker Ranch 5M-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5J-323 - Wellbore #1 - Plan #2 (1-23-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	180.00	180.00	-32.8	0.0	32.8				
100.0	100.0	100.0	100.0	0.1	0.1	180.00	180.00	-32.8	0.0	32.8	32.6	0.22	145.910	
200.0	200.0	200.0	200.0	0.3	0.3	180.00	180.00	-32.8	0.0	32.8	32.1	0.67	48.637 CC	
300.0	300.0	300.0	300.0	0.6	0.6	-104.87	-104.87	-32.8	0.0	33.0	31.9	1.12	29.591 ES	
400.0	400.0	400.0	400.0	0.8	0.8	-109.16	-109.16	-32.8	0.0	33.8	32.2	1.56	21.677	
500.0	499.9	499.9	499.9	1.0	1.0	-115.81	-115.81	-32.8	0.0	35.4	33.4	2.01	17.631	
600.0	599.7	599.7	599.7	1.2	1.2	-123.98	-123.98	-32.8	0.0	38.5	36.0	2.47	15.583	
700.0	699.4	699.4	699.4	1.5	1.5	-132.56	-132.56	-32.8	0.0	43.4	40.5	2.94	14.781	
800.0	798.9	798.9	798.9	1.8	1.7	-140.55	-140.55	-32.8	0.0	50.4	47.0	3.40	14.816	
900.0	898.3	898.3	898.3	2.0	1.9	-147.42	-147.42	-32.8	0.0	59.6	55.7	3.86	15.422	
1,000.0	997.4	997.4	997.4	2.4	2.1	-153.05	-153.05	-32.8	0.0	70.9	66.6	4.32	16.411	
1,073.6	1,070.2	1,070.2	1,070.2	2.6	2.3	-156.45	-156.45	-32.8	0.0	80.6	76.0	4.66	17.306	
1,100.0	1,096.3	1,096.3	1,096.3	2.7	2.4	-157.54	-157.54	-32.8	0.0	84.3	79.6	4.78	17.640	
1,200.0	1,195.2	1,195.2	1,195.2	3.0	2.6	-160.91	-160.91	-32.8	0.0	98.6	93.3	5.24	18.808	
1,300.0	1,294.0	1,295.9	1,295.9	3.4	2.8	-163.45	-163.45	-32.4	-0.7	112.3	106.6	5.70	19.710	
1,400.0	1,392.8	1,397.1	1,397.1	3.7	3.0	-165.41	-165.41	-31.3	-3.0	124.4	118.2	6.15	20.240	
1,500.0	1,491.7	1,498.8	1,498.7	4.1	3.2	-167.03	-167.03	-29.3	-7.0	134.8	128.2	6.60	20.435	
1,600.0	1,590.5	1,600.9	1,600.5	4.4	3.5	-168.43	-168.43	-26.5	-12.5	143.6	136.6	7.06	20.355	
1,700.0	1,689.4	1,703.2	1,702.6	4.8	3.7	-169.71	-169.71	-22.9	-19.8	150.7	143.2	7.52	20.049	
1,800.0	1,788.2	1,805.7	1,804.6	5.1	3.9	-170.92	-170.92	-18.5	-28.6	156.1	148.1	7.98	19.556	
1,900.0	1,887.0	1,908.5	1,906.7	5.5	4.2	-172.10	-172.10	-13.2	-39.1	159.7	151.3	8.45	18.908	
2,000.0	1,985.9	2,011.3	2,008.5	5.9	4.5	-173.31	-173.31	-7.2	-51.3	161.7	152.7	8.92	18.128	
2,100.0	2,084.7	2,114.1	2,110.2	6.2	4.8	-174.57	-174.57	-0.3	-65.1	161.9	152.5	9.39	17.238	
2,200.0	2,183.6	2,214.5	2,209.3	6.6	5.1	-175.86	-175.86	7.0	-79.6	161.0	151.1	9.86	16.327	
2,300.0	2,282.4	2,314.4	2,307.9	7.0	5.4	-177.15	-177.15	14.2	-94.1	160.2	149.8	10.34	15.498	
2,400.0	2,381.2	2,414.4	2,406.5	7.3	5.7	-178.47	-178.47	21.5	-108.5	159.5	148.6	10.81	14.745	
2,500.0	2,480.1	2,514.3	2,505.1	7.7	6.0	-179.79	-179.79	28.7	-123.0	158.8	147.5	11.30	14.056	
2,600.0	2,578.9	2,614.2	2,603.8	8.0	6.4	178.88	178.88	35.9	-137.5	158.2	146.5	11.79	13.425	
2,700.0	2,677.8	2,714.1	2,702.4	8.4	6.7	177.54	177.54	43.2	-151.9	157.8	145.5	12.28	12.844	
2,800.0	2,776.6	2,814.1	2,801.0	8.8	7.1	176.19	176.19	50.4	-166.4	157.4	144.6	12.79	12.308	
2,900.0	2,875.4	2,914.0	2,899.6	9.1	7.4	174.83	174.83	57.6	-180.9	157.1	143.8	13.30	11.811	
3,000.0	2,974.3	3,013.9	2,998.2	9.5	7.8	173.47	173.47	64.9	-195.3	156.9	143.1	13.82	11.351	
3,100.0	3,073.1	3,113.9	3,096.8	9.9	8.1	172.11	172.11	72.1	-209.8	156.8	142.4	14.35	10.922	
3,187.5	3,159.6	3,201.3	3,183.1	10.2	8.4	170.92	170.92	78.4	-222.4	156.7	141.9	14.83	10.571	
3,200.0	3,172.0	3,213.8	3,195.4	10.2	8.5	170.75	170.75	79.3	-224.3	156.7	141.8	14.89	10.523	
3,300.0	3,270.8	3,313.7	3,294.0	10.6	8.8	169.38	169.38	86.6	-238.7	156.8	141.3	15.45	10.150	
3,400.0	3,369.6	3,413.7	3,392.7	11.0	9.2	168.02	168.02	93.8	-253.2	156.9	140.9	16.01	9.801	
3,500.0	3,468.5	3,513.6	3,491.3	11.3	9.5	166.66	166.66	101.0	-267.7	157.2	140.6	16.59	9.475	
3,600.0	3,567.3	3,613.5	3,589.9	11.7	9.9	165.31	165.31	108.3	-282.1	157.5	140.3	17.18	9.168	
3,700.0	3,666.2	3,713.4	3,688.5	12.1	10.3	163.96	163.96	115.5	-296.6	157.9	140.1	17.78	8.881	
3,800.0	3,765.0	3,813.4	3,787.1	12.4	10.6	162.62	162.62	122.7	-311.1	158.4	140.0	18.39	8.611	
3,900.0	3,863.8	3,913.3	3,885.7	12.8	11.0	161.29	161.29	130.0	-325.5	159.0	139.9	19.02	8.357	
4,000.0	3,962.7	4,013.2	3,984.3	13.2	11.4	159.97	159.97	137.2	-340.0	159.6	140.0	19.66	8.119	
4,100.0	4,061.5	4,113.2	4,082.9	13.5	11.7	158.66	158.66	144.4	-354.5	160.4	140.1	20.32	7.895	
4,200.0	4,160.3	4,213.1	4,181.6	13.9	12.1	157.36	157.36	151.7	-368.9	161.2	140.2	20.98	7.684	
4,300.0	4,259.2	4,309.7	4,277.1	14.3	12.4	156.38	156.38	158.1	-381.8	163.1	141.6	21.59	7.557	
4,400.0	4,358.0	4,406.3	4,372.9	14.6	12.6	155.93	155.93	163.5	-392.6	167.1	145.0	22.12	7.556	
4,500.0	4,456.9	4,502.7	4,468.8	15.0	12.9	156.00	156.00	167.8	-401.1	173.1	150.5	22.58	7.666	
4,600.0	4,555.7	4,600.0	4,565.9	15.3	13.1	156.53	156.53	171.0	-407.6	181.1	158.1	22.99	7.879	
4,700.0	4,654.5	4,694.5	4,660.2	15.7	13.2	157.43	157.43	173.1	-411.7	191.2	167.8	23.34	8.191	
4,800.0	4,753.4	4,789.6	4,755.4	16.1	13.4	158.62	158.62	174.1	-413.8	203.3	179.7	23.65	8.597	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Becker Ranch 5J-203
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4830.0ft (RKB - 15')
Reference Site:	Becker Ranch 5M-HZ Pad Sec.5-T3N-R64W	MD Reference:	WELL @ 4830.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5J-203	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 #2 (1-23-15)	Offset TVD Reference:	Offset Datum

Offset Design Survey Program: 0-MWD											Becker Ranch 5M-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5J-323 - Wellbore #1 - Plan #2 (1-23-15)		Offset Site Error: 0.0 ft	
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
4,900.0	4,852.2	4,886.5	4,852.2	16.4	13.5	160.01	174.2	-414.0	217.3	193.4	23.95	9.076		
5,000.0	4,951.1	4,985.3	4,951.1	16.8	13.7	161.30	174.2	-414.0	231.7	207.4	24.27	9.545		
5,100.0	5,049.9	5,084.2	5,049.9	17.2	13.9	162.43	174.2	-414.0	246.1	221.5	24.62	9.998		
5,200.0	5,148.7	5,183.0	5,148.7	17.5	14.1	163.44	174.2	-414.0	260.7	235.7	24.98	10.435		
5,300.0	5,247.6	5,281.9	5,247.6	17.9	14.2	164.34	174.2	-414.0	275.3	249.9	25.35	10.857		
5,373.1	5,319.9	5,354.1	5,319.9	18.2	14.4	164.94	174.2	-414.0	286.0	260.4	25.63	11.156		
5,400.0	5,346.4	5,380.7	5,346.4	18.3	14.4	165.16	174.2	-414.0	289.8	264.1	25.74	11.262		
5,500.0	5,445.6	5,479.8	5,445.6	18.5	14.6	165.84	174.2	-414.0	302.6	276.5	26.09	11.599		
5,600.0	5,545.0	5,579.3	5,545.0	18.7	14.8	166.35	174.2	-414.0	312.9	286.5	26.44	11.834		
5,700.0	5,644.7	5,679.0	5,644.7	18.9	14.9	166.72	174.2	-414.0	320.7	293.9	26.79	11.972		
5,800.0	5,744.5	5,778.8	5,744.5	19.1	15.1	166.95	174.2	-414.0	325.9	298.8	27.12	12.018		
