PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Peterson 14X-434**

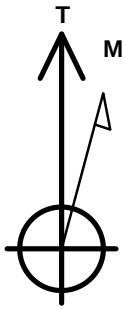
Surface Location: Peterson 14WX-HZ Pad Sec.14-T5N-R64W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4571.0

+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.0	0.0	1388593.88	3275956.39	40.395860	-104.509210	

Ensign Rig - RKB - 15' WELL @ 4586.0ft (Ensign Rig - RKB - 15')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 1397'FSL & 310'FEL		0.0	0.0	Point
BHL 1125'FSL, 500'FWL	6686.0	-256.3	-4325.8	Point



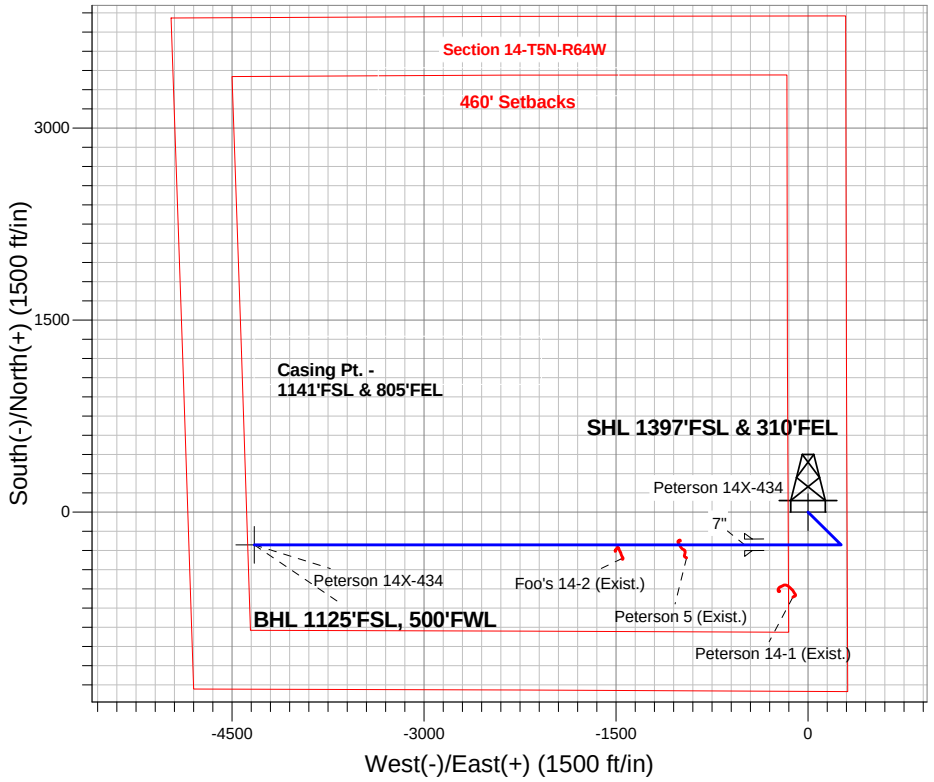
Azimuths to True North
Magnetic North: 8.29°

Magnetic Field
Strength: 52815.9snT
Dip Angle: 66.98°
Date: 9/12/2014
Model: IGRF2010

Peterson 14WX-HZ Pad Sec.14-T5N-R64W
Peterson 14X-434
Plan #2 (9-12-14)
14:42, September 12 2014

ANNOTATIONS

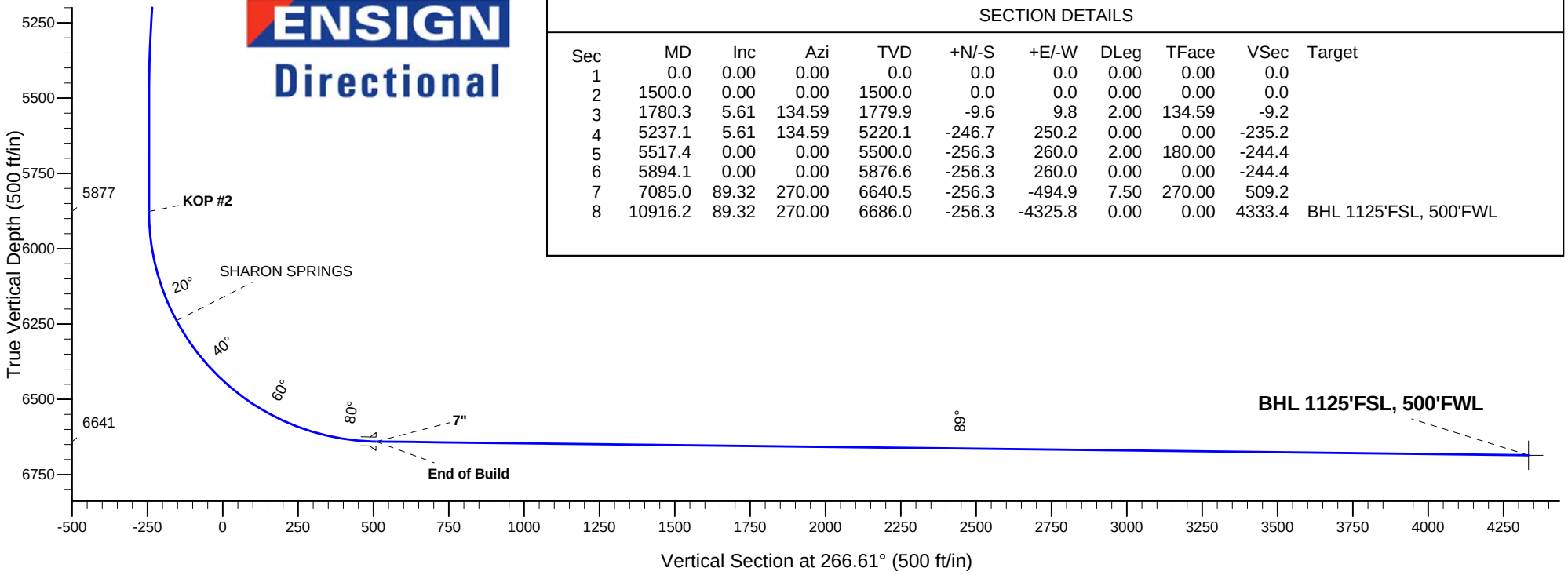
TVD	MD	Annotation
1500.0	1500.0	KOP #1
5876.7	5894.1	KOP #2
6640.5	7085.0	End of Build



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	1500.0	0.00	0.00	1500.0	0.0	0.0	0.00	0.00	0.0	
3	1780.3	5.61	134.59	1779.9	-9.6	9.8	2.00	134.59	-9.2	
4	5237.1	5.61	134.59	5220.1	-246.7	250.2	0.00	0.00	-235.2	
5	5517.4	0.00	0.00	5500.0	-256.3	260.0	2.00	180.00	-244.4	
6	5894.1	0.00	0.00	5876.6	-256.3	260.0	0.00	0.00	-244.4	
7	7085.0	89.32	270.00	6640.5	-256.3	-494.9	7.50	270.00	509.2	
8	10916.2	89.32	270.00	6686.0	-256.3	-4325.8	0.00	0.00	4333.4	BHL 1125'FSL, 500'FWL



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.14-T5N-R64W
Peterson 14WX-HZ Pad Sec.14-T5N-R64W
Peterson 14X-434

Wellbore #1

Plan: Plan #2 (9-12-14)

Standard Planning Report

12 September, 2014

Database:	Landmark	**Local Co-ordinate Reference:**	Well Peterson 14X-434
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Project:	SEC.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**North Reference:**	True
Well:	Peterson 14X-434	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (9-12-14)		

Project SEC.14-T5N-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 Peterson 14WX-HZ Pad Sec.14-T5N-R64W

Site Position:		**Northing:**	1,388,684.96 ft	**Latitude:**	40.396110
From:	Lat/Long	**Easting:**	3,275,955.37 ft	**Longitude:**	-104.509210
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	0.64 °

Well Peterson 14X-434

Well Position	**+N/-S**	-91.1 ft	**Northing:**	1,388,593.88 ft	**Latitude:**	40.395860
	+E/-W	0.0 ft	**Easting:**	3,275,956.39 ft	**Longitude:**	-104.509210
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,571.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	9/12/2014	8.29	66.98	52,816

Design Plan #2 (9-12-14)

Audit Notes:

Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	266.61

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,780.3	5.61	134.59	1,779.9	-9.6	9.8	2.00	2.00	0.00	134.59	
5,237.1	5.61	134.59	5,220.1	-246.7	250.2	0.00	0.00	0.00	0.00	
5,517.4	0.00	0.00	5,500.0	-256.3	260.0	2.00	-2.00	0.00	180.00	
5,894.1	0.00	0.00	5,876.6	-256.3	260.0	0.00	0.00	0.00	0.00	
7,085.0	89.32	270.00	6,640.5	-256.3	-494.9	7.50	7.50	0.00	270.00	
10,916.2	89.32	270.00	6,686.0	-256.3	-4,325.8	0.00	0.00	0.00	0.00	BHL 1125'FSL, 500