5,900.0	5,844.5	5,878.8	5,844.5	19.3	15.3	167.07	174.2	-414.0	328.6	301.2	27.44	11.976		
5,955.5	5,900.0	5,934.3	5,900.0	19.3	15.4	90.49	174.2	-414.0	329.0	301.4	27.59	11.923		
6,000.0	5,944.5	5,978.8	5,944.5	19.4	15.5	90.49	174.2	-414.0	329.0	301.2	27.77	11.849		
6,100.0	6,044.5	6,078.8	6,044.5	19.5	15.7	90.49	174.2	-414.0	329.0	300.9	28.16	11.684		
6,126.5	6,071.0	6,105.3	6,071.0	19.6	15.7	90.49	174.2	-414.0	329.0	300.7	28.26	11.641		
6,150.0	6,094.5	6,128.8	6,094.5	19.6	15.8	-89.27	174.2	-414.0	329.0	300.6	28.38	11.593		
6,200.0	6,144.4	6,178.7	6,144.4	19.7	15.8	-89.82	174.2	-414.0	329.0	300.4	28.60	11.504		
6,210.0	6,154.3	6,188.6	6,154.3	19.7	15.9	-90.00	174.2	-414.0	329.0	300.3	28.65	11.485		
6,250.0	6,193.9	6,228.4	6,194.1	19.7	15.9	-90.85	173.7	-414.0	329.0	300.2	28.84	11.410		
6,300.0	6,243.0	6,278.5	6,244.1	19.7	16.0	-91.93	170.3	-414.0	329.2	300.1	29.05	11.330		
6,350.0	6,291.3	6,329.1	6,294.2	19.8	16.1	-93.00	163.5	-413.9	329.4	300.2	29.24	11.268		
6,400.0	6,338.7	6,380.1	6,344.2	19.8	16.1	-94.07	153.3	-413.9	329.8	300.4	29.40	11.220		
6,450.0	6,384.9	6,431.5	6,393.7	19.8	16.1	-95.12	139.6	-413.8	330.3	300.8	29.53	11.187		
6,500.0	6,429.8	6,483.4	6,442.7	19.9	16.2	-96.15	122.6	-413.7	330.9	301.3	29.63	11.166		
6,550.0	6,473.1	6,535.7	6,490.8	19.9	16.2	-97.15	102.0	-413.6	331.6	301.9	29.72	11.156		
6,600.0	6,514.7	6,588.4	6,537.7	19.9	16.2	-98.12	78.0	-413.5	332.4	302.6	29.80	11.153		
6,650.0	6,554.5	6,641.6	6,583.2	20.0	16.2	-99.06	50.6	-413.3	333.2	303.3	29.88	11.152		
6,700.0	6,592.1	6,695.2	6,627.1	20.0	16.2	-99.96	19.8	-413.2	334.1	304.1	29.97	11.148		
6,750.0	6,627.5	6,749.2	6,669.0	20.1	16.3	-100.81	-14.3	-413.0	335.0	304.9	30.08	11.136		
6,800.0	6,660.6	6,803.6	6,708.7	20.1	16.3	-101.61	-51.5	-412.8	335.9	305.7	30.24	11.109		
6,850.0	6,691.1	6,858.5	6,745.9	20.2	16.4	-102.35	-91.8	-412.6	336.9	306.4	30.47	11.057		
6,900.0	6,718.9	6,913.7	6,780.4	20.3	16.4	-103.04	-134.9	-412.3	337.8	307.0	30.77	10.978		
6,950.0	6,744.0	6,969.2	6,811.8	20.5	16.5	-103.67	-180.7	-412.1	338.7	307.5	31.16	10.867		
7,000.0	6,766.2	7,025.1	6,840.0	20.6	16.7	-104.24	-229.0	-411.8	339.5	307.8	31.67	10.719		
7,050.0	6,785.4	7,081.3	6,864.6	20.8	16.9	-104.74	-279.4	-411.5	340.2	307.9	32.30	10.535		
7,100.0	6,801.6	7,137.7	6,885.6	21.1	17.2	-105.17	-331.8	-411.2	340.9	307.9	33.05	10.315		
7,150.0	6,814.6	7,194.4	6,902.8	21.4	17.6	-105.52	-385.8	-410.9	341.5	307.6	33.94	10.063		
7,200.0	6,824.5	7,251.2	6,915.9	21.7	18.1	-105.81	-441.1	-410.6	342.0	307.0	34.95	9.784		
7,250.0	6,831.1	7,308.2	6,924.9	22.1	18.6	-106.02	-497.3	-410.3	342.3	306.2	36.09	9.484		
7,300.0	6,834.5	7,365.3	6,929.7	22.5	19.2	-106.15	-554.2	-410.0	342.6	305.2	37.35	9.173		
7,333.2	6,834.9	7,403.2	6,930.5	22.8	19.6	-106.20	-592.1	-409.8	342.6	304.4	38.23	8.963		
7,400.0	6,834.3	7,470.7	6,929.8	23.5	20.4	-106.19	-659.6	-409.5	342.6	302.8	39.81	8.607		
7,500.0	6,833.5	7,570.7	6,928.8	24.5	21.6	-106.16	-759.6	-408.9	342.6	300.3	42.31	8.098		
7,600.0	6,832.6	7,670.7	6,927.8	25.7	23.0	-106.14	-859.6	-408.4	342.6	297.6	44.98	7.616		
7,700.0	6,831.7	7,770.7	6,926.8	27.0	24.4	-106.12	-959.6	-407.8	342.5	294.8	47.79	7.168		
7,800.0	6,830.8	7,870.7	6,925.8	28.4	25.9	-106.09	-1,059.6	-407.3	342.5	291.8	50.71	6.754		
7,900.0	6,830.0	7,970.7	6,924.8	29.8	27.4	-106.07	-1,159.6	-406.7	342.5	288.7	53.74	6.373		
8,000.0	6,829.1	8,070.7	6,923.8	31.3	29.0	-106.05	-1,259.6	-406.2	342.4	285.6	56.84	6.025		
8,100.0	6,828.2	8,170.7	6,922.7	32.9	30.6	-106.03	-1,359.5	-405.6	342.4	282.4	60.02	5.705		
8,200.0	6,827.3	8,270.7	6,921.7	34.4	32.3	-106.00	-1,459.5	-405.1	342.4	279.1	63.25	5.413		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Becker Ranch 5J-203
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4830.0ft (RKB - 15')
Reference Site:	Becker Ranch 5M-HZ Pad Sec.5-T3N-R64W	MD Reference:	WELL @ 4830.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5J-203	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 #2 (1-23-15)	Offset TVD Reference:	Offset Datum

Offset Design Survey Program: 0-MWD											Becker Ranch 5M-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5J-323 - Wellbore #1 - Plan #2 (1-23-15)		Offset Site Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
8,300.0	6,826.5	8,370.7	6,920.7	36.0	33.9	-105.98	-1,559.5	-404.6	342.4	275.8	66.54	5.145		
8,400.0	6,825.6	8,470.7	6,919.7	37.7	35.6	-105.96	-1,659.5	-404.0	342.3	272.5	69.87	4.899		
8,500.0	6,824.7	8,570.7	6,918.7	39.3	37.4	-105.93	-1,759.5	-403.5	342.3	269.1	73.24	4.674		
8,600.0	6,823.9	8,670.7	6,917.7	41.0	39.1	-105.91	-1,859.5	-402.9	342.3	265.6	76.64	4.466		
8,700.0	6,823.0	8,770.7	6,916.7	42.7	40.9	-105.89	-1,959.5	-402.4	342.2	262.2	80.07	4.274		
8,800.0	6,822.1	8,870.7	6,915.7	44.5	42.6	-105.87	-2,059.5	-401.8	342.2	258.7	83.53	4.097		
8,900.0	6,821.2	8,970.7	6,914.6	46.2	44.4	-105.84	-2,159.5	-401.3	342.2	255.2	87.01	3.933		
9,000.0	6,820.4	9,070.7	6,913.6	47.9	46.2	-105.82	-2,259.5	-400.7	342.1	251.6	90.51	3.780		
9,100.0	6,819.5	9,170.7	6,912.6	49.7	48.0	-105.80	-2,359.5	-400.2	342.1	248.1	94.03	3.639		
9,200.0	6,818.6	9,270.7	6,911.6	51.5	49.8	-105.77	-2,459.5	-399.6	342.1	244.5	97.56	3.506		
9,300.0	6,817.7	9,370.7	6,910.6	53.3	51.7	-105.75	-2,559.5	-399.1	342.1	241.0	101.11	3.383		
9,400.0	6,816.9	9,470.7	6,909.6	55.1	53.5	-105.73	-2,659.5	-398.6	342.0	237.4	104.67	3.268		
9,500.0	6,816.0	9,570.7	6,908.6	56.9	55.3	-105.71	-2,759.5	-398.0	342.0	233.8	108.24	3.160		
9,600.0	6,815.1	9,670.7	6,907.6	58.7	57.2	-105.68	-2,859.4	-397.5	342.0	230.1	111.82	3.058		
9,700.0	6,814.3	9,770.7	6,906.5	60.5	59.0	-105.66	-2,959.4	-396.9	341.9	226.5	115.41	2.963		
9,800.0	6,813.4	9,870.7	6,905.5	62.3	60.9	-105.64	-3,059.4	-396.4	341.9	222.9	119.01	2.873		
9,900.0	6,812.5	9,970.7	6,904.5	64.2	62.7	-105.61	-3,159.4	-395.8	341.9	219.3	122.62	2.788		
10,000.0	6,811.6	10,070.7	6,903.5	66.0	64.6	-105.59	-3,259.4	-395.3	341.9	215.6	126.24	2.708		
10,100.0	6,810.8	10,170.7	6,902.5	67.8	66.4	-105.57	-3,359.4	-394.7	341.8	212.0	129.87	2.632		
10,200.0	6,809.9	10,270.7	6,901.5	69.7	68.3	-105.54	-3,459.4	-394.2	341.8	208.3	133.50	2.560		
10,300.0	6,809.0	10,370.7	6,900.5	71.5	70.2	-105.52	-3,559.4	-393.7	341.8	204.6	137.13	2.492		
10,400.0	6,808.1	10,470.7	6,899.5	73.4	72.0	-105.50	-3,659.4	-393.1	341.7	201.0	140.78	2.427		
10,500.0	6,807.3	10,570.7	6,898.4	75.2	73.9	-105.48	-3,759.4	-392.6	341.7	197.3	144.42	2.366		
10,600.0	6,806.4	10,670.7	6,897.4	77.1	75.8	-105.45	-3,859.4	-392.0	341.7	193.6	148.08	2.307		
10,700.0	6,805.5	10,770.7	6,896.4	78.9	77.6	-105.43	-3,959.4	-391.5	341.6	189.9	151.73	2.252		
10,800.0	6,804.7	10,870.7	6,895.4	80.8	79.5	-105.41	-4,059.4	-390.9	341.6	186.2	155.40	2.198		
10,900.0	6,803.8	10,970.7	6,894.4	82.7	81.4	-105.38	-4,159.4	-390.4	341.6	182.5	159.06	2.148		
11,000.0	6,802.9	11,070.7	6,893.4	84.5	83.3	-105.36	-4,259.4	-389.8	341.6	178.8	162.73	2.099		
11,100.0	6,802.0	11,170.7	6,892.4	86.4	85.2	-105.34	-4,359.3	-389.3	341.5	175.1	166.40	2.052		
11,200.0	6,801.2	11,270.7	6,891.4	88.3	87.1	-105.32	-4,459.3	-388.7	341.5	171.4	170.08	2.008		
11,300.0	6,800.3	11,370.7	6,890.3	90.2	88.7	-105.29	-4,559.3	-388.2	341.5	168.0	173.51	1.968		
11,333.6	6,800.0	11,404.3	6,890.0	90.7	89.2	-105.28	-4,593.0	-388.0	341.5	167.0	174.51	1.957 SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Becker Ranch 5J-203
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4830.0ft (RKB - 15')
Reference Site:	Becker Ranch 5M-HZ Pad Sec.5-T3N-R64W	MD Reference:	WELL @ 4830.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5J-203	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 #2 (1-23-15)	Offset TVD Reference:	Offset Datum

Offset Design Becker Ranch 5M-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5M-243 - Wellbore #1 - Plan #2 (1-23-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-180.00	-180.00	-61.9	0.0	61.9				
100.0	100.0	100.0	100.0	0.1	0.1	-180.00	-180.00	-61.9	0.0	61.9	61.7	0.22	275.556	
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-180.00	-61.9	0.0	61.9	61.3	0.67	91.852 CC	
300.0	300.0	300.0	300.0	0.6	0.6	-104.18	-104.18	-61.9	0.0	62.1	61.0	1.12	55.710 ES	
400.0	400.0	400.0	400.0	0.8	0.8	-106.49	-106.49	-61.9	0.0	62.8	61.3	1.56	40.331	
500.0	499.9	499.9	499.9	1.0	1.0	-110.21	-110.21	-61.9	0.0	64.2	62.2	2.01	31.936	
600.0	599.7	599.7	599.7	1.2	1.2	-115.11	-115.11	-61.9	0.0	66.6	64.1	2.47	26.922	
700.0	699.4	699.4	699.4	1.5	1.5	-120.87	-120.87	-61.9	0.0	70.3	67.3	2.94	23.874	
800.0	798.9	798.9	798.9	1.8	1.7	-127.05	-127.05	-61.9	0.0	75.6	72.2	3.42	22.121	
900.0	898.3	898.3	898.3	2.0	1.9	-133.23	-133.23	-61.9	0.0	83.0	79.1	3.90	21.288	
1,000.0	997.4	997.4	997.4	2.4	2.1	-139.05	-139.05	-61.9	0.0	92.4	88.1	4.38	21.129	
1,073.6	1,070.2	1,070.2	1,070.2	2.6	2.3	-142.98	-142.98	-61.9	0.0	100.8	96.1	4.72	21.338	
1,100.0	1,096.3	1,096.3	1,096.3	2.7	2.4	-144.30	-144.30	-61.9	0.0	104.1	99.2	4.85	21.457	
1,200.0	1,195.2	1,195.2	1,195.2	3.0	2.6	-148.64	-148.64	-61.9	0.0	116.8	111.4	5.32	21.951	
1,300.0	1,294.0	1,294.0	1,294.0	3.4	2.8	-152.12	-152.12	-61.9	0.0	130.0	124.2	5.79	22.470	
1,400.0	1,392.8	1,392.8	1,392.8	3.7	3.0	-154.95	-154.95	-61.9	0.0	143.6	137.4	6.25	22.982	
1,500.0	1,491.7	1,491.7	1,491.7	4.1	3.2	-157.28	-157.28	-61.9	0.0	157.6	150.8	6.71	23.470	
1,600.0	1,590.5	1,592.7	1,592.7	4.4	3.5	-159.43	-159.43	-61.2	-0.3	171.1	163.9	7.18	23.842	
1,700.0	1,689.4	1,694.2	1,694.2	4.8	3.7	-161.61	-161.61	-58.8	-1.1	183.5	175.8	7.63	24.035	
1,800.0	1,788.2	1,795.9	1,795.8	5.1	3.9	-163.86	-163.86	-54.7	-2.6	194.7	186.7	8.09	24.078	
1,900.0	1,887.0	1,897.7	1,897.4	5.5	4.2	-166.20	-166.20	-48.9	-4.6	205.0	196.4	8.54	24.002	
2,000.0	1,985.9	1,999.5	1,998.9	5.9	4.4	-168.66	-168.66	-41.4	-7.3	214.3	205.3	8.99	23.828	
2,100.0	2,084.7	2,101.4	2,100.3	6.2	4.6	-171.25	-171.25	-32.2	-10.5	222.7	213.3	9.45	23.574	
2,200.0	2,183.6	2,203.1	2,201.4	6.6	4.9	-173.99	-173.99	-21.3	-14.4	230.4	220.5	9.91	23.254	
2,300.0	2,282.4	2,303.9	2,301.3	7.0	5.1	-176.84	-176.84	-9.0	-18.8	237.7	227.3	10.38	22.887	
2,400.0	2,381.2	2,403.0	2,399.4	7.3	5.4	-179.56	-179.56	3.6	-23.2	245.2	234.3	10.87	22.554	
2,500.0	2,480.1	2,502.0	2,497.6	7.7	5.7	177.90	177.90	16.1	-27.7	253.2	241.9	11.38	22.262	
2,600.0	2,578.9	2,601.1	2,595.8	8.0	6.0	175.51	175.51	28.6	-32.1	261.8	249.9	11.90	22.006	
2,700.0	2,677.8	2,700.1	2,693.9	8.4	6.2	173.27	173.27	41.2	-36.5	270.7	258.3	12.43	21.778	
2,800.0	2,776.6	2,799.2	2,792.1	8.8	6.5	171.18	171.18	53.7	-41.0	280.1	267.1	12.98	21.576	
2,900.0	2,875.4	2,898.2	2,890.2	9.1	6.8	169.22	169.22	66.2	-45.4	289.8	276.2	13.54	21.396	
3,000.0	2,974.3	2,997.3	2,988.4	9.5	7.1	167.40	167.40	78.8	-49.9	299.8	285.7	14.12	21.235	
3,100.0	3,073.1	3,096.3	3,086.5	9.9	7.4	165.69	165.69	91.3	-54.3	310.1	295.4	14.70	21.091	
3,200.0	3,172.0	3,195.4	3,184.7	10.2	7.7	164.09	164.09	103.8	-58.8	320.6	305.3	15.29	20.963	
3,300.0	3,270.8	3,294.4	3,282.9	10.6	8.0	162.59	162.59	116.4	-63.2	331.4	315.5	15.90	20.849	
3,400.0	3,369.6	3,393.5	3,381.0	11.0	8.3	161.19	161.19	128.9	-67.6	342.4	325.9	16.50	20.747	
3,500.0	3,468.5	3,492.6	3,479.2	11.3	8.6	159.87	159.87	141.4	-72.1	353.6	336.5	17.12	20.656	
3,600.0	3,567.3	3,589.8	3,575.7	11.7	8.9	158.82	158.82	152.8	-76.1	365.1	347.5	17.69	20.643	
3,700.0	3,666.2	3,687.1	3,672.5	12.1	9.1	158.20	158.20	161.8	-79.3	377.3	359.1	18.20	20.731	
3,800.0	3,765.0	3,784.4	3,769.5	12.4	9.3	157.98	157.98	168.5	-81.7	390.0	371.4	18.68	20.881	
3,900.0	3,863.8	3,881.6	3,866.6	12.8	9.5	158.12	158.12	172.9	-83.2	403.2	384.1	19.12	21.086	
4,000.0	3,962.7	3,978.5	3,963.5	13.2	9.7	158.59	158.59	174.9	-83.9	416.9	397.4	19.53	21.344	
4,100.0	4,061.5	4,076.5	4,061.5	13.5	9.8	159.30	159.30	175.1	-84.0	431.1	411.2	19.93	21.628	
4,200.0	4,160.3	4,175.4	4,160.3	13.9	10.0	159.99	159.99	175.1	-84.0	445.3	425.0	20.35	21.886	
4,300.0	4,259.2	4,274.2	4,259.2	14.3	10.2	160.64	160.64	175.1	-84.0	459.7	438.9	20.77	22.130	
4,400.0	4,358.0	4,373.0	4,358.0	14.6	10.4	161.24	161.24	175.1	-84.0	474.0	452.8	21.20	22.364	
4,500.0	4,456.9	4,471.9	4,456.9	15.0	10.6	161.82	161.82	175.1	-84.0	488.5	466.8	21.62	22.589	
4,600.0	4,555.7	4,570.7	4,555.7	15.3	10.8	162.36	162.36	175.1	-84.0	502.9	480.9	22.05	22.805	
4,700.0	4,654.5	4,669.6	4,654.5	15.7	11.0	162.86	162.86	175.1	-84.0	517.4	495.0	22.48	23.014	
4,800.0	4,753.4	4,768.4	4,753.4	16.1	11.2	163.35	163.35	175.1	-84.0	532.0	509.1	22.92	23.214	
4,900.0	4,852.2	4,867.2	4,852.2	16.4	11.4	163.80	163.80	175.1	-84.0	546.6	523.2	23.35	23.406	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Becker Ranch 5J-203
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4830.0ft (RKB - 15')
Reference Site:	Becker Ranch 5M-HZ Pad Sec.5-T3N-R64W	MD Reference:	WELL @ 4830.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5J-203	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 #2 (1-23-15)	Offset TVD Reference:	Offset Datum