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Project:	SEC.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**North Reference:**	True
Well:	Peterson 14X-434	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (9-12-14)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
1.0	0.00	0.00	1.0	0.0	0.0	0.0	0.00	0.00	0.00
SHL 1397'FSL & 310'FEL - SHL 1547'FSL, 310'FEL									
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP #1									
1,600.0	2.00	134.59	1,600.0	-1.2	1.2	-1.2	2.00	2.00	0.00
1,700.0	4.00	134.59	1,699.8	-4.9	5.0	-4.7	2.00	2.00	0.00
1,780.3	5.61	134.59	1,779.9	-9.6	9.8	-9.2	2.00	2.00	0.00
1,800.0	5.61	134.59	1,799.5	-11.0	11.1	-10.5	0.00	0.00	0.00
1,900.0	5.61	134.59	1,899.0	-17.8	18.1	-17.0	0.00	0.00	0.00
2,000.0	5.61	134.59	1,998.5	-24.7	25.0	-23.5	0.00	0.00	0.00
2,100.0	5.61	134.59	2,098.0	-31.5	32.0	-30.1	0.00	0.00	0.00
2,200.0	5.61	134.59	2,197.5	-38.4	39.0	-36.6	0.00	0.00	0.00
2,300.0	5.61	134.59	2,297.1	-45.3	45.9	-43.2	0.00	0.00	0.00
2,400.0	5.61	134.59	2,396.6	-52.1	52.9	-49.7	0.00	0.00	0.00
2,500.0	5.61	134.59	2,496.1	-59.0	59.8	-56.2	0.00	0.00	0.00
2,600.0	5.61	134.59	2,595.6	-65.8	66.8	-62.8	0.00	0.00	0.00
2,700.0	5.61	134.59	2,695.2	-72.7	73.7	-69.3	0.00	0.00	0.00
2,800.0	5.61	134.59	2,794.7	-79.5	80.7	-75.9	0.00	0.00	0.00
2,900.0	5.61	134.59	2,894.2	-86.4	87.7	-82.4	0.00	0.00	0.00
3,000.0	5.61	134.59	2,993.7	-93.3	94.6	-88.9	0.00	0.00	0.00
3,100.0	5.61	134.59	3,093.2	-100.1	101.6	-95.5	0.00	0.00	0.00
3,200.0	5.61	134.59	3,192.8	-107.0	108.5	-102.0	0.00	0.00	0.00
3,300.0	5.61	134.59	3,292.3	-113.8	115.5	-108.5	0.00	0.00	0.00
3,400.0	5.61	134.59	3,391.8	-120.7	122.4	-115.1	0.00	0.00	0.00
3,416.3	5.61	134.59	3,408.0	-121.8	123.6	-116.1	0.00	0.00	0.00
PARKMAN									
3,500.0	5.61	134.59	3,491.3	-127.6	129.4	-121.6	0.00	0.00	0.00
3,600.0	5.61	134.59	3,590.8	-134.4	136.4	-128.2	0.00	0.00	0.00
3,700.0	5.61	134.59	3,690.4	-141.3	143.3	-134.7	0.00	0.00	0.00
3,800.0	5.61	134.59	3,789.9	-148.1	150.3	-141.2	0.00	0.00	0.00
3,900.0	5.61	134.59	3,889.4	-155.0	157.2	-147.8	0.00	0.00	0.00
4,000.0	5.61	134.59	3,988.9	-161.8	164.2	-154.3	0.00	0.00	0.00
4,100.0	5.61	134.59	4,088.5	-168.7	171.1	-160.9	0.00	0.00	0.00
4,161.8	5.61	134.59	4,150.0	-172.9	175.4	-164.9	0.00	0.00	0.00
SUSSEX									
4,200.0	5.61	134.59	4,188.0	-175.6	178.1	-167.4	0.00	0.00	0.00
4,300.0	5.61	134.59	4,287.5	-182.4	185.0	-173.9	0.00	0.00	0.00
4,400.0	5.61	134.59	4,387.0	-189.3	192.0	-180.5	0.00	0.00	0.00

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Project:	SEC.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**North Reference:**	True
Well:	Peterson 14X-434	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (9-12-14)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,500.0	5.61	134.59	4,486.5	-196.1	199.0	-187.0	0.00	0.00	0.00
4,583.9	5.61	134.59	4,570.0	-201.9	204.8	-192.5	0.00	0.00	0.00
SHANNON									
4,600.0	5.61	134.59	4,586.1	-203.0	205.9	-193.6	0.00	0.00	0.00
4,700.0	5.61	134.59	4,685.6	-209.8	212.9	-200.1	0.00	0.00	0.00
4,800.0	5.61	134.59	4,785.1	-216.7	219.8	-206.6	0.00	0.00	0.00
4,900.0	5.61	134.59	4,884.6	-223.6	226.8	-213.2	0.00	0.00	0.00
5,000.0	5.61	134.59	4,984.2	-230.4	233.7	-219.7	0.00	0.00	0.00
5,100.0	5.61	134.59	5,083.7	-237.3	240.7	-226.2	0.00	0.00	0.00
5,200.0	5.61	134.59	5,183.2	-244.1	247.7	-232.8	0.00	0.00	0.00
5,237.1	5.61	134.59	5,220.1	-246.7	250.2	-235.2	0.00	0.00	0.00
5,300.0	4.35	134.59	5,282.8	-250.5	254.1	-238.9	2.00	-2.00	0.00
5,400.0	2.35	134.59	5,382.6	-254.6	258.3	-242.8	2.00	-2.00	0.00
5,500.0	0.35	134.59	5,482.6	-256.3	260.0	-244.4	2.00	-2.00	0.00
5,517.4	0.00	0.00	5,500.0	-256.3	260.0	-244.4	2.00	-2.00	0.00
5,600.0	0.00	0.00	5,582.6	-256.3	260.0	-244.4	0.00	0.00	0.00
5,700.0	0.00	0.00	5,682.6	-256.3	260.0	-244.4	0.00	0.00	0.00
5,800.0	0.00	0.00	5,782.6	-256.3	260.0	-244.4	0.00	0.00	0.00
5,894.1	0.00	0.00	5,876.7	-256.3	260.0	-244.4	0.00	0.00	0.00
KOP #2									
5,900.0	0.44	270.00	5,882.6	-256.3	260.0	-244.4	7.54	7.54	0.00
6,000.0	7.94	270.00	5,982.2	-256.3	252.7	-237.1	7.50	7.50	0.00
6,100.0	15.44	270.00	6,080.1	-256.3	232.4	-216.8	7.50	7.50	0.00
6,200.0	22.94	270.00	6,174.5	-256.3	199.6	-184.0	7.50	7.50	0.00
6,271.6	28.32	270.00	6,239.0	-256.3	168.6	-153.1	7.50	7.50	0.00
SHARON SPRINGS									
6,300.0	30.44	270.00	6,263.7	-256.3	154.7	-139.2	7.50	7.50	0.00
6,400.0	37.94	270.00	6,346.4	-256.3	98.5	-83.2	7.50	7.50	0.00
6,500.0	45.44	270.00	6,421.0	-256.3	32.0	-16.8	7.50	7.50	0.00
6,600.0	52.94	270.00	6,486.3	-256.3	-43.6	58.7	7.50	7.50	0.00
6,700.0	60.44	270.00	6,541.2	-256.3	-127.1	142.1	7.50	7.50	0.00
6,800.0	67.94	270.00	6,584.7	-256.3	-217.1	231.9	7.50	7.50	0.00
6,900.0	75.44	270.00	6,616.1	-256.3	-312.0	326.6	7.50	7.50	0.00
7,000.0	82.94	270.00	6,634.8	-256.3	-410.1	424.6	7.50	7.50	0.00
7,085.0	89.32	270.00	6,640.5	-256.3	-494.9	509.2	7.50	7.50	0.00
End of Build - 7"									
7,100.0	89.32	270.00	6,640.7	-256.3	-509.9	524.1	0.00	0.00	0.00
7,200.0	89.32	270.00	6,641.9	-256.3	-609.9	624.0	0.00	0.00	0.00
7,300.0	89.32	270.00	6,643.1	-256.3	-709.9	723.8	0.00	0.00	0.00
7,400.0	89.32	270.00	6,644.3	-256.3	-809.9	823.6	0.00	0.00	0.00
7,500.0	89.32	270.00	6,645.5	-256.3	-909.8	923.4	0.00	0.00	0.00
7,600.0	89.32	270.00	6,646.6	-256.3	-1,009.8	1,023.2	0.00	0.00	0.00
7,700.0	89.32	270.00	6,647.8	-256.3	-1,109.8	1,123.0	0.00	0.00	0.00
7,800.0	89.32	270.00	6,649.0	-256.3	-1,209.8	1,222.9	0.00	0.00	0.00
7,900.0	89.32	270.00	6,650.2	-256.3	-1,309.8	1,322.7	0.00	0.00	0.00
8,000.0	89.32	270.00	6,651.4	-256.3	-1,409.8	1,422.5	0.00	0.00	0.00
8,100.0	89.32	270.00	6,652.6	-256.3	-1,509.8	1,522.3	0.00	0.00	0.00
8,200.0	89.32	270.00	6,653.8	-256.3	-1,609.8	1,622.1	0.00	0.00	0.00
8,300.0	89.32	270.00	6,655.0	-256.3	-1,709.8	1,722.0	0.00	0.00	0.00
8,400.0	89.32	270.00	6,656.1	-256.3	-1,809.8	1,821.8	0.00	0.00	0.00
8,500.0	89.32	270.00	6,657.3	-256.3	-1,909.8	1,921.6	0.00	0.00	0.00
8,600.0	89.32	270.00	6,658.5	-256.3	-2,009.8	2,021.4	0.00	0.00	0.00

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Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**North Reference:**	True
Well:	Peterson 14X-434	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (9-12-14)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,700.0	89.32	270.00	6,659.7	-256.3	-2,109.8	2,121.2	0.00	0.00	0.00
8,800.0	89.32	270.00	6,660.9	-256.3	-2,209.8	2,221.0	0.00	0.00	0.00
8,900.0	89.32	270.00	6,662.1	-256.3	-2,309.7	2,320.9	0.00	0.00	0.00
9,000.0	89.32	270.00	6,663.3	-256.3	-2,409.7	2,420.7	0.00	0.00	0.00
9,100.0	89.32	270.00	6,664.4	-256.3	-2,509.7	2,520.5	0.00	0.00	0.00
9,200.0	89.32	270.00	6,665.6	-256.3	-2,609.7	2,620.3	0.00	0.00	0.00
9,300.0	89.32	270.00	6,666.8	-256.3	-2,709.7	2,720.1	0.00	0.00	0.00
9,400.0	89.32	270.00	6,668.0	-256.3	-2,809.7	2,820.0	0.00	0.00	0.00
9,500.0	89.32	270.00	6,669.2	-256.3	-2,909.7	2,919.8	0.00	0.00	0.00
9,600.0	89.32	270.00	6,670.4	-256.3	-3,009.7	3,019.6	0.00	0.00	0.00
9,700.0	89.32	270.00	6,671.6	-256.3	-3,109.7	3,119.4	0.00	0.00	0.00
9,800.0	89.32	270.00	6,672.8	-256.3	-3,209.7	3,219.2	0.00	0.00	0.00
9,900.0	89.32	270.00	6,673.9	-256.3	-3,309.7	3,319.0	0.00	0.00	0.00
10,000.0	89.32	270.00	6,675.1	-256.3	-3,409.7	3,418.9	0.00	0.00	0.00
10,100.0	89.32	270.00	6,676.3	-256.3	-3,509.7	3,518.7	0.00	0.00	0.00
10,200.0	89.32	270.00	6,677.5	-256.3	-3,609.7	3,618.5	0.00	0.00	0.00
10,300.0	89.32	270.00	6,678.7	-256.3	-3,709.6	3,718.3	0.00	0.00	0.00
10,400.0	89.32	270.00	6,679.9	-256.3	-3,809.6	3,818.1	0.00	0.00	0.00
10,500.0	89.32	270.00	6,681.1	-256.3	-3,909.6	3,917.9	0.00	0.00	0.00
10,600.0	89.32	270.00	6,682.2	-256.3	-4,009.6	4,017.8	0.00	0.00	0.00
10,700.0	89.32	270.00	6,683.4	-256.3	-4,109.6	4,117.6	0.00	0.00	0.00
10,800.0	89.32	270.00	6,684.6	-256.3	-4,209.6	4,217.4	0.00	0.00	0.00
10,900.0	89.32	270.00	6,685.8	-256.3	-4,309.6	4,317.2	0.00	0.00	0.00
10,916.2	89.32	270.00	6,686.0	-256.3	-4,325.8	4,333.4	0.00	0.00	0.00
BHL 1125'FSL, 500'FWL									