Offset Design Becker Ranch 5M-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5M-243 - Wellbore #1 - Plan #2 (1-23-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,951.1	4,966.1	4,951.1	16.8	11.6	164.23		175.1	-84.0	561.2	537.4	23.79	23.591	
5,100.0	5,049.9	5,064.9	5,049.9	17.2	11.8	164.64		175.1	-84.0	575.8	551.6	24.22	23.770	
5,200.0	5,148.7	5,163.8	5,148.7	17.5	12.0	165.03		175.1	-84.0	590.5	565.8	24.66	23.942	
5,300.0	5,247.6	5,262.6	5,247.6	17.9	12.2	165.41		175.1	-84.0	605.2	580.1	25.10	24.107	
5,373.1	5,319.9	5,334.9	5,319.9	18.2	12.4	165.67		175.1	-84.0	616.0	590.5	25.43	24.224	
5,400.0	5,346.4	5,361.5	5,346.4	18.3	12.4	165.77		175.1	-84.0	619.8	594.3	25.55	24.261	
5,500.0	5,445.6	5,460.6	5,445.6	18.5	12.6	166.11		175.1	-84.0	632.6	606.7	25.97	24.363	
5,600.0	5,545.0	5,560.0	5,545.0	18.7	12.9	166.37		175.1	-84.0	642.9	616.6	26.37	24.382	
5,700.0	5,644.7	5,659.7	5,644.7	18.9	13.1	166.57		175.1	-84.0	650.7	623.9	26.75	24.321	
5,800.0	5,744.5	5,759.5	5,744.5	19.1	13.3	166.69		175.1	-84.0	655.9	628.8	27.12	24.184	
5,900.0	5,844.5	5,859.5	5,844.5	19.3	13.5	166.76		175.1	-84.0	658.6	631.1	27.47	23.974	
5,955.5	5,900.0	5,915.0	5,900.0	19.3	13.6	90.17		175.1	-84.0	659.0	631.4	27.65	23.837	
6,000.0	5,944.5	5,959.5	5,944.5	19.4	13.7	90.17		175.1	-84.0	659.0	631.2	27.82	23.688	
6,100.0	6,044.5	6,059.5	6,044.5	19.5	13.9	90.17		175.1	-84.0	659.0	630.8	28.22	23.354	
6,115.6	6,060.1	6,075.1	6,060.1	19.6	13.9	90.17		175.1	-84.0	659.0	630.7	28.28	23.302	
6,126.5	6,071.0	6,086.0	6,071.0	19.6	14.0	90.17		175.0	-84.0	659.0	630.7	28.32	23.268	
6,150.0	6,094.5	6,109.3	6,094.3	19.6	14.0	-89.51		174.5	-84.0	659.0	630.6	28.42	23.191	
6,200.0	6,144.4	6,158.9	6,143.7	19.7	14.1	-89.48		171.1	-84.0	659.0	630.5	28.56	23.078	
6,250.0	6,193.9	6,208.5	6,192.9	19.7	14.1	-89.46		164.4	-83.9	659.0	630.3	28.67	22.987	
6,300.0	6,243.0	6,258.0	6,241.4	19.7	14.2	-89.44		154.6	-83.9	659.0	630.3	28.76	22.916	
6,350.0	6,291.3	6,307.6	6,289.3	19.8	14.2	-89.42		141.7	-83.8	659.0	630.2	28.83	22.860	
6,400.0	6,338.7	6,357.1	6,336.1	19.8	14.2	-89.40		125.7	-83.7	659.0	630.2	28.89	22.814	
6,450.0	6,384.9	6,406.6	6,381.8	19.8	14.2	-89.39		106.7	-83.6	659.1	630.1	28.94	22.774	
6,500.0	6,429.8	6,456.1	6,426.2	19.9	14.2	-89.37		84.8	-83.5	659.1	630.1	28.99	22.731	
6,550.0	6,473.1	6,505.7	6,469.1	19.9	14.2	-89.36		60.0	-83.3	659.1	630.0	29.06	22.680	
6,600.0	6,514.7	6,555.2	6,510.3	19.9	14.3	-89.36		32.6	-83.2	659.1	630.0	29.15	22.612	
6,650.0	6,554.5	6,604.7	6,549.6	20.0	14.3	-89.35		2.5	-83.0	659.1	629.8	29.27	22.521	
6,700.0	6,592.1	6,654.2	6,586.9	20.0	14.3	-89.35		-30.1	-82.8	659.1	629.7	29.43	22.397	
6,750.0	6,627.5	6,703.7	6,622.0	20.1	14.4	-89.35		-65.0	-82.6	659.2	629.5	29.64	22.236	
6,800.0	6,660.6	6,753.2	6,654.7	20.1	14.5	-89.36		-102.1	-82.4	659.2	629.3	29.92	22.031	
6,850.0	6,691.1	6,802.7	6,685.0	20.2	14.6	-89.37		-141.2	-82.1	659.2	628.9	30.27	21.779	
6,900.0	6,718.9	6,852.2	6,712.7	20.3	14.8	-89.38		-182.3	-81.9	659.2	628.5	30.69	21.478	
6,950.0	6,744.0	6,901.7	6,737.7	20.5	15.1	-89.39		-225.0	-81.6	659.2	628.0	31.20	21.129	
7,000.0	6,766.2	6,951.3	6,759.8	20.6	15.4	-89.40		-269.3	-81.4	659.3	627.5	31.80	20.734	
7,050.0	6,785.4	7,000.8	6,779.1	20.8	15.7	-89.42		-315.0	-81.1	659.3	626.8	32.48	20.298	
7,100.0	6,801.6	7,050.4	6,795.4	21.1	16.1	-89.44		-361.8	-80.8	659.3	626.1	33.25	19.828	
7,150.0	6,814.6	7,100.0	6,808.6	21.4	16.5	-89.46		-409.6	-80.5	659.3	625.2	34.11	19.331	
7,200.0	6,824.5	7,149.6	6,818.6	21.7	16.9	-89.49		-458.1	-80.3	659.4	624.3	35.04	18.815	
7,250.0	6,831.1	7,199.2	6,825.5	22.1	17.4	-89.51		-507.3	-80.0	659.4	623.3	36.06	18.288	
7,300.0	6,834.5	7,248.8	6,829.2	22.5	18.0	-89.54		-556.8	-79.7	659.4	622.3	37.13	17.758	
7,333.2	6,834.9	7,281.8	6,829.9	22.8	18.3	-89.56		-589.7	-79.5	659.4	621.5	37.88	17.407	
7,400.0	6,834.3	7,348.6	6,829.3	23.5	19.1	-89.57		-656.5	-79.1	659.5	620.0	39.49	16.700	
7,500.0	6,833.5	7,448.6	6,828.5	24.5	20.4	-89.57		-756.5	-78.5	659.5	617.5	42.05	15.683	
7,600.0	6,832.6	7,548.6	6,827.6	25.7	21.8	-89.57		-856.5	-77.9	659.6	614.8	44.80	14.723	
7,700.0	6,831.7	7,648.6	6,826.7	27.0	23.2	-89.57		-956.5	-77.3	659.6	611.9	47.70	13.829	
7,800.0	6,830.8	7,748.6	6,825.8	28.4	24.7	-89.57		-1,056.5	-76.7	659.7	609.0	50.72	13.006	
7,900.0	6,830.0	7,848.6	6,825.0	29.8	26.3	-89.57		-1,156.5	-76.1	659.7	605.9	53.85	12.251	
8,000.0	6,829.1	7,948.6	6,824.1	31.3	27.9	-89.57		-1,256.4	-75.5	659.8	602.7	57.06	11.562	
8,100.0	6,828.2	8,048.6	6,823.2	32.9	29.6	-89.57		-1,356.4	-74.9	659.8	599.5	60.35	10.933	
8,200.0	6,827.3	8,148.6	6,822.3	34.4	31.3	-89.57		-1,456.4	-74.4	659.9	596.2	63.70	10.359	
8,300.0	6,826.5	8,248.6	6,821.5	36.0	33.0	-89.57		-1,556.4	-73.8	659.9	592.8	67.11	9.834	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Becker Ranch 5J-203
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4830.0ft (RKB - 15')
Reference Site:	Becker Ranch 5M-HZ Pad Sec.5-T3N-R64W	MD Reference:	WELL @ 4830.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5J-203	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 #2 (1-23-15)	Offset TVD Reference:	Offset Datum

Offset Design Survey Program: 0-MWD										Becker Ranch 5M-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5M-243 - Wellbore #1 - Plan #2 (1-23-15)		Offset Site Error: 0.0 ft	
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)				Between Centres (ft)	Between Ellipses (ft)
8,400.0	6,825.6	8,348.6	6,820.6	37.7	34.7	-89.57	-1,656.4	-73.2	660.0	589.4	70.56	9.354	
8,500.0	6,824.7	8,448.6	6,819.7	39.3	36.4	-89.57	-1,756.4	-72.6	660.1	586.0	74.04	8.914	
8,600.0	6,823.9	8,548.6	6,818.9	41.0	38.2	-89.57	-1,856.4	-72.0	660.1	582.5	77.57	8.510	
8,700.0	6,823.0	8,648.6	6,818.0	42.7	40.0	-89.57	-1,956.4	-71.4	660.2	579.0	81.12	8.139	
8,800.0	6,822.1	8,748.6	6,817.1	44.5	41.8	-89.57	-2,056.4	-70.8	660.2	575.5	84.69	7.796	
8,900.0	6,821.2	8,848.6	6,816.2	46.2	43.6	-89.57	-2,156.4	-70.2	660.3	572.0	88.29	7.479	
9,000.0	6,820.4	8,948.6	6,815.4	47.9	45.4	-89.57	-2,256.4	-69.6	660.3	568.4	91.91	7.185	
9,100.0	6,819.5	9,048.6	6,814.5	49.7	47.2	-89.57	-2,356.4	-69.0	660.4	564.8	95.54	6.912	
9,200.0	6,818.6	9,148.6	6,813.6	51.5	49.0	-89.57	-2,456.4	-68.4	660.4	561.2	99.19	6.658	
9,300.0	6,817.7	9,248.6	6,812.7	53.3	50.9	-89.57	-2,556.4	-67.9	660.5	557.6	102.86	6.421	
9,400.0	6,816.9	9,348.6	6,811.9	55.1	52.7	-89.57	-2,656.4	-67.3	660.5	554.0	106.53	6.200	