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
BHL 1125'FSL, 500'F\	0.00	0.00	6,686.0	-256.3	-4,325.8	1,388,289.27	3,271,633.92	40.395155	-104.524740
- plan hits target center - Point									
SHL 1397'FSL & 310'I	0.00	0.00	1.0	0.0	0.0	1,388,593.89	3,275,956.39	40.395860	-104.509210
- plan hits target center - Point									
SHL 1547'FSL, 310'FI	0.00	0.00	1.0	149.4	0.0	1,388,743.24	3,275,954.72	40.396270	-104.509210
- plan misses target center by 149.4ft at 1.0ft MD (1.0 TVD, 0.0 N, 0.0 E) - Point									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,085.0	6,640.5	7"	7	7-1/2

Database:	Landmark	**Local Co-ordinate Reference:**	Well Peterson 14X-434
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Project:	SEC.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**North Reference:**	True
Well:	Peterson 14X-434	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (9-12-14)		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,416.3	3,408.0	PARKMAN			
4,161.8	4,150.0	SUSSEX			
4,583.9	4,570.0	SHANNON			
6,271.6	6,239.0	SHARON SPRINGS			

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
1,500.0	1,500.0	0.0	0.0	KOP #1
5,894.1	5,876.7	-256.3	260.0	KOP #2
7,085.0	6,640.5	-256.3	-494.9	End of Build

ENSIGN Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.14-T5N-R64W
Peterson 14WX-HZ Pad Sec.14-T5N-R64W
Peterson 14X-434

Wellbore #1
Plan #2 (9-12-14)

Anticollision Report

12 September, 2014

PDC ENERGY
Growing E&P Value

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peterson 14X-434
Project:	SEC.14-T5N-R64W	**TVD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peterson 14X-434	**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 (9-12-14)	**Offset TVD Reference:**	Offset Datum

Reference Plan #2 (9-12-14)

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** 9/12/2014

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	10,915.8	Plan #2 (9-12-14) (Wellbore #1)	MWD	MWD - Standard

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Peterson 14WX-HZ Pad (Exist) Sec.14-T5N-R64W						
Foo's 14-2 (Exist.) - Wellbore #1 - Wellbore #1	8,042.5	6,625.0	107.6	51.0	1.900	CC, ES, SF
Peterson 14-1 (Exist.) - Wellbore #1 - Wellbore #1	6,539.6	6,300.0	446.0	420.9	17.768	CC, ES
Peterson 14-1 (Exist.) - Wellbore #1 - Wellbore #1	6,550.0	6,300.0	446.1	421.0	17.763	SF
Peterson 5 (Exist.) - Wellbore #1 - Wellbore #1	7,538.8	6,632.0	100.0	54.8	2.213	CC, ES, SF
Peterson 14WX-HZ Pad Sec.14-T5N-R64W						
Peterson 14W-234 - Wellbore #1 - Plan #2 (9-12-14)	1,000.0	1,000.0	91.1	86.8	21.327	CC, ES
Peterson 14W-234 - Wellbore #1 - Plan #2 (9-12-14)	10,916.2	10,827.9	942.7	696.9	3.834	SF
Peterson 14W-434 - Wellbore #1 - Plan #1 (9-12-14)	800.0	800.0	120.2	116.9	35.659	CC, ES
Peterson 14W-434 - Wellbore #1 - Plan #1 (9-12-14)	1,200.0	1,182.2	146.1	140.9	28.377	SF
Peterson 14X-234 - Wellbore #1 - Plan #1 (9-12-14)	1,000.0	1,000.0	29.3	25.0	6.857	CC, ES
Peterson 14X-234 - Wellbore #1 - Plan #1 (9-12-14)	10,916.2	10,822.4	484.9	247.4	2.042	SF
Peterson 14X-304 - Wellbore #1 - Plan #1 (9-12-14)	1,500.0	1,500.0	29.2	22.6	4.473	CC, ES
Peterson 14X-304 - Wellbore #1 - Plan #1 (9-12-14)	10,916.2	10,867.1	289.1	55.3	1.237	Level 2, SF
Peterson 14X-414 - Wellbore #1 - Plan #2 (9-12-14)	1,500.0	1,500.0	58.3	51.8	8.943	CC, ES
Peterson 14X-414 - Wellbore #1 - Plan #2 (9-12-14)	10,916.2	10,956.7	599.1	351.1	2.415	SF
Peterson 14Y-304 - Wellbore #1 - Plan #1 (9-12-14)	200.0	200.0	91.1	90.4	135.134	CC, ES
Peterson 14Y-304 - Wellbore #1 - Plan #1 (9-12-14)	5,200.0	5,080.2	993.5	967.1	37.752	SF
Peterson 14Y-414 - Wellbore #1 - Plan #2 (9-12-14)	800.0	800.0	58.4	55.0	17.309	CC, ES
Peterson 14Y-414 - Wellbore #1 - Plan #2 (9-12-14)	10,916.2	10,979.5	719.9	471.7	2.900	SF

Offset Design Peterson 14WX-HZ Pad (Exist) Sec.14-T5N-R64W - Foo's 14-2 (Exist.) - Wellbore #1 - Wellbore #1
Survey Program: 100-NS-GYRO-MS
Offset Site Error: 0.0 ft
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
7,050.0	6,639.3	6,625.0	6,622.3	21.1	11.8	-60.49	-362.8	-1,452.4	998.2	968.7	29.52	33.816	
7,085.0	6,640.5	6,625.0	6,622.3	21.9	11.8	-81.66	-362.8	-1,452.4	963.5	930.1	33.40	28.850	
7,100.0	6,640.7	6,625.0	6,622.3	22.2	11.8	-81.66	-362.8	-1,452.4	948.6	914.9	33.70	28.148	
7,200.0	6,641.9	6,625.0	6,622.3	24.3	11.8	-81.66	-362.8	-1,452.4	849.3	813.5	35.82	23.712	
7,300.0	6,643.1	6,625.0	6,622.3	26.6	11.8	-81.66	-362.8	-1,452.4	750.2	712.2	38.06	19.713	
7,400.0	6,644.3	6,625.0	6,622.3	28.9	11.8	-81.66	-362.8	-1,452.4	651.4	611.0	40.39	16.127	
7,500.0	6,645.5	6,625.0	6,622.3	31.4	11.8	-81.66	-362.8	-1,452.4	553.0	510.2	42.80	12.921	

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 Peterson 14X-434
Project:	SEC.14-T5N-R64W	**TVD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peterson 14X-434	**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 (9-12-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Peterson 14WX-HZ Pad (Exist) Sec.14-T5N-R64W - Foo's 14-2 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 100-NS-GYRO-MS

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	6,646.6	6,625.0	6,622.3	33.9	11.8	-81.66	-362.8	-1,452.4	455.3	410.1	45.27	10.059	
7,700.0	6,647.8	6,625.0	6,622.3	36.4	11.8	-81.66	-362.8	-1,452.4	359.0	311.2	47.78	7.513	
7,800.0	6,649.0	6,625.0	6,622.3	39.0	11.8	-81.66	-362.8	-1,452.4	265.3	214.9	50.33	5.271	
7,900.0	6,650.2	6,625.0	6,622.3	41.6	11.8	-81.66	-362.8	-1,452.4	178.5	125.6	52.91	3.374	
8,000.0	6,651.4	6,625.0	6,622.3	44.2	11.8	-81.66	-362.8	-1,452.4	115.7	60.2	55.51	2.084	
8,042.5	6,651.9	6,625.0	6,622.3	45.3	11.8	-81.66	-362.8	-1,452.4	107.6	51.0	56.62	1.900	CC, ES, SF
8,100.0	6,652.6	6,625.0	6,622.3	46.9	11.8	-81.66	-362.8	-1,452.4	122.0	63.9	58.13	2.099	
8,200.0	6,653.8	6,625.0	6,622.3	49.5	11.8	-81.66	-362.8	-1,452.4	190.8	130.0	60.77	3.139	
8,300.0	6,655.0	6,625.0	6,622.3	52.2	11.8	-81.66	-362.8	-1,452.4	279.1	215.7	63.43	4.400	
8,400.0	6,656.1	6,625.0	6,622.3	54.9	11.8	-81.66	-362.8	-1,452.4	373.4	307.3	66.10	5.649	
8,500.0	6,657.3	6,625.0	6,622.3	57.6	11.8	-81.66	-362.8	-1,452.4	470.0	401.3	68.78	6.834	
8,600.0	6,658.5	6,625.0	6,622.3	60.3	11.8	-81.66	-362.8	-1,452.4	567.8	496.4	71.47	7.946	
8,700.0	6,659.7	6,625.0	6,622.3	63.1	11.8	-81.66	-362.8	-1,452.4	666.3	592.1	74.16	8.984	
8,800.0	6,660.9	6,625.0	6,622.3	65.8	11.8	-81.66	-362.8	-1,452.4	765.2	688.3	76.87	9.954	
8,900.0	6,662.1	6,625.0	6,622.3	68.5	11.8	-81.66	-362.8	-1,452.4	864.3	784.7	79.57	10.861	
9,000.0	6,663.3	6,625.0	6,622.3	71.3	11.8	-81.66	-362.8	-1,452.4	963.6	881.3	82.29	11.709	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peterson 14X-434
Project:	SEC.14-T5N-R64W	**TVD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peterson 14X-434	**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 (9-12-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Peterson 14WX-HZ Pad (Exist) Sec.14-T5N-R64W - Peterson 14-1 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 100-NS-GYRO-MS

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	-160.33	-615.7	-220.1	654.1				
100.0	100.0	77.3	77.3	0.1	0.1	-160.32	-615.9	-220.3	654.1	653.9	0.22	3,039.537	
200.0	200.0	176.2	176.2	0.3	0.3	-160.28	-616.5	-221.1	655.0	654.3	0.67	975.516	
300.0	300.0	277.7	277.7	0.6	0.6	-160.21	-617.0	-222.1	655.8	654.6	1.16	565.048	
400.0	400.0	378.6	378.6	0.8	0.9	-160.14	-617.3	-223.0	656.4	654.7	1.65	398.121	
500.0	500.0	475.8	475.7	1.0	1.1	-160.11	-617.8	-223.5	657.0	654.9	2.12	309.782	
600.0	600.0	573.5	573.4	1.2	1.4	-160.09	-618.8	-224.1	658.2	655.6	2.59	253.843	
700.0	700.0	675.7	675.6	1.5	1.6	-160.04	-619.8	-225.0	659.4	656.3	3.08	213.945	
800.0	800.0	777.9	777.9	1.7	1.9	-159.97	-620.2	-226.1	660.2	656.6	3.57	184.831	
900.0	900.0	879.3	879.3	1.9	2.1	-159.91	-620.5	-226.9	660.7	656.6	4.06	162.766	
1,000.0	1,000.0	979.8	979.8	2.1	2.4	-159.87	-620.7	-227.5	661.1	656.5	4.54	145.476	
1,100.0	1,100.0	1,079.4	1,079.3	2.4	2.7	-159.81	-620.8	-228.3	661.4	656.4	5.02	131.704	
1,200.0	1,200.0	1,182.5	1,182.5	2.6	2.9	-159.71	-620.6	-229.5	661.6	656.2	5.49	120.587	
1,300.0	1,300.0	1,288.4	1,288.4	2.8	3.1	-159.55	-619.5	-230.9	661.1	655.2	5.92	111.690	
1,400.0	1,400.0	1,397.5	1,397.4	3.0	3.3	-159.34	-616.9	-232.7	659.5	653.2	6.32	104.299	
1,500.0	1,500.0	1,505.9	1,505.7	3.3	3.4	-159.11	-613.0	-233.9	656.5	649.8	6.70	98.021	
1,600.0	1,600.0	1,610.4	1,610.1	3.5	3.6	66.68	-608.5	-234.1	651.9	644.8	7.02	92.818	
1,700.0	1,699.8	1,710.5	1,710.1	3.6	3.7	67.31	-604.1	-233.3	645.4	638.1	7.31	88.285	
1,780.3	1,779.9	1,790.0	1,789.6	3.8	3.8	67.99	-600.8	-232.2	639.4	631.8	7.55	84.719	
1,800.0	1,799.5	1,809.7	1,809.2	3.8	3.8	68.15	-600.0	-231.9	637.8	630.2	7.61	83.842	
1,900.0	1,899.0	1,910.6	1,910.0	4.0	3.9	68.96	-595.9	-229.9	629.7	621.8	7.92	79.504	
2,000.0	1,998.5	2,009.9	2,009.2	4.3	4.0	69.72	-592.1	-227.3	621.6	613.4	8.24	75.416	
2,100.0	2,098.0	2,108.7	2,107.9	4.5	4.1	70.41	-588.6	-223.9	613.7	605.1	8.57	71.611	
2,200.0	2,197.5	2,206.1	2,205.1	4.7	4.2	71.02	-585.8	-219.8	606.1	597.2	8.90	68.083	
2,300.0	2,297.1	2,305.2	2,304.2	5.0	4.3	71.61	-583.4	-215.3	598.7	589.4	9.25	64.743	
2,400.0	2,396.6	2,404.9	2,403.7	5.2	4.4	72.17	-581.1	-210.4	591.4	581.8	9.61	61.551	
2,500.0	2,496.1	2,504.9	2,503.5	5.5	4.6	72.75	-578.8	-205.4	584.2	574.2	9.99	58.487	
2,600.0	2,595.6	2,605.8	2,604.2	5.7	4.7	73.37	-576.3	-200.5	576.8	566.4	10.39	55.532	
2,700.0	2,695.2	2,705.9	2,704.2	6.0	4.9	74.01	-573.5	-195.6	569.3	558.5	10.80	52.712	
2,800.0	2,794.7	2,803.9	2,802.1	6.2	5.0	74.63	-571.1	-190.6	562.0	550.8	11.22	50.085	
2,900.0	2,894.2	2,900.0	2,898.0	6.5	5.2	75.18	-569.5	-185.5	555.4	543.7	11.64	47.710	
3,000.0	2,993.7	2,993.9	2,991.8	6.8	5.3	75.67	-568.9	-180.4	549.6	537.6	12.06	45.583	
3,100.0	3,093.2	3,089.6	3,087.3	7.0	5.5	76.09	-569.3	-174.8	544.7	532.2	12.48	43.646	
3,200.0	3,192.8	3,185.2	3,182.7	7.3	5.6	76.42	-570.9	-168.7	540.5	527.6	12.90	41.892	
3,300.0	3,292.3	3,279.0	3,276.3	7.6	5.8	76.66	-573.5	-162.6	537.3	523.9	13.32	40.321	
3,400.0	3,391.8	3,373.5	3,370.5	7.9	6.0	76.85	-577.4	-156.5	535.2	521.4	13.75	38.918	
3,500.0	3,491.3	3,471.9	3,468.6	8.1	6.1	77.02	-582.2	-150.3	533.8	519.6	14.19	37.620	
3,600.0	3,590.8	3,571.5	3,567.8	8.4	6.3	77.17	-587.2	-143.9	532.5	517.9	14.64	36.382	
3,700.0	3,690.4	3,669.4	3,665.4	8.7	6.5	77.32	-592.3	-137.7	531.4	516.4	15.09	35.221	
3,800.0	3,789.9	3,767.3	3,763.0	9.0	6.6	77.52	-597.5	-132.1	530.8	515.3	15.55	34.145	
3,900.0	3,889.4	3,865.9	3,861.3	9.3	6.8	77.76	-602.8	-127.0	530.5	514.5	16.01	33.137	
3,985.1	3,974.1	3,950.1	3,945.3	9.5	7.0	78.01	-607.3	-123.0	530.5	514.0	16.41	32.328	
4,000.0	3,988.9	3,964.9	3,960.1	9.5	7.0	78.06	-608.1	-122.4	530.5	514.0	16.48	32.190	
4,100.0	4,088.5	4,063.0	4,058.0	9.8	7.2	78.43	-613.1	-118.5	530.6	513.7	16.95	31.305	
4,200.0	4,188.0	4,162.5	4,157.2	10.1	7.4	78.85	-618.3	-115.1	531.1	513.7	17.43	30.477	
4,300.0	4,287.5	4,263.3	4,257.9	10.4	7.6	79.30	-623.2	-111.8	531.6	513.7	17.91	29.676	
4,400.0	4,387.0	4,364.4	4,358.9	10.7	7.8	79.78	-627.9	-108.7	531.9	513.5	18.41	28.898	
4,500.0	4,486.5	4,466.2	4,460.6	11.0	8.0	80.30	-632.2	-105.6	531.9	513.0	18.90	28.137	
4,600.0	4,586.1	4,566.5	4,560.8	11.2	8.2	80.90	-635.7	-103.0	531.7	512.3	19.40	27.402	
4,700.0	4,685.6	4,666.4	4,660.5	11.5	8.4	81.56	-638.8	-100.9	531.6	511.7	19.90	26.706	
4,800.0	4,785.1	4,767.8	4,761.9	11.8	8.6	82.30	-641.6	-99.3	531.4	511.0	20.41	26.033	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peterson 14X-434
Project:	SEC.14-T5N-R64W	**TVD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peterson 14X-434	**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 (9-12-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Peterson 14WX-HZ Pad (Exist) Sec.14-T5N-R64W - Peterson 14-1 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 100-NS-GYRO-MS