9,500.0	6,816.0	9,448.6	6,811.0	56.9	54.6	-89.57	-2,756.4	-66.7	660.6	550.4	110.22	5.993	
9,600.0	6,815.1	9,548.6	6,810.1	58.7	56.4	-89.57	-2,856.4	-66.1	660.7	546.7	113.92	5.799	
9,700.0	6,814.3	9,648.6	6,809.3	60.5	58.3	-89.57	-2,956.4	-65.5	660.7	543.1	117.63	5.617	
9,800.0	6,813.4	9,748.6	6,808.4	62.3	60.1	-89.57	-3,056.3	-64.9	660.8	539.4	121.34	5.445	
9,900.0	6,812.5	9,848.6	6,807.5	64.2	62.0	-89.57	-3,156.3	-64.3	660.8	535.8	125.07	5.284	
10,000.0	6,811.6	9,948.6	6,806.6	66.0	63.9	-89.57	-3,256.3	-63.7	660.9	532.1	128.80	5.131	
10,100.0	6,810.8	10,048.6	6,805.8	67.8	65.7	-89.57	-3,356.3	-63.1	660.9	528.4	132.54	4.987	
10,200.0	6,809.9	10,148.6	6,804.9	69.7	67.6	-89.57	-3,456.3	-62.5	661.0	524.7	136.28	4.850	
10,300.0	6,809.0	10,248.6	6,804.0	71.5	69.5	-89.57	-3,556.3	-61.9	661.0	521.0	140.03	4.721	
10,400.0	6,808.1	10,348.6	6,803.2	73.4	71.4	-89.57	-3,656.3	-61.3	661.1	517.3	143.78	4.598	
10,500.0	6,807.3	10,448.6	6,802.3	75.2	73.2	-89.57	-3,756.3	-60.8	661.1	513.6	147.54	4.481	
10,600.0	6,806.4	10,548.6	6,801.4	77.1	75.1	-89.57	-3,856.3	-60.2	661.2	509.9	151.30	4.370	
10,700.0	6,805.5	10,648.6	6,800.5	78.9	77.0	-89.57	-3,956.3	-59.6	661.3	506.2	155.06	4.264	
10,800.0	6,804.7	10,748.6	6,799.7	80.8	78.9	-89.57	-4,056.3	-59.0	661.3	502.5	158.83	4.164	
10,900.0	6,803.8	10,848.6	6,798.8	82.7	80.8	-89.57	-4,156.3	-58.4	661.4	498.8	162.61	4.067	
11,000.0	6,802.9	10,948.6	6,797.9	84.5	82.7	-89.57	-4,256.3	-57.8	661.4	495.0	166.38	3.975	
11,100.0	6,802.0	11,048.6	6,797.0	86.4	84.6	-89.57	-4,356.3	-57.2	661.5	491.3	170.16	3.887	
11,200.0	6,801.2	11,148.6	6,796.2	88.3	86.5	-89.57	-4,456.3	-56.6	661.5	487.6	173.94	3.803	
11,300.0	6,800.3	11,248.6	6,795.3	90.2	88.3	-89.57	-4,556.3	-56.0	661.6	483.9	177.73	3.722	
11,333.6	6,800.0	11,282.2	6,795.0	90.7	89.0	-89.57	-4,589.9	-55.8	661.6	482.7	178.88	3.699 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Becker Ranch 5J-203
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4830.0ft (RKB - 15')
Reference Site:	Becker Ranch 5M-HZ Pad Sec.5-T3N-R64W	MD Reference:	WELL @ 4830.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5J-203	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 #2 (1-23-15)	Offset TVD Reference:	Offset Datum

Offset Design Becker Ranch 5M-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5M-303 - Wellbore #1 - Plan #2 (1-23-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	1.0	1.0	0.0	0.0	-180.00	-180.00	-91.1	0.0	91.1	91.1	0.00	N/A	
100.0	100.0	101.0	101.0	0.1	0.1	-180.00	-180.00	-91.1	0.0	91.1	90.8	0.23	401.155	
200.0	200.0	201.0	201.0	0.3	0.3	-180.00	-180.00	-91.1	0.0	91.1	90.4	0.68	134.607 CC	
300.0	300.0	301.0	301.0	0.6	0.6	-103.93	-103.93	-91.1	0.0	91.3	90.2	1.12	81.661 ES	
400.0	400.0	401.0	401.0	0.8	0.8	-105.51	-105.51	-91.1	0.0	91.9	90.4	1.56	58.926	
500.0	499.9	500.9	500.9	1.0	1.0	-108.08	-108.08	-91.1	0.0	93.2	91.2	2.01	46.302	
600.0	599.7	600.7	600.7	1.2	1.2	-111.54	-111.54	-91.1	0.0	95.3	92.8	2.48	38.488	
700.0	699.4	700.4	700.4	1.5	1.5	-115.76	-115.76	-91.1	0.0	98.4	95.5	2.95	33.388	
800.0	798.9	799.9	799.9	1.8	1.7	-120.51	-120.51	-91.1	0.0	103.0	99.5	3.43	30.023	
900.0	898.3	899.3	899.3	2.0	1.9	-125.56	-125.56	-91.1	0.0	109.2	105.3	3.92	27.866	
1,000.0	997.4	998.4	998.4	2.4	2.1	-130.67	-130.67	-91.1	0.0	117.3	112.9	4.41	26.601	
1,073.6	1,070.2	1,071.2	1,071.2	2.6	2.3	-134.34	-134.34	-91.1	0.0	124.6	119.8	4.77	26.113	
1,100.0	1,096.3	1,097.3	1,097.3	2.7	2.4	-135.62	-135.62	-91.1	0.0	127.4	122.5	4.90	26.006	
1,200.0	1,195.2	1,196.2	1,196.2	3.0	2.6	-139.99	-139.99	-91.1	0.0	138.7	133.4	5.38	25.765	
1,300.0	1,294.0	1,295.0	1,295.0	3.4	2.8	-143.69	-143.69	-91.1	0.0	150.7	144.9	5.86	25.708	
1,400.0	1,392.8	1,393.8	1,393.8	3.7	3.0	-146.83	-146.83	-91.1	0.0	163.3	156.9	6.34	25.765	
1,500.0	1,491.7	1,492.7	1,492.7	4.1	3.2	-149.53	-149.53	-91.1	0.0	176.2	169.4	6.81	25.888	
1,600.0	1,590.5	1,591.5	1,591.5	4.4	3.5	-151.85	-151.85	-91.1	0.0	189.5	182.2	7.27	26.051	
1,700.0	1,689.4	1,690.4	1,690.4	4.8	3.7	-153.87	-153.87	-91.1	0.0	203.1	195.3	7.74	26.234	
1,800.0	1,788.2	1,789.2	1,789.2	5.1	3.9	-155.63	-155.63	-91.1	0.0	216.8	208.6	8.20	26.427	
1,900.0	1,887.0	1,888.0	1,888.0	5.5	4.1	-157.19	-157.19	-91.1	0.0	230.8	222.1	8.67	26.622	
2,000.0	1,985.9	1,986.9	1,986.9	5.9	4.4	-158.56	-158.56	-91.1	0.0	244.9	235.7	9.13	26.814	
2,100.0	2,084.7	2,085.1	2,085.1	6.2	4.6	-159.92	-159.92	-90.6	0.4	259.2	249.6	9.59	27.033	
2,200.0	2,183.6	2,182.9	2,182.9	6.6	4.8	-161.48	-161.48	-88.9	2.0	273.9	263.9	10.03	27.305	
2,300.0	2,282.4	2,280.4	2,280.3	7.0	5.0	-163.19	-163.19	-86.0	4.6	289.3	278.8	10.47	27.624	
2,400.0	2,381.2	2,377.5	2,377.2	7.3	5.2	-165.04	-165.04	-81.9	8.4	305.2	294.3	10.91	27.986	
2,500.0	2,480.1	2,474.1	2,473.5	7.7	5.4	-166.97	-166.97	-76.7	13.3	321.9	310.6	11.34	28.391	
2,600.0	2,578.9	2,570.2	2,569.2	8.0	5.7	-168.98	-168.98	-70.2	19.2	339.5	327.7	11.77	28.836	
2,700.0	2,677.8	2,665.7	2,664.2	8.4	5.9	-171.02	-171.02	-62.7	26.2	358.0	345.8	12.21	29.319	
2,800.0	2,776.6	2,760.6	2,758.4	8.8	6.1	-173.07	-173.07	-54.0	34.2	377.6	364.9	12.65	29.835	
2,900.0	2,875.4	2,854.8	2,851.7	9.1	6.4	-175.13	-175.13	-44.3	43.1	398.2	385.1	13.11	30.382	
3,000.0	2,974.3	2,951.0	2,946.7	9.5	6.6	-177.15	-177.15	-33.6	53.0	419.8	406.3	13.58	30.925	
3,100.0	3,073.1	3,047.6	3,042.2	9.9	6.9	-178.98	-178.98	-22.8	62.9	441.9	427.8	14.05	31.442	
3,200.0	3,172.0	3,144.2	3,137.7	10.2	7.2	-179.36	-179.36	-12.1	72.8	464.4	449.8	14.54	31.933	
3,300.0	3,270.8	3,240.7	3,233.1	10.6	7.4	-177.85	-177.85	-1.4	82.6	487.2	472.2	15.04	32.399	
3,400.0	3,369.6	3,337.3	3,328.6	11.0	7.7	-176.47	-176.47	9.4	92.5	510.3	494.8	15.54	32.840	
3,500.0	3,468.5	3,433.9	3,424.1	11.3	8.0	-175.21	-175.21	20.1	102.4	533.7	517.6	16.05	33.259	
3,600.0	3,567.3	3,530.5	3,519.6	11.7	8.3	-174.06	-174.06	30.8	112.3	557.3	540.7	16.56	33.656	
3,700.0	3,666.2	3,627.1	3,615.0	12.1	8.6	-173.00	-173.00	41.6	122.2	581.1	564.0	17.07	34.034	
3,800.0	3,765.0	3,723.7	3,710.5	12.4	8.9	-172.02	-172.02	52.3	132.1	605.0	587.4	17.59	34.393	
3,900.0	3,863.8	3,820.2	3,806.0	12.8	9.2	-171.12	-171.12	63.1	142.0	629.2	611.0	18.11	34.734	
4,000.0	3,962.7	3,916.8	3,901.4	13.2	9.5	-170.28	-170.28	73.8	151.9	653.4	634.8	18.64	35.060	
4,100.0	4,061.5	4,013.4	3,996.9	13.5	9.8	-169.50	-169.50	84.5	161.8	677.8	658.6	19.16	35.370	
4,200.0	4,160.3	4,110.0	4,092.4	13.9	10.1	-168.78	-168.78	95.3	171.7	702.3	682.6	19.69	35.665	
4,300.0	4,259.2	4,206.6	4,187.9	14.3	10.5	-168.11	-168.11	106.0	181.6	726.9	706.7	20.22	35.948	
4,400.0	4,358.0	4,303.1	4,283.3	14.6	10.8	-167.47	-167.47	116.7	191.5	751.6	730.8	20.75	36.218	
4,500.0	4,456.9	4,399.7	4,378.8	15.0	11.1	-166.88	-166.88	127.5	201.4	776.3	755.1	21.28	36.476	
4,600.0	4,555.7	4,496.3	4,474.3	15.3	11.4	-166.33	-166.33	138.2	211.3	801.2	779.4	21.82	36.723	
4,700.0	4,654.5	4,601.2	4,578.0	15.7	11.7	-165.78	-165.78	149.6	221.7	825.8	803.5	22.36	36.937	
4,800.0	4,753.4	4,715.7	4,691.7	16.1	12.0	-165.38	-165.38	159.8	231.2	848.8	825.9	22.87	37.117	
4,900.0	4,852.2	4,831.5	4,807.0	16.4	12.3	-165.16	-165.16	167.7	238.4	869.8	846.4	23.37	37.224	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Becker Ranch 5J-203
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4830.0ft (RKB - 15')
Reference Site:	Becker Ranch 5M-HZ Pad Sec.5-T3N-R64W	MD Reference:	WELL @ 4830.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5J-203	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 #2 (1-23-15)	Offset TVD Reference:	Offset Datum

Offset Design Becker Ranch 5M-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5M-303 - Wellbore #1 - Plan #2 (1-23-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,951.1	4,948.3	4,923.6	16.8	12.5	165.12	165.12	172.9	243.2	888.7	864.8	23.85	37.265	
5,100.0	5,049.9	5,066.1	5,041.3	17.2	12.7	165.24	165.24	175.6	245.7	905.5	881.2	24.31	37.243	
5,200.0	5,148.7	5,174.6	5,149.7	17.5	12.9	165.49	165.49	175.9	246.0	920.4	895.7	24.76	37.182	
5,300.0	5,247.6	5,273.4	5,248.6	17.9	13.1	165.72	165.72	175.9	246.0	935.2	910.0	25.20	37.110	
5,373.1	5,319.9	5,345.7	5,320.9	18.2	13.2	165.89	165.89	175.9	246.0	945.9	920.4	25.53	37.054	
5,400.0	5,346.4	5,372.3	5,347.4	18.3	13.3	165.96	165.96	175.9	246.0	949.8	924.2	25.66	37.020	
5,500.0	5,445.6	5,471.4	5,446.6	18.5	13.5	166.20	166.20	175.9	246.0	962.6	936.5	26.10	36.885	
5,600.0	5,545.0	5,570.8	5,546.0	18.7	13.7	166.38	166.38	175.9	246.0	972.9	946.4	26.52	36.686	
5,700.0	5,644.7	5,670.5	5,645.7	18.9	13.9	166.52	166.52	175.9	246.0	980.7	953.8	26.92	36.427	
5,800.0	5,744.5	5,770.3	5,745.5	19.1	14.1	166.61	166.61	175.9	246.0	985.9	958.6	27.30	36.110	
5,900.0	5,844.5	5,870.3	5,845.5	19.3	14.3	166.66	166.66	175.9	246.0	988.6	960.9	27.66	35.737	
5,955.5	5,900.0	5,925.8	5,901.0	19.3	14.4	90.06	90.06	175.9	246.0	989.0	961.1	27.85	35.509	
6,000.0	5,944.5	5,970.3	5,945.5	19.4	14.5	90.06	90.06	175.9	246.0	989.0	961.0	28.02	35.292	
6,100.0	6,044.5	6,070.3	6,045.5	19.5	14.7	90.06	90.06	175.9	246.0	989.0	960.6	28.42	34.805	
6,126.5	6,071.0	6,096.8	6,072.0	19.6	14.7	90.06	90.06	175.9	246.0	989.0	960.5	28.52	34.678	
6,150.0	6,094.5	6,120.3	6,095.5	19.6	14.8	-89.65	-89.65	175.9	246.0	989.0	960.4	28.62	34.562	
6,200.0	6,144.4	6,170.2	6,145.4	19.7	14.9	-89.84	-89.84	175.9	246.0	989.0	960.2	28.80	34.343	
6,225.3	6,169.5	6,195.3	6,170.5	19.7	14.9	-90.00	-90.00	175.9	246.0	989.0	960.1	28.88	34.239	
6,250.0	6,193.9	6,219.8	6,194.9	19.7	15.0	-90.21	-90.21	175.9	246.0	989.0	960.0	28.97	34.137	
6,300.0	6,243.0	6,269.0	6,244.2	19.7	15.0	-90.75	-90.75	175.9	246.0	989.1	959.9	29.13	33.948	
6,350.0	6,291.3	6,319.0	6,294.1	19.8	15.1	-91.35	-91.35	173.6	246.0	989.3	960.0	29.27	33.800	
6,400.0	6,338.7	6,369.8	6,344.6	19.8	15.2	-91.95	-91.95	168.0	246.0	989.6	960.2	29.37	33.691	
6,450.0	6,384.9	6,421.3	6,395.3	19.8	15.2	-92.55	-92.55	158.8	246.1	990.0	960.6	29.46	33.610	
6,500.0	6,429.8	6,473.6	6,446.0	19.9	15.2	-93.14	-93.14	146.1	246.2	990.5	961.0	29.52	33.553	
6,550.0	6,473.1	6,526.7	6,496.5	19.9	15.3	-93.72	-93.72	129.6	246.3	991.2	961.6	29.58	33.510	
6,600.0	6,514.7	6,580.7	6,546.5	19.9	15.3	-94.29	-94.29	109.3	246.4	991.9	962.3	29.63	33.472	
6,650.0	6,554.5	6,635.5	6,595.7	20.0	15.3	-94.84	-94.84	85.2	246.5	992.7	963.0	29.70	33.428	
6,700.0	6,592.1	6,691.1	6,643.7	20.0	15.3	-95.38	-95.38	57.1	246.7	993.6	963.8	29.78	33.363	
6,750.0	6,627.5	6,747.6	6,690.2	20.1	15.3	-95.90	-95.90	25.1	246.9	994.5	964.6	29.90	33.265	
6,800.0	6,660.6	6,805.0	6,735.0	20.1	15.3	-96.39	-96.39	-10.8	247.1	995.4	965.4	30.06	33.114	
6,850.0	6,691.1	6,863.2	6,777.4	20.2	15.3	-96.85	-96.85	-50.5	247.3	996.4	966.1	30.29	32.895	
6,900.0	6,718.9	6,922.2	6,817.3	20.3	15.3	-97.29	-97.29	-94.0	247.6	997.3	966.7	30.60	32.596	
6,950.0	6,744.0	6,982.0	6,854.1	20.5	15.3	-97.69	-97.69	-141.1	247.8	998.3	967.3	30.99	32.212	
7,000.0	6,766.2	7,042.5	6,887.5	20.6	15.4	-98.05	-98.05	-191.5	248.1	999.1	967.6	31.49	31.727	
7,050.0	6,785.4	7,103.7	6,917.2	20.8	15.7	-98.38	-98.38	-245.0	248.4	999.9	967.8	32.11	31.145	
8,400.0	6,825.6	8,530.4	6,968.9	37.7	34.6	-98.18	-98.18	-1,658.6	256.6	999.9	929.9	70.03	14.280	
8,500.0	6,824.7	8,630.4	6,966.1	39.3	36.4	-98.07	-98.07	-1,758.6	257.2	999.7	926.2	73.48	13.605	
8,600.0	6,823.9	8,730.4	6,963.3	41.0	38.1	-97.96	-97.96	-1,858.5	257.8	999.5	922.5	76.97	12.985	
8,700.0	6,823.0	8,830.4	6,960.5	42.7	39.9	-97.85	-97.85	-1,958.4	258.3	999.2	918.8	80.50	12.414	
8,800.0	6,822.1	8,930.3	6,957.7	44.5	41.7	-97.75	-97.75	-2,058.4	258.9	999.0	915.0	84.05	11.887	
8,900.0	6,821.2	9,030.3	6,954.9	46.2	43.4	-97.64	-97.64	-2,158.3	259.5	998.8	911.2	87.62	11.399	
9,000.0	6,820.4	9,130.3	6,952.1	47.9	45.2	-97.53	-97.53	-2,258.3	260.1	998.6	907.4	91.22	10.947	
9,100.0	6,819.5	9,230.3	6,949.3	49.7	47.1	-97.42	-97.42	-2,358.2	260.7	998.4	903.6	94.83	10.528	
9,200.0	6,818.6	9,330.3	6,946.6	51.5	48.9	-97.31	-97.31	-2,458.1	261.2	998.2	899.7	98.47	10.137	
9,300.0	6,817.7	9,430.2	6,943.8	53.3	50.7	-97.20	-97.20	-2,558.1	261.8	998.0	895.9	102.12	9.773	
9,400.0	6,816.9	9,530.2	6,941.0	55.1	52.5	-97.09	-97.09	-2,658.0	262.4	997.8	892.0	105.78	9.433	
9,500.0	6,816.0	9,630.2	6,938.2	56.9	54.4	-96.98	-96.98	-2,758.0	263.0	997.6	888.1	109.45	9.114	
9,600.0	6,815.1	9,730.2	6,935.4	58.7	56.2	-96.87	-96.87	-2,857.9	263.5	997.4	884.3	113.14	8.816	
9,700.0	6,814.3	9,830.2	6,932.6	60.5	58.1	-96.76	-96.76	-2,957.9	264.1	997.2	880.4	116.84	8.535	
9,800.0	6,813.4	9,930.2	6,929.8	62.3	59.9	-96.65	-96.65	-3,057.8	264.7	997.0	876.5	120.55	8.271	
9,900.0	6,812.5	10,030.1	6,927.0	64.2	61.8	-96.54	-96.54	-3,157.7	265.3	996.9	872.6	124.26	8.022	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Becker Ranch 5J-203
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4830.0ft (RKB - 15')