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
4,900.0	4,884.6	4,866.4	4,860.4	12.1	8.9	83.06	-643.9	-97.9	531.1	510.2	20.91	25.396	
4,902.4	4,887.1	4,868.8	4,862.8	12.1	8.9	83.08	-643.9	-97.8	531.1	510.2	20.93	25.381	
5,000.0	4,984.2	4,964.8	4,958.8	12.4	9.1	83.92	-645.9	-97.4	531.3	509.9	21.41	24.820	
5,100.0	5,083.7	5,065.6	5,059.6	12.7	9.3	84.86	-647.6	-97.4	531.7	509.8	21.90	24.278	
5,200.0	5,183.2	5,167.8	5,161.8	13.0	9.5	85.85	-648.8	-97.4	531.8	509.4	22.40	23.743	
5,237.1	5,220.1	5,205.6	5,199.6	13.1	9.5	86.23	-649.1	-97.4	531.8	509.2	22.58	23.546	
5,265.1	5,248.0	5,233.1	5,227.1	13.1	9.6	86.48	-649.3	-97.3	531.7	509.0	22.71	23.410	
5,300.0	5,282.8	5,267.5	5,261.5	13.2	9.7	86.75	-649.6	-97.2	531.8	508.9	22.88	23.245	
5,400.0	5,382.6	5,361.7	5,355.7	13.4	9.9	87.24	-651.1	-97.0	532.5	509.2	23.27	22.878	
5,500.0	5,482.6	5,460.1	5,454.1	13.6	10.0	87.46	-653.0	-97.9	534.4	510.8	23.63	22.613	
5,517.4	5,500.0	5,478.1	5,472.0	13.6	10.1	-137.94	-653.3	-98.2	534.7	512.8	21.94	24.377	
5,600.0	5,582.6	5,560.1	5,554.1	13.8	10.2	-137.91	-654.2	-99.4	536.3	514.0	22.23	24.125	
5,700.0	5,682.6	5,656.2	5,650.1	14.0	10.3	-137.79	-655.0	-101.7	538.5	515.9	22.57	23.863	
5,800.0	5,782.6	5,755.7	5,749.6	14.1	10.5	-137.68	-656.5	-104.4	541.5	518.5	22.92	23.628	
5,894.1	5,876.6	5,851.7	5,845.6	14.3	10.6	-137.60	-657.8	-106.6	543.8	520.6	23.26	23.384	
5,900.0	5,882.6	5,857.7	5,851.5	14.3	10.7	-47.59	-657.9	-106.7	543.9	519.0	24.95	21.803	
5,950.0	5,932.5	5,907.7	5,901.6	14.4	10.7	-47.72	-658.5	-107.8	543.8	518.7	25.07	21.688	
6,000.0	5,982.2	5,956.8	5,950.6	14.4	10.8	-48.20	-659.0	-109.0	541.4	516.3	25.14	21.537	
6,050.0	6,031.5	6,005.6	5,999.3	14.5	10.9	-49.06	-659.7	-110.2	537.1	511.9	25.16	21.348	
6,100.0	6,080.1	6,054.7	6,048.5	14.5	11.0	-50.33	-660.3	-111.4	530.7	505.5	25.14	21.111	
6,150.0	6,127.8	6,103.0	6,096.7	14.5	11.1	-52.00	-660.9	-112.6	522.3	497.2	25.09	20.820	
6,200.0	6,174.5	6,149.4	6,143.2	14.6	11.1	-54.05	-661.4	-113.8	512.3	487.3	25.03	20.468	
6,250.0	6,219.8	6,194.7	6,188.4	14.6	11.2	-56.52	-662.0	-115.0	501.0	476.0	24.99	20.049	
6,300.0	6,263.7	6,239.4	6,233.0	14.6	11.3	-59.43	-662.6	-116.3	488.5	463.5	24.98	19.555	
6,350.0	6,306.0	6,282.5	6,276.2	14.6	11.4	-62.74	-663.1	-117.5	475.3	450.2	25.03	18.986	
6,400.0	6,346.4	6,300.0	6,293.7	14.6	11.4	-64.74	-663.3	-117.9	462.3	437.3	25.05	18.457	
6,450.0	6,384.8	6,300.0	6,293.7	14.6	11.4	-65.40	-663.3	-117.9	452.8	427.8	25.03	18.090	
6,500.0	6,421.0	6,300.0	6,293.7	14.7	11.4	-65.78	-663.3	-117.9	447.4	422.3	25.05	17.858	
6,539.6	6,448.1	6,300.0	6,293.7	14.7	11.4	-65.87	-663.3	-117.9	446.0	420.9	25.10	17.768	CC, ES
6,550.0	6,454.9	6,300.0	6,293.7	14.7	11.4	-65.86	-663.3	-117.9	446.1	421.0	25.11	17.763	SF
6,600.0	6,486.3	6,300.0	6,293.7	14.9	11.4	-65.65	-663.3	-117.9	449.1	423.9	25.22	17.807	
6,650.0	6,515.1	6,300.0	6,293.7	15.2	11.4	-65.16	-663.3	-117.9	456.3	430.9	25.37	17.984	
6,700.0	6,541.2	6,300.0	6,293.7	15.6	11.4	-64.39	-663.3	-117.9	467.4	441.8	25.56	18.285	
6,750.0	6,564.4	6,300.0	6,293.7	16.2	11.4	-63.35	-663.3	-117.9	482.1	456.3	25.78	18.698	
6,800.0	6,584.7	6,300.0	6,293.7	16.8	11.4	-62.07	-663.3	-117.9	500.0	474.0	26.03	19.211	
6,850.0	6,601.9	6,300.0	6,293.7	17.6	11.4	-60.56	-663.3	-117.9	520.8	494.5	26.29	19.813	
6,900.0	6,616.1	6,300.0	6,293.7	18.4	11.4	-58.87	-663.3	-117.9	544.0	517.5	26.55	20.493	
6,950.0	6,627.0	6,300.0	6,293.7	19.2	11.4	-57.01	-663.3	-117.9	569.3	542.5	26.80	21.241	
7,000.0	6,634.8	6,300.0	6,293.7	20.2	11.4	-55.02	-663.3	-117.9	596.2	569.2	27.04	22.050	
7,050.0	6,639.3	6,300.0	6,293.7	21.1	11.4	-52.94	-663.3	-117.9	624.5	597.2	27.26	22.910	
7,085.0	6,640.5	6,300.0	6,293.7	21.9	11.4	-51.45	-663.3	-117.9	644.9	617.5	27.40	23.537	
7,100.0	6,640.7	6,300.0	6,293.7	22.2	11.4	-51.45	-663.3	-117.9	653.9	626.2	27.64	23.656	
7,200.0	6,641.9	6,300.0	6,293.7	24.3	11.4	-51.45	-663.3	-117.9	718.8	689.5	29.32	24.514	
7,300.0	6,643.1	6,300.0	6,293.7	26.6	11.4	-51.45	-663.3	-117.9	791.1	760.0	31.11	25.434	
7,400.0	6,644.3	6,300.0	6,293.7	28.9	11.4	-51.45	-663.3	-117.9	868.9	836.0	32.97	26.359	
7,500.0	6,645.5	6,300.0	6,293.7	31.4	11.4	-51.45	-663.3	-117.9	950.9	916.0	34.89	27.257	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peterson 14X-434
Project:	SEC.14-T5N-R64W	**TVD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peterson 14X-434	**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 (9-12-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Peterson 14WX-HZ Pad (Exist) Sec.14-T5N-R64W - Peterson 5 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 100-NS-GYRO-MS