Reference Site:	Becker Ranch 5M-HZ Pad Sec.5-T3N-R64W	MD Reference:	WELL @ 4830.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5J-203	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 #2 (1-23-15)	Offset TVD Reference:	Offset Datum

Offset Design Becker Ranch 5M-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5M-303 - Wellbore #1 - Plan #2 (1-23-15)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,000.0	6,811.6	10,130.1	6,924.2	66.0	63.6	-96.43	-3,257.7	265.9	996.7	868.7	127.99	7.787	
10,100.0	6,810.8	10,230.1	6,921.4	67.8	65.5	-96.32	-3,357.6	266.4	996.5	864.8	131.72	7.565	
10,200.0	6,809.9	10,330.1	6,918.6	69.7	67.4	-96.21	-3,457.6	267.0	996.3	860.9	135.46	7.355	
10,300.0	6,809.0	10,430.1	6,915.8	71.5	69.2	-96.10	-3,557.5	267.6	996.2	857.0	139.21	7.156	
10,400.0	6,808.1	10,530.0	6,913.1	73.4	71.1	-95.99	-3,657.4	268.2	996.0	853.1	142.96	6.967	
10,500.0	6,807.3	10,630.0	6,910.3	75.2	73.0	-95.88	-3,757.4	268.7	995.9	849.1	146.71	6.788	
10,600.0	6,806.4	10,730.0	6,907.5	77.1	74.9	-95.77	-3,857.3	269.3	995.7	845.2	150.48	6.617	
10,700.0	6,805.5	10,830.0	6,904.7	78.9	76.7	-95.66	-3,957.3	269.9	995.6	841.3	154.24	6.454	
10,800.0	6,804.7	10,930.0	6,901.9	80.8	78.6	-95.55	-4,057.2	270.5	995.4	837.4	158.02	6.299	
10,900.0	6,803.8	11,030.0	6,899.1	82.7	80.5	-95.44	-4,157.1	271.1	995.3	833.5	161.79	6.152	
11,000.0	6,802.9	11,129.9	6,896.3	84.5	82.4	-95.33	-4,257.1	271.6	995.1	829.6	165.57	6.010	
11,100.0	6,802.0	11,229.9	6,893.5	86.4	84.3	-95.22	-4,357.0	272.2	995.0	825.6	169.36	5.875	
11,200.0	6,801.2	11,329.9	6,890.7	88.3	86.2	-95.11	-4,457.0	272.8	994.9	821.7	173.14	5.746	
11,300.0	6,800.3	11,429.9	6,887.9	90.2	87.9	-95.00	-4,556.9	273.4	994.7	817.9	176.83	5.626	
11,333.6	6,800.0	11,463.2	6,887.0	90.7	88.4	-94.96	-4,590.2	273.6	994.7	816.8	177.85	5.593 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Becker Ranch 5J-203
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4830.0ft (RKB - 15')
Reference Site:	Becker Ranch 5M-HZ Pad Sec.5-T3N-R64W	MD Reference:	WELL @ 4830.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5J-203	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 #2 (1-23-15)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.5-T3N-R64W - Becker 5 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
6,750.0	6,627.5	6,638.6	6,637.3	20.1	14.9	14.35	-1,016.2	-900.8	965.9	940.3	25.58	37.759		
6,800.0	6,660.6	6,673.9	6,672.6	20.1	15.0	16.15	-1,015.6	-901.3	928.4	903.9	24.51	37.887		
6,850.0	6,691.1	6,705.7	6,704.4	20.2	15.1	18.41	-1,014.9	-901.7	888.9	865.4	23.53	37.773		
6,900.0	6,718.9	6,732.7	6,731.3	20.3	15.1	21.20	-1,014.3	-902.0	847.7	824.9	22.77	37.226		
6,950.0	6,744.0	6,756.8	6,755.4	20.5	15.2	24.77	-1,013.8	-902.3	804.8	782.4	22.39	35.944		
7,000.0	6,766.2	6,778.0	6,776.6	20.6	15.3	29.39	-1,013.3	-902.5	760.6	738.0	22.61	33.635		
7,050.0	6,785.4	6,796.2	6,794.8	20.8	15.3	35.39	-1,012.9	-902.8	715.3	691.6	23.67	30.218		
7,100.0	6,801.6	6,811.3	6,809.9	21.1	15.3	43.13	-1,012.6	-902.9	669.1	643.4	25.69	26.044		
7,150.0	6,814.6	6,823.3	6,821.9	21.4	15.4	52.80	-1,012.3	-903.1	622.2	593.7	28.50	21.836		
7,200.0	6,824.5	6,832.1	6,830.7	21.7	15.4	64.15	-1,012.1	-903.2	575.0	543.5	31.46	18.278		
7,250.0	6,831.1	6,837.6	6,836.2	22.1	15.4	76.17	-1,012.0	-903.2	527.7	494.0	33.70	15.659		
7,300.0	6,834.5	6,839.9	6,838.5	22.5	15.4	87.37	-1,012.0	-903.3	480.5	445.8	34.70	13.849		
7,333.2	6,834.9	6,839.6	6,838.2	22.8	15.4	93.74	-1,012.0	-903.3	449.6	414.8	34.76	12.933		
7,400.0	6,834.3	6,837.5	6,836.1	23.5	15.4	93.04	-1,012.0	-903.2	388.3	352.7	35.61	10.905		
7,500.0	6,833.5	6,834.5	6,833.0	24.5	15.4	91.99	-1,012.1	-903.2	301.1	264.1	36.96	8.146		
7,600.0	6,832.6	6,831.4	6,830.0	25.7	15.4	90.93	-1,012.2	-903.2	224.7	186.3	38.39	5.853		
7,700.0	6,831.7	6,828.3	6,826.9	27.0	15.4	89.88	-1,012.2	-903.1	174.1	134.2	39.89	4.365		
7,751.0	6,831.3	6,826.8	6,825.3	27.7	15.4	89.34	-1,012.3	-903.1	166.5	125.8	40.68	4.093	CC, ES, SF	
7,800.0	6,830.8	6,825.2	6,823.8	28.4	15.4	88.82	-1,012.3	-903.1	173.6	132.1	41.44	4.189		
7,900.0	6,830.0	6,822.2	6,820.8	29.8	15.4	87.77	-1,012.4	-903.1	223.4	180.4	43.02	5.193		
8,000.0	6,829.1	6,819.1	6,817.7	31.3	15.4	86.71	-1,012.4	-903.0	299.5	254.8	44.63	6.710		
8,100.0	6,828.2	6,816.0	6,814.6	32.9	15.4	85.66	-1,012.5	-903.0	386.6	340.3	46.26	8.356		
8,200.0	6,827.3	6,813.0	6,811.6	34.4	15.3	84.61	-1,012.6	-902.9	478.7	430.8	47.91	9.992		
8,300.0	6,826.5	6,809.9	6,808.5	36.0	15.3	83.57	-1,012.6	-902.9	573.5	523.9	49.56	11.572		
8,400.0	6,825.6	6,806.8	6,805.4	37.7	15.3	82.52	-1,012.7	-902.9	669.7	618.5	51.21	13.078		
8,500.0	6,824.7	6,803.8	6,802.4	39.3	15.3	81.49	-1,012.8	-902.8	767.0	714.1	52.86	14.509		
8,600.0	6,823.9	6,800.7	6,799.3	41.0	15.3	80.45	-1,012.8	-902.8	864.8	810.3	54.50	15.867		
8,700.0	6,823.0	6,797.6	6,796.2	42.7	15.3	79.43	-1,012.9	-902.8	963.1	906.9	56.14	17.155		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Becker Ranch 5J-203
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4830.0ft (RKB - 15')
Reference Site:	Becker Ranch 5M-HZ Pad Sec.5-T3N-R64W	MD Reference:	WELL @ 4830.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5J-203	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 #2 (1-23-15)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.5-T3N-R64W - Becker 5-2 (SI) - Wellbore #1 - Wellbore #1											Offset Site Error:		0.0 ft
Survey Program: 100-NS-GYRO-MS											Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)		
10,000.0	6,811.6	6,743.4	6,742.5	66.0	13.5	-94.64	-4,156.0	-514.3	920.1	841.6	78.48	11.723	
10,100.0	6,810.8	6,741.1	6,740.2	67.8	13.5	-94.01	-4,156.0	-514.4	822.9	742.5	80.37	10.239	
10,200.0	6,809.9	6,738.8	6,738.0	69.7	13.5	-93.38	-4,156.0	-514.4	726.5	644.3	82.26	8.832	
10,300.0	6,809.0	6,736.6	6,735.7	71.5	13.5	-92.75	-4,156.1	-514.5	631.2	547.1	84.14	7.502	
10,400.0	6,808.1	6,734.3	6,733.4	73.4	13.5	-92.12	-4,156.1	-514.5	537.7	451.7	86.02	6.251	
10,500.0	6,807.3	6,732.0	6,731.1	75.2	13.5	-91.48	-4,156.1	-514.5	446.9	359.0	87.89	5.085	
10,600.0	6,806.4	6,729.7	6,728.8	77.1	13.5	-90.84	-4,156.2	-514.6	361.0	271.2	89.76	4.022	
10,700.0	6,805.5	6,727.4	6,726.5	78.9	13.5	-90.19	-4,156.2	-514.6	284.4	192.8	91.62	3.105	
10,800.0	6,804.7	6,725.1	6,724.2	80.8	13.5	-89.55	-4,156.2	-514.7	226.9	133.4	93.47	2.428	
10,897.1	6,803.8	6,722.8	6,721.9	82.6	13.5	-88.91	-4,156.3	-514.7	205.1	109.8	95.26	2.153 CC	
10,900.0	6,803.8	6,722.7	6,721.9	82.7	13.5	-88.90	-4,156.3	-514.7	205.1	109.8	95.31	2.152 ES, SF	