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
6,500.0	6,421.0	6,455.1	6,451.2	14.7	12.6	-8.33	-353.3	-956.8	994.5	974.1	20.38	48.801	
6,550.0	6,454.9	6,487.8	6,483.8	14.7	12.7	-9.41	-354.0	-955.3	956.5	936.9	19.57	48.870	
6,600.0	6,486.3	6,517.5	6,513.5	14.9	12.7	-10.77	-354.5	-953.9	916.4	897.7	18.79	48.769	
6,650.0	6,515.1	6,544.3	6,540.4	15.2	12.8	-12.50	-354.9	-952.7	874.6	856.5	18.10	48.328	
6,700.0	6,541.2	6,568.4	6,564.4	15.6	12.8	-14.78	-355.3	-951.6	831.1	813.6	17.58	47.267	
6,750.0	6,564.4	6,589.6	6,585.5	16.2	12.9	-17.84	-355.6	-950.6	786.2	768.8	17.40	45.174	
6,800.0	6,584.7	6,607.4	6,603.3	16.8	12.9	-22.04	-355.8	-949.8	740.1	722.3	17.80	41.577	
6,850.0	6,601.9	6,621.8	6,617.7	17.6	12.9	-27.97	-356.0	-949.1	693.0	673.8	19.13	36.225	
6,900.0	6,616.1	6,632.0	6,627.9	18.4	13.0	-36.31	-356.2	-948.7	645.0	623.3	21.74	29.665	
6,950.0	6,627.0	6,632.0	6,627.9	19.2	13.0	-45.97	-356.2	-948.7	596.6	571.4	25.14	23.728	
7,000.0	6,634.8	6,632.0	6,627.9	20.2	13.0	-58.98	-356.2	-948.7	547.8	518.4	29.40	18.630	
7,050.0	6,639.3	6,632.0	6,627.9	21.1	13.0	-75.10	-356.2	-948.7	498.9	465.7	33.25	15.005	
7,085.0	6,640.5	6,632.0	6,627.9	21.9	13.0	-87.13	-356.2	-948.7	464.7	429.9	34.74	13.377	
7,100.0	6,640.7	6,632.0	6,627.9	22.2	13.0	-87.13	-356.2	-948.7	450.0	415.0	35.05	12.842	
7,200.0	6,641.9	6,632.0	6,627.9	24.3	13.0	-87.13	-356.2	-948.7	353.3	316.1	37.18	9.500	
7,300.0	6,643.1	6,632.0	6,627.9	26.6	13.0	-87.13	-356.2	-948.7	258.9	219.5	39.44	6.564	
7,400.0	6,644.3	6,632.0	6,627.9	28.9	13.0	-87.13	-356.2	-948.7	171.1	129.3	41.80	4.093	
7,500.0	6,645.5	6,632.0	6,627.9	31.4	13.0	-87.13	-356.2	-948.7	107.3	63.1	44.23	2.426	
7,538.8	6,645.9	6,632.0	6,627.9	32.3	13.0	-87.13	-356.2	-948.7	100.0	54.8	45.20	2.213	CC, ES, SF
7,600.0	6,646.6	6,632.0	6,627.9	33.9	13.0	-87.13	-356.2	-948.7	117.3	70.6	46.72	2.510	
7,700.0	6,647.8	6,629.9	6,625.8	36.4	13.0	-85.93	-356.2	-948.8	189.7	140.5	49.22	3.855	
7,800.0	6,649.0	6,626.7	6,622.6	39.0	12.9	-84.11	-356.1	-948.9	279.7	228.0	51.68	5.412	
7,900.0	6,650.2	6,623.5	6,619.4	41.6	12.9	-82.28	-356.1	-949.1	374.7	320.6	54.10	6.926	
8,000.0	6,651.4	6,620.2	6,616.2	44.2	12.9	-80.45	-356.0	-949.2	471.8	415.3	56.48	8.353	
8,100.0	6,652.6	6,616.9	6,612.9	46.9	12.9	-78.63	-355.9	-949.4	569.9	511.1	58.80	9.692	
8,200.0	6,653.8	6,613.6	6,609.6	49.5	12.9	-76.81	-355.9	-949.5	668.5	607.4	61.05	10.950	
8,300.0	6,655.0	6,610.3	6,606.3	52.2	12.9	-75.00	-355.8	-949.7	767.5	704.2	63.23	12.138	
8,400.0	6,656.1	6,607.0	6,602.9	54.9	12.9	-73.21	-355.8	-949.8	866.6	801.3	65.32	13.268	
8,500.0	6,657.3	6,603.6	6,599.5	57.6	12.9	-71.44	-355.7	-950.0	966.0	898.7	67.33	14.348	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peterson 14X-434
Project:	SEC.14-T5N-R64W	**TVD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peterson 14X-434	**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 (9-12-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14W-234 - Wellbore #1 - Plan #2 (9-12-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.00	91.1	0.0	91.1				
100.0	100.0	100.0	100.0	0.1	0.1	0.00	91.1	0.0	91.1	90.9	0.22	405.212	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	91.1	0.0	91.1	90.4	0.67	135.071	
300.0	300.0	300.0	300.0	0.6	0.6	0.00	91.1	0.0	91.1	90.0	1.12	81.042	
400.0	400.0	400.0	400.0	0.8	0.8	0.00	91.1	0.0	91.1	89.5	1.57	57.887	
500.0	500.0	500.0	500.0	1.0	1.0	0.00	91.1	0.0	91.1	89.1	2.02	45.024	
600.0	600.0	600.0	600.0	1.2	1.2	0.00	91.1	0.0	91.1	88.6	2.47	36.837	
700.0	700.0	700.0	700.0	1.5	1.5	0.00	91.1	0.0	91.1	88.2	2.92	31.170	
800.0	800.0	800.0	800.0	1.7	1.7	0.00	91.1	0.0	91.1	87.7	3.37	27.014	
900.0	900.0	900.0	900.0	1.9	1.9	0.00	91.1	0.0	91.1	87.3	3.82	23.836	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	0.00	91.1	0.0	91.1	86.8	4.27	21.327	CC, ES
1,100.0	1,100.0	1,097.1	1,097.1	2.4	2.4	0.41	92.6	0.7	92.6	87.9	4.71	19.656	
1,200.0	1,200.0	1,194.1	1,193.9	2.6	2.6	1.57	97.1	2.7	97.3	92.2	5.16	18.877	
1,300.0	1,300.0	1,290.5	1,290.0	2.8	2.8	3.26	104.5	5.9	105.2	99.6	5.60	18.786	
1,400.0	1,400.0	1,386.3	1,385.2	3.0	3.0	5.23	114.9	10.5	116.3	110.3	6.05	19.236	
1,500.0	1,500.0	1,483.1	1,480.9	3.3	3.3	7.25	128.0	16.3	130.4	123.9	6.50	20.056	
1,600.0	1,600.0	1,581.8	1,578.4	3.5	3.6	-125.92	141.8	22.4	146.1	139.2	6.94	21.065	
1,700.0	1,699.8	1,680.2	1,675.7	3.6	3.8	-125.71	155.5	28.5	163.9	156.6	7.35	22.305	
1,780.3	1,779.9	1,758.9	1,753.4	3.8	4.1	-126.16	166.5	33.3	179.7	172.0	7.69	23.378	
1,800.0	1,799.5	1,778.2	1,772.5	3.8	4.1	-126.39	169.2	34.5	183.7	175.9	7.77	23.640	
1,900.0	1,899.0	1,876.0	1,869.2	4.0	4.4	-127.41	182.9	40.6	204.2	196.0	8.21	24.871	
2,000.0	1,998.5	1,973.8	1,965.8	4.3	4.8	-128.24	196.6	46.6	224.7	216.1	8.66	25.956	
2,100.0	2,098.0	2,071.7	2,062.5	4.5	5.1	-128.94	210.3	52.6	245.3	236.2	9.11	26.912	
2,200.0	2,197.5	2,169.5	2,159.2	4.7	5.4	-129.52	224.0	58.7	265.9	256.3	9.58	27.758	
2,300.0	2,297.1	2,267.3	2,255.9	5.0	5.7	-130.02	237.6	64.7	286.5	276.5	10.05	28.510	
2,400.0	2,396.6	2,365.1	2,352.5	5.2	6.1	-130.46	251.3	70.8	307.1	296.6	10.53	29.181	
2,500.0	2,496.1	2,463.0	2,449.2	5.5	6.4	-130.84	265.0	76.8	327.8	316.8	11.01	29.783	
2,600.0	2,595.6	2,560.8	2,545.9	5.7	6.7	-131.17	278.7	82.9	348.5	337.0	11.49	30.324	
2,700.0	2,695.2	2,658.6	2,642.5	6.0	7.0	-131.47	292.4	88.9	369.1	357.2	11.98	30.813	
2,800.0	2,794.7	2,756.4	2,739.2	6.2	7.4	-131.73	306.1	94.9	389.8	377.4	12.47	31.257	
2,900.0	2,894.2	2,854.2	2,835.9	6.5	7.7	-131.97	319.7	101.0	410.5	397.6	12.97	31.660	
3,000.0	2,993.7	2,952.1	2,932.6	6.8	8.1	-132.19	333.4	107.0	431.2	417.8	13.46	32.029	
3,100.0	3,093.2	3,049.9	3,029.2	7.0	8.4	-132.39	347.1	113.1	451.9	438.0	13.96	32.366	
3,200.0	3,192.8	3,147.7	3,125.9	7.3	8.7	-132.56	360.8	119.1	472.6	458.2	14.46	32.676	
3,300.0	3,292.3	3,245.5	3,222.6	7.6	9.1	-132.73	374.5	125.2	493.4	478.4	14.97	32.961	
3,400.0	3,391.8	3,343.3	3,319.2	7.9	9.4	-132.88	388.2	131.2	514.1	498.6	15.47	33.224	
3,500.0	3,491.3	3,441.2	3,415.9	8.1	9.8	-133.02	401.8	137.2	534.8	518.8	15.98	33.468	
3,600.0	3,590.8	3,539.0	3,512.6	8.4	10.1	-133.15	415.5	143.3	555.5	539.0	16.49	33.694	
3,700.0	3,690.4	3,636.8	3,609.3	8.7	10.5	-133.27	429.2	149.3	576.2	559.2	17.00	33.905	
3,800.0	3,789.9	3,734.6	3,705.9	9.0	10.8	-133.38	442.9	155.4	597.0	579.5	17.51	34.101	
3,900.0	3,889.4	3,832.5	3,802.6	9.3	11.1	-133.48	456.6	161.4	617.7	599.7	18.02	34.284	
4,000.0	3,988.9	3,930.3	3,899.3	9.5	11.5	-133.58	470.2	167.5	638.4	619.9	18.53	34.456	
4,100.0	4,088.5	4,028.1	3,995.9	9.8	11.8	-133.67	483.9	173.5	659.2	640.1	19.04	34.616	
4,200.0	4,188.0	4,125.9	4,092.6	10.1	12.2	-133.75	497.6	179.5	679.9	660.3	19.56	34.767	
4,300.0	4,287.5	4,223.7	4,189.3	10.4	12.5	-133.83	511.3	185.6	700.6	680.6	20.07	34.909	
4,400.0	4,387.0	4,321.6	4,286.0	10.7	12.9	-133.91	525.0	191.6	721.4	700.8	20.59	35.043	
4,500.0	4,486.5	4,419.4	4,382.6	11.0	13.2	-133.98	538.7	197.7	742.1	721.0	21.10	35.169	
4,600.0	4,586.1	4,517.2	4,479.3	11.2	13.6	-134.05	552.3	203.7	762.8	741.2	21.62	35.288	
4,700.0	4,685.6	4,615.0	4,576.0	11.5	13.9	-134.11	566.0	209.8	783.6	761.4	22.13	35.401	
4,800.0	4,785.1	4,712.9	4,672.6	11.8	14.3	-134.17	579.7	215.8	804.3	781.7	22.65	35.508	
4,900.0	4,884.6	4,810.7	4,769.3	12.1	14.6	-134.23	593.4	221.8	825.1	801.9	23.17	35.609	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peterson 14X-434
Project:	SEC.14-T5N-R64W	**TVD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peterson 14X-434	**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 (9-12-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14W-234 - Wellbore #1 - Plan #2 (9-12-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,984.2	4,908.5	4,866.0	12.4	15.0	-134.29	607.1	227.9	845.8	822.1	23.69	35.705	
5,100.0	5,083.7	5,006.3	4,962.7	12.7	15.3	-134.34	620.8	233.9	866.5	842.3	24.21	35.797	
5,200.0	5,183.2	5,104.1	5,059.3	13.0	15.7	-134.39	634.4	240.0	887.3	862.6	24.73	35.884	
5,237.1	5,220.1	5,140.5	5,095.2	13.1	15.8	-134.41	639.5	242.2	895.0	870.1	24.92	35.915	
5,300.0	5,282.8	5,202.1	5,156.1	13.2	16.0	-134.59	648.1	246.0	907.6	882.3	25.27	35.921	
5,400.0	5,382.6	5,339.0	5,291.9	13.4	16.4	-134.71	664.6	253.3	923.7	897.9	25.81	35.789	
5,500.0	5,482.6	5,480.5	5,432.8	13.6	16.7	-134.69	675.3	258.0	932.9	906.6	26.28	35.501	
5,517.4	5,500.0	5,505.2	5,457.5	13.6	16.7	-0.09	676.5	258.6	933.8	904.9	28.94	32.263	
5,600.0	5,582.6	5,622.9	5,575.1	13.8	16.9	0.00	679.7	260.0	936.0	906.7	29.29	31.959	
5,700.0	5,682.6	5,730.3	5,682.6	14.0	17.1	0.00	679.8	260.0	936.1	906.4	29.63	31.590	
5,800.0	5,782.6	5,830.4	5,782.6	14.1	17.2	-0.03	679.8	259.6	936.1	906.1	29.97	31.229	
5,817.6	5,800.2	5,848.0	5,800.2	14.2	17.3	-0.08	679.8	258.8	936.1	906.0	30.03	31.169	
5,894.1	5,876.6	5,923.6	5,875.4	14.3	17.3	-0.57	679.8	250.7	936.1	905.8	30.27	30.925	
5,900.0	5,882.6	5,929.4	5,881.1	14.3	17.3	89.38	679.8	249.8	936.1	908.3	27.78	33.693	
5,950.0	5,932.5	5,978.0	5,928.7	14.4	17.4	88.91	679.8	240.4	936.2	908.3	27.91	33.539	
6,000.0	5,982.2	6,026.1	5,975.2	14.4	17.4	88.45	679.7	228.0	936.4	908.4	28.02	33.421	
6,050.0	6,031.5	6,073.7	6,020.4	14.5	17.4	88.00	679.7	213.0	936.6	908.5	28.10	33.332	
6,100.0	6,080.1	6,121.0	6,064.2	14.5	17.4	87.55	679.7	195.3	936.9	908.7	28.16	33.264	
6,150.0	6,127.8	6,167.9	6,106.5	14.5	17.4	87.12	679.7	175.1	937.2	909.0	28.22	33.207	
6,200.0	6,174.5	6,214.3	6,147.2	14.6	17.4	86.70	679.7	152.6	937.5	909.2	28.28	33.149	
6,250.0	6,219.8	6,260.5	6,186.1	14.6	17.4	86.30	679.6	127.8	937.9	909.5	28.36	33.076	
6,300.0	6,263.7	6,306.3	6,223.2	14.6	17.4	85.91	679.6	101.0	938.3	909.9	28.46	32.970	
6,350.0	6,306.0	6,350.0	6,257.0	14.6	17.4	85.55	679.6	73.3	938.7	910.1	28.60	32.821	
6,400.0	6,346.4	6,396.9	6,291.5	14.6	17.4	85.19	679.5	41.4	939.2	910.3	28.82	32.590	
6,450.0	6,384.8	6,441.9	6,322.6	14.6	17.4	84.86	679.5	9.1	939.6	910.5	29.11	32.276	
6,500.0	6,421.0	6,486.5	6,351.6	14.7	17.4	84.54	679.4	-24.9	940.0	910.5	29.50	31.862	
6,550.0	6,454.9	6,531.0	6,378.5	14.7	17.4	84.25	679.4	-60.3	940.5	910.4	30.02	31.333	
6,600.0	6,486.3	6,575.2	6,403.1	14.9	17.5	83.99	679.4	-97.0	940.9	910.2	30.65	30.698	
6,650.0	6,515.1	6,619.3	6,425.5	15.2	17.6	83.74	679.3	-135.0	941.3	909.8	31.42	29.954	
6,700.0	6,541.2	6,663.1	6,445.6	15.6	17.8	83.52	679.3	-174.0	941.6	909.3	32.34	29.113	
6,750.0	6,564.4	6,706.9	6,463.3	16.2	18.1	83.32	679.2	-214.0	941.9	908.5	33.41	28.191	
6,800.0	6,584.7	6,750.0	6,478.6	16.8	18.6	83.15	679.2	-254.3	942.2	907.6	34.62	27.215	
6,850.0	6,601.9	6,794.0	6,491.7	17.6	19.2	83.01	679.1	-296.2	942.4	906.5	35.99	26.185	
6,900.0	6,616.1	6,837.4	6,502.3	18.4	19.9	82.89	679.1	-338.3	942.6	905.1	37.49	25.145	
6,950.0	6,627.0	6,880.7	6,510.5	19.2	20.6	82.80	679.0	-380.8	942.8	903.7	39.10	24.112	
7,000.0	6,634.8	6,924.0	6,516.3	20.2	21.4	82.73	679.0	-423.7	942.9	902.0	40.81	23.102	
7,050.0	6,639.3	6,967.2	6,519.6	21.1	22.2	82.69	678.9	-466.8	942.9	900.3	42.61	22.126	
7,085.0	6,640.5	6,997.4	6,520.5	21.9	22.8	82.68	678.9	-497.1	942.9	899.0	43.92	21.470	
7,100.0	6,640.7	7,011.8	6,520.5	22.2	23.1	82.68	678.9	-511.5	942.9	898.4	44.51	21.181	
7,200.0	6,641.9	7,111.8	6,520.9	24.3	25.1	82.63	678.8	-611.4	942.8	894.1	48.71	19.355	
7,300.0	6,643.1	7,211.8	6,521.3	26.6	27.4	82.58	678.6	-711.4	942.8	889.7	53.17	17.734	
7,400.0	6,644.3	7,311.8	6,521.7	28.9	29.7	82.53	678.5	-811.4	942.8	885.0	57.81	16.308	
7,500.0	6,645.5	7,411.8	6,522.1	31.4	32.0	82.48	678.4	-911.4	942.8	880.2	62.61	15.059	
7,600.0	6,646.6	7,511.8	6,522.6	33.9	34.5	82.44	678.3	-1,011.4	942.8	875.3	67.52	13.963	
7,700.0	6,647.8	7,611.8	6,523.0	36.4	37.0	82.39	678.2	-1,111.4	942.8	870.3	72.53	12.999	
7,800.0	6,649.0	7,711.8	6,523.4	39.0	39.5	82.34	678.1	-1,211.4	942.8	865.2	77.61	12.147	
7,900.0	6,650.2	7,811.8	6,523.8	41.6	42.1	82.29	677.9	-1,311.4	942.8	860.0	82.76	11.392	
8,000.0	6,651.4	7,911.8	6,524.2	44.2	44.7	82.24	677.8	-1,411.4	942.7	854.8	87.95	10.719	
8,100.0	6,652.6	8,011.8	6,524.6	46.9	47.3	82.19	677.7	-1,511.4	942.7	849.6	93.19	10.117	
8,200.0	6,653.8	8,111.8	6,525.0	49.5	50.0	82.15	677.6	-1,611.4	942.7	844.3	98.46	9.575	
8,300.0	6,655.0	8,211.8	6,525.4	52.2	52.6	82.10	677.5	-1,711.4	942.7	839.0	103.76	9.086	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peterson 14X-434
Project:	SEC.14-T5N-R64W	**TVD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peterson 14X-434	**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 (9-12-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14W-234 - Wellbore #1 - Plan #2 (9-12-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,400.0	6,656.1	8,311.8	6,525.8	54.9	55.3	82.05	677.4	-1,811.4	942.7	833.6	109.08	8.642	
8,500.0	6,657.3	8,411.8	6,526.2	57.6	58.0	82.00	677.2	-1,911.4	942.7	828.3	114.43	8.239	
8,600.0	6,658.5	8,511.8	6,526.6	60.3	60.7	81.95	677.1	-2,011.4	942.7	822.9	119.79	7.870	
8,700.0	6,659.7	8,611.8	6,527.0	63.1	63.4	81.91	677.0	-2,111.4	942.7	817.5	125.17	7.531	
8,800.0	6,660.9	8,711.8	6,527.4	65.8	66.1	81.86	676.9	-2,211.4	942.7	812.1	130.56	7.220	
8,900.0	6,662.1	8,811.8	6,527.8	68.5	68.8	81.81	676.8	-2,311.4	942.7	806.7	135.97	6.933	
9,000.0	6,663.3	8,911.8	6,528.2	71.3	71.6	81.76	676.7	-2,411.4	942.7	801.3	141.38	6.668	
9,100.0	6,664.4	9,011.8	6,528.6	74.0	74.3	81.71	676.5	-2,511.4	942.7	795.9	146.81	6.421	
9,200.0	6,665.6	9,111.8	6,529.0	76.8	77.0	81.66	676.4	-2,611.4	942.7	790.4	152.24	6.192	
9,300.0	6,666.8	9,211.8	6,529.4	79.5	79.8	81.62	676.3	-2,711.4	942.7	785.0	157.67	5.979	
9,400.0	6,668.0	9,311.8	6,529.8	82.3	82.5	81.57	676.2	-2,811.4	942.7	779.6	163.12	5.779	
9,484.0	6,669.0	9,395.8	6,530.1	84.6	84.9	81.53	676.1	-2,895.4	942.7	775.0	167.70	5.621	
9,500.0	6,669.2	9,411.8	6,530.2	85.0	85.3	81.52	676.1	-2,911.4	942.7	774.1	168.57	5.592	
9,600.0	6,670.4	9,511.8	6,530.6	87.8	88.1	81.47	676.0	-3,011.4	942.7	768.7	174.02	5.417	
9,700.0	6,671.6	9,611.8	6,531.0	90.6	90.8	81.42	675.8	-3,111.3	942.7	763.2	179.48	5.252	
9,800.0	6,672.8	9,711.7	6,531.4	93.4	93.6	81.37	675.7	-3,211.3	942.7	757.7	184.94	5.097	
9,900.0	6,673.9	9,811.7	6,531.8	96.1	96.3	81.33	675.6	-3,311.3	942.7	752.3	190.41	4.951	
10,000.0	6,675.1	9,911.7	6,532.2	98.9	99.1	81.28	675.5	-3,411.3	942.7	746.8	195.88	4.813	
10,100.0	6,676.3	10,011.7	6,532.6	101.7	101.9	81.23	675.4	-3,511.3	942.7	741.3	201.35	4.682	