11,000.0	6,802.9	6,720.4	6,719.5	84.5	13.5	-88.24	-4,156.3	-514.8	229.4	132.3	97.15	2.361	
11,100.0	6,802.0	6,718.1	6,717.2	86.4	13.5	-87.59	-4,156.3	-514.8	288.4	189.4	98.97	2.914	
11,200.0	6,801.2	6,715.7	6,714.8	88.3	13.5	-86.93	-4,156.4	-514.8	365.7	264.9	100.78	3.628	
11,300.0	6,800.3	6,713.4	6,712.5	90.2	13.5	-86.27	-4,156.4	-514.9	451.9	349.4	102.58	4.406	
11,333.6	6,800.0	6,712.6	6,711.7	90.7	13.5	-86.05	-4,156.4	-514.9	482.1	379.1	103.06	4.678	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Becker Ranch 5J-203
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4830.0ft (RKB - 15')
Reference Site:	Becker Ranch 5M-HZ Pad Sec.5-T3N-R64W	MD Reference:	WELL @ 4830.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5J-203	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 #2 (1-23-15)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.5-T3N-R64W - Becker 7 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,500.0	6,816.0	6,767.0	6,765.0	56.9	11.9	100.12	-3,682.8	-885.3	936.2	869.9	66.29	14.123		
9,600.0	6,815.1	6,764.0	6,762.0	58.7	11.9	99.08	-3,682.9	-885.3	837.9	769.6	68.33	12.263		
9,700.0	6,814.3	6,760.9	6,758.9	60.5	11.9	98.03	-3,682.9	-885.3	740.1	669.8	70.37	10.518		
9,800.0	6,813.4	6,757.9	6,755.9	62.3	11.9	96.97	-3,683.0	-885.3	643.0	570.6	72.40	8.882		
9,900.0	6,812.5	6,754.8	6,752.9	64.2	11.9	95.92	-3,683.1	-885.3	546.9	472.5	74.42	7.349		
10,000.0	6,811.6	6,751.8	6,749.8	66.0	11.9	94.85	-3,683.1	-885.4	452.5	376.1	76.43	5.921		
10,100.0	6,810.8	6,748.8	6,746.8	67.8	11.9	93.79	-3,683.2	-885.4	361.1	282.7	78.43	4.604		
10,200.0	6,809.9	6,745.7	6,743.7	69.7	11.9	92.72	-3,683.3	-885.4	275.6	195.2	80.41	3.428		
10,300.0	6,809.0	6,742.7	6,740.7	71.5	11.9	91.65	-3,683.3	-885.4	203.9	121.5	82.37	2.475		
10,400.0	6,808.1	6,739.6	6,737.6	73.4	11.9	90.58	-3,683.4	-885.4	164.7	80.4	84.31	1.953		
10,422.3	6,808.0	6,738.9	6,736.9	73.8	11.9	90.34	-3,683.4	-885.4	163.2	78.4	84.74	1.925 CC, ES, SF		
10,500.0	6,807.3	6,736.6	6,734.6	75.2	11.9	89.51	-3,683.5	-885.5	180.7	94.5	86.23	2.096		
10,600.0	6,806.4	6,733.5	6,731.5	77.1	11.9	88.44	-3,683.5	-885.5	241.2	153.1	88.12	2.737		
10,700.0	6,805.5	6,730.5	6,728.5	78.9	11.9	87.37	-3,683.6	-885.5	322.0	232.0	89.99	3.578		
10,800.0	6,804.7	6,727.4	6,725.4	80.8	11.9	86.31	-3,683.7	-885.5	411.3	319.5	91.83	4.479		
10,900.0	6,803.8	6,724.4	6,722.4	82.7	11.9	85.24	-3,683.7	-885.5	504.6	411.0	93.64	5.389		
11,000.0	6,802.9	6,721.3	6,719.3	84.5	11.9	84.18	-3,683.8	-885.5	600.1	504.6	95.42	6.288		
11,100.0	6,802.0	6,718.3	6,716.3	86.4	11.9	83.12	-3,683.9	-885.6	696.8	599.6	97.17	7.171		
11,200.0	6,801.2	6,715.2	6,713.2	88.3	11.8	82.07	-3,683.9	-885.6	794.3	695.4	98.89	8.032		
11,300.0	6,800.3	6,712.2	6,710.2	90.2	11.8	81.03	-3,684.0	-885.6	892.4	791.8	100.57	8.873		
11,333.6	6,800.0	6,711.1	6,709.1	90.7	11.8	80.68	-3,684.0	-885.6	925.4	824.4	101.00	9.162		

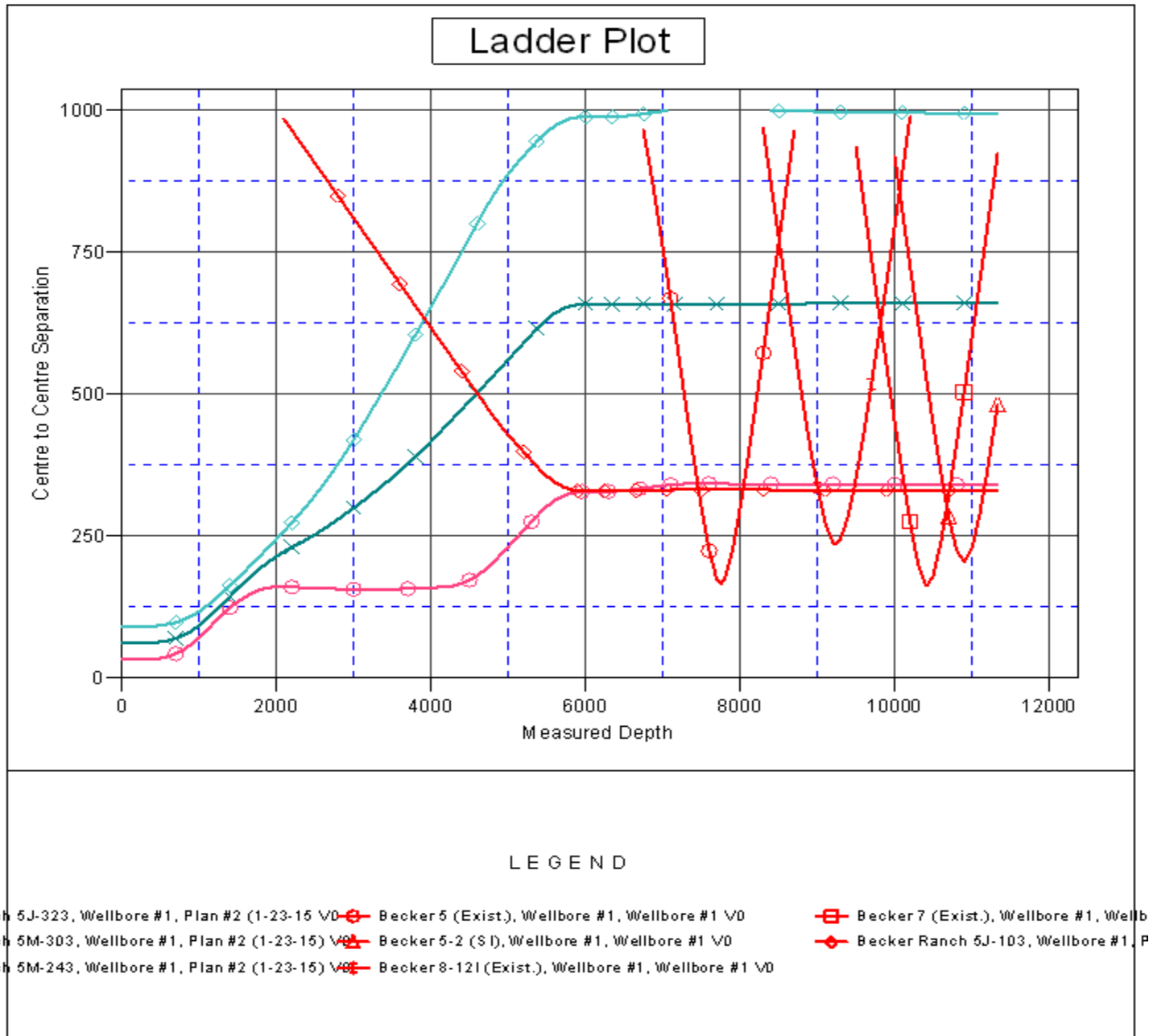
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Becker Ranch 5J-203
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4830.0ft (RKB - 15')
Reference Site:	Becker Ranch 5M-HZ Pad Sec.5-T3N-R64W	MD Reference:	WELL @ 4830.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5J-203	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 #2 (1-23-15)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.5-T3N-R64W - Becker 8-12I (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error: 0.0 ft	
Survey Program: 100-NS-GYRO-MS												Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)					
8,300.0	6,826.5	6,764.0	6,760.7	36.0	14.9	88.89	-2,501.3	-965.2	969.0	919.9	49.12	19.728	
8,400.0	6,825.6	6,763.0	6,759.7	37.7	14.9	88.64	-2,501.3	-965.1	872.4	821.6	50.84	17.158	
8,500.0	6,824.7	6,762.0	6,758.6	39.3	14.9	88.39	-2,501.3	-965.0	776.6	724.0	52.59	14.768	
8,600.0	6,823.9	6,760.9	6,757.6	41.0	14.9	88.14	-2,501.3	-965.0	682.1	627.7	54.35	12.550	
8,700.0	6,823.0	6,759.9	6,756.5	42.7	14.9	87.88	-2,501.3	-964.9	589.3	533.2	56.12	10.501	
8,800.0	6,822.1	6,758.9	6,755.5	44.5	14.9	87.63	-2,501.3	-964.9	499.3	441.4	57.90	8.623	
8,900.0	6,821.2	6,757.8	6,754.5	46.2	14.9	87.38	-2,501.3	-964.8	413.9	354.2	59.70	6.934	
9,000.0	6,820.4	6,756.8	6,753.4	47.9	14.9	87.13	-2,501.3	-964.7	336.7	275.2	61.50	5.475	
9,100.0	6,819.5	6,755.7	6,752.4	49.7	14.9	86.88	-2,501.3	-964.7	274.6	211.3	63.31	4.338	
9,200.0	6,818.6	6,754.7	6,751.4	51.5	14.9	86.62	-2,501.3	-964.6	239.7	174.6	65.12	3.681	
9,239.8	6,818.3	6,754.3	6,750.9	52.2	14.9	86.52	-2,501.3	-964.6	236.4	170.5	65.84	3.590 CC, ES, SF	
9,300.0	6,817.7	6,753.7	6,750.3	53.3	14.9	86.37	-2,501.3	-964.5	243.9	177.0	66.94	3.644	
9,400.0	6,816.9	6,752.6	6,749.3	55.1	14.9	86.12	-2,501.3	-964.5	285.5	216.8	68.76	4.152	
9,500.0	6,816.0	6,751.6	6,748.2	56.9	14.9	85.87	-2,501.3	-964.4	351.5	280.9	70.59	4.980	
9,600.0	6,815.1	6,750.5	6,747.2	58.7	14.9	85.62	-2,501.3	-964.4	430.8	358.4	72.42	5.949	
9,700.0	6,814.3	6,749.5	6,746.2	60.5	14.9	85.36	-2,501.3	-964.3	517.3	443.1	74.25	6.967	
9,800.0	6,813.4	6,748.5	6,745.1	62.3	14.9	85.11	-2,501.3	-964.2	608.0	531.9	76.09	7.990	
9,900.0	6,812.5	6,747.4	6,744.1	64.2	14.9	84.86	-2,501.3	-964.2	701.2	623.3	77.93	8.998	
10,000.0	6,811.6	6,746.4	6,743.1	66.0	14.9	84.61	-2,501.3	-964.1	796.0	716.3	79.76	9.980	
10,100.0	6,810.8	6,745.3	6,742.0	67.8	14.9	84.36	-2,501.3	-964.0	892.0	810.4	81.60	10.932	
10,200.0	6,809.9	6,744.3	6,741.0	69.7	14.9	84.11	-2,501.3	-964.0	988.8	905.4	83.44	11.851	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Becker Ranch 5J-203
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4830.0ft (RKB - 15')
Reference Site:	Becker Ranch 5M-HZ Pad Sec.5-T3N-R64W	MD Reference:	WELL @ 4830.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Becker Ranch 5J-203	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 #2 (1-23-15)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4830.0ft (RKB - 15')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Becker Ranch 5J-203
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.60°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Becker Ranch 5J-203
Project:	SEC.5-T3N-R64W	TVD Reference:	WELL @ 4830.0ft (RKB - 15')
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Reference Depths are relative to WELL @ 4830.0ft (RKB - 15')

Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Becker Ranch 5J-203

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