10,200.0	6,677.5	10,111.7	6,533.0	104.5	104.7	81.18	675.2	-3,611.3	942.7	735.9	206.82	4.558	
10,300.0	6,678.7	10,211.7	6,533.4	107.2	107.4	81.13	675.1	-3,711.3	942.7	730.4	212.29	4.441	
10,400.0	6,679.9	10,311.7	6,533.8	110.0	110.2	81.08	675.0	-3,811.3	942.7	724.9	217.77	4.329	
10,500.0	6,681.1	10,411.7	6,534.2	112.8	113.0	81.04	674.9	-3,911.3	942.7	719.5	223.24	4.223	
10,600.0	6,682.2	10,511.7	6,534.6	115.6	115.8	80.99	674.8	-4,011.3	942.7	714.0	228.72	4.122	
10,700.0	6,683.4	10,611.7	6,535.0	118.4	118.5	80.94	674.7	-4,111.3	942.7	708.5	234.20	4.025	
10,800.0	6,684.6	10,711.7	6,535.4	121.2	121.3	80.89	674.5	-4,211.3	942.7	703.1	239.68	3.933	
10,900.0	6,685.8	10,811.7	6,535.8	123.9	124.1	80.84	674.4	-4,311.3	942.7	697.6	245.16	3.845	
10,916.2	6,686.0	10,827.9	6,535.9	124.2	124.6	80.84	674.4	-4,327.5	942.7	696.9	245.89	3.834	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peterson 14X-434
Project:	SEC.14-T5N-R64W	**TVD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peterson 14X-434	**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 (9-12-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14W-434 - Wellbore #1 - Plan #1 (9-12-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.00	120.2	0.0	120.2				
100.0	100.0	100.0	100.0	0.1	0.1	0.00	120.2	0.0	120.2	120.0	0.22	534.880	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	120.2	0.0	120.2	119.5	0.67	178.293	
300.0	300.0	300.0	300.0	0.6	0.6	0.00	120.2	0.0	120.2	119.1	1.12	106.976	
400.0	400.0	400.0	400.0	0.8	0.8	0.00	120.2	0.0	120.2	118.6	1.57	76.411	
500.0	500.0	500.0	500.0	1.0	1.0	0.00	120.2	0.0	120.2	118.2	2.02	59.431	
600.0	600.0	600.0	600.0	1.2	1.2	0.00	120.2	0.0	120.2	117.8	2.47	48.625	
700.0	700.0	700.0	700.0	1.5	1.5	0.00	120.2	0.0	120.2	117.3	2.92	41.145	
800.0	800.0	800.0	800.0	1.7	1.7	0.00	120.2	0.0	120.2	116.9	3.37	35.659	CC, ES
900.0	900.0	896.1	896.1	1.9	1.9	0.21	121.8	0.5	121.8	118.0	3.81	31.962	
1,000.0	1,000.0	992.0	991.8	2.1	2.1	0.82	126.4	1.8	126.7	122.4	4.25	29.778	
1,100.0	1,100.0	1,087.4	1,086.9	2.4	2.3	1.74	134.0	4.1	134.7	130.0	4.70	28.681	
1,200.0	1,200.0	1,182.2	1,181.1	2.6	2.6	2.85	144.6	7.2	146.1	140.9	5.15	28.377	SF
1,300.0	1,300.0	1,276.2	1,274.0	2.8	2.8	4.04	158.1	11.2	160.6	155.0	5.60	28.665	
1,400.0	1,400.0	1,369.2	1,365.4	3.0	3.1	5.22	174.3	15.9	178.4	172.3	6.07	29.389	
1,500.0	1,500.0	1,465.9	1,460.1	3.3	3.4	6.35	193.1	21.5	198.4	191.8	6.56	30.241	
1,600.0	1,600.0	1,563.6	1,555.7	3.5	3.8	-127.33	212.3	27.1	219.6	212.6	6.95	31.614	
1,700.0	1,699.8	1,660.8	1,650.9	3.6	4.1	-127.16	231.3	32.8	242.8	235.5	7.36	32.990	
1,780.3	1,779.9	1,738.5	1,727.0	3.8	4.4	-127.42	246.5	37.2	263.0	255.3	7.70	34.153	
1,800.0	1,799.5	1,757.5	1,745.6	3.8	4.5	-127.60	250.3	38.3	268.1	260.3	7.79	34.433	
1,900.0	1,899.0	1,854.0	1,840.0	4.0	4.9	-128.42	269.2	43.9	294.1	285.9	8.23	35.739	
2,000.0	1,998.5	1,950.5	1,934.5	4.3	5.3	-129.10	288.1	49.5	320.2	311.5	8.68	36.872	
2,100.0	2,098.0	2,046.9	2,028.9	4.5	5.7	-129.68	306.9	55.0	346.2	337.1	9.15	37.860	
2,200.0	2,197.5	2,143.4	2,123.4	4.7	6.1	-130.18	325.8	60.6	372.3	362.7	9.62	38.724	
2,300.0	2,297.1	2,239.9	2,217.9	5.0	6.5	-130.61	344.7	66.2	398.5	388.4	10.09	39.485	
2,400.0	2,396.6	2,336.4	2,312.3	5.2	6.9	-130.99	363.6	71.8	424.6	414.1	10.57	40.158	
2,500.0	2,496.1	2,432.9	2,406.8	5.5	7.3	-131.33	382.5	77.3	450.8	439.7	11.06	40.755	
2,600.0	2,595.6	2,529.4	2,501.2	5.7	7.7	-131.63	401.4	82.9	477.0	465.4	11.55	41.288	
2,700.0	2,695.2	2,625.9	2,595.7	6.0	8.1	-131.90	420.3	88.5	503.2	491.1	12.05	41.765	
2,800.0	2,794.7	2,722.3	2,690.1	6.2	8.5	-132.14	439.2	94.0	529.4	516.8	12.55	42.194	
2,900.0	2,894.2	2,818.8	2,784.6	6.5	8.9	-132.36	458.1	99.6	555.6	542.5	13.05	42.581	
3,000.0	2,993.7	2,915.3	2,879.0	6.8	9.3	-132.56	477.0	105.2	581.8	568.2	13.55	42.932	
3,100.0	3,093.2	3,011.8	2,973.5	7.0	9.7	-132.74	495.9	110.7	608.0	593.9	14.06	43.251	
3,200.0	3,192.8	3,108.3	3,067.9	7.3	10.2	-132.91	514.8	116.3	634.2	619.7	14.57	43.542	
3,300.0	3,292.3	3,204.8	3,162.4	7.6	10.6	-133.06	533.7	121.9	660.5	645.4	15.08	43.808	
3,400.0	3,391.8	3,301.2	3,256.8	7.9	11.0	-133.21	552.6	127.5	686.7	671.1	15.59	44.053	
3,500.0	3,491.3	3,397.7	3,351.3	8.1	11.4	-133.34	571.5	133.0	712.9	696.8	16.10	44.277	
3,600.0	3,590.8	3,494.2	3,445.7	8.4	11.8	-133.46	590.4	138.6	739.2	722.6	16.62	44.485	
3,700.0	3,690.4	3,590.7	3,540.2	8.7	12.2	-133.57	609.3	144.2	765.4	748.3	17.13	44.676	
3,800.0	3,789.9	3,687.2	3,634.6	9.0	12.6	-133.68	628.2	149.7	791.7	774.0	17.65	44.854	
3,900.0	3,889.4	3,783.7	3,729.1	9.3	13.1	-133.78	647.1	155.3	817.9	799.7	18.17	45.019	
4,000.0	3,988.9	3,880.1	3,823.5	9.5	13.5	-133.87	666.0	160.9	844.2	825.5	18.69	45.172	
4,100.0	4,088.5	3,976.6	3,918.0	9.8	13.9	-133.96	684.9	166.4	870.4	851.2	19.21	45.315	
4,200.0	4,188.0	4,073.1	4,012.4	10.1	14.3	-134.04	703.7	172.0	896.7	876.9	19.73	45.449	
4,300.0	4,287.5	4,169.6	4,106.9	10.4	14.7	-134.12	722.6	177.6	922.9	902.7	20.25	45.574	
4,400.0	4,387.0	4,266.1	4,201.3	10.7	15.2	-134.19	741.5	183.2	949.2	928.4	20.77	45.691	
4,500.0	4,486.5	4,362.6	4,295.8	11.0	15.6	-134.26	760.4	188.7	975.5	954.2	21.30	45.802	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peterson 14X-434
Project:	SEC.14-T5N-R64W	**TVD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peterson 14X-434	**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 (9-12-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14X-234 - Wellbore #1 - Plan #1 (9-12-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	174.54	-29.1	2.8	29.3				
100.0	100.0	100.0	100.0	0.1	0.1	174.54	-29.1	2.8	29.3	29.1	0.22	130.277	
200.0	200.0	200.0	200.0	0.3	0.3	174.54	-29.1	2.8	29.3	28.6	0.67	43.426	
300.0	300.0	300.0	300.0	0.6	0.6	174.54	-29.1	2.8	29.3	28.2	1.12	26.055	
400.0	400.0	400.0	400.0	0.8	0.8	174.54	-29.1	2.8	29.3	27.7	1.57	18.611	
500.0	500.0	500.0	500.0	1.0	1.0	174.54	-29.1	2.8	29.3	27.3	2.02	14.475	
600.0	600.0	600.0	600.0	1.2	1.2	174.54	-29.1	2.8	29.3	26.8	2.47	11.843	
700.0	700.0	700.0	700.0	1.5	1.5	174.54	-29.1	2.8	29.3	26.4	2.92	10.021	
800.0	800.0	800.0	800.0	1.7	1.7	174.54	-29.1	2.8	29.3	25.9	3.37	8.685	
900.0	900.0	900.0	900.0	1.9	1.9	174.54	-29.1	2.8	29.3	25.5	3.82	7.663	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	174.54	-29.1	2.8	29.3	25.0	4.27	6.857	CC, ES
1,100.0	1,100.0	1,099.0	1,099.0	2.4	2.3	173.71	-30.7	3.4	31.0	26.3	4.69	6.598	
1,200.0	1,200.0	1,197.7	1,197.6	2.6	2.5	171.67	-35.5	5.2	36.0	30.9	5.09	7.066	
1,300.0	1,300.0	1,296.0	1,295.5	2.8	2.7	169.31	-43.4	8.2	44.4	38.9	5.51	8.067	
1,400.0	1,400.0	1,393.6	1,392.4	3.0	2.9	167.21	-54.4	12.3	56.3	50.4	5.94	9.478	
1,500.0	1,500.0	1,490.3	1,487.9	3.3	3.2	165.54	-68.3	17.6	71.6	65.2	6.39	11.193	
1,600.0	1,600.0	1,588.5	1,584.6	3.5	3.4	30.13	-84.5	23.7	87.6	80.8	6.75	12.975	
1,700.0	1,699.8	1,687.6	1,682.1	3.6	3.7	30.52	-100.8	29.9	100.7	93.6	7.13	14.114	
1,780.3	1,779.9	1,767.5	1,760.7	3.8	4.0	31.46	-114.0	34.9	109.1	101.6	7.45	14.637	
1,800.0	1,799.5	1,787.1	1,780.0	3.8	4.1	31.76	-117.3	36.2	110.9	103.4	7.53	14.721	
1,900.0	1,899.0	1,886.6	1,878.0	4.0	4.4	33.15	-133.7	42.4	120.2	112.3	7.96	15.105	
2,000.0	1,998.5	1,986.1	1,975.9	4.3	4.8	34.34	-150.2	48.6	129.6	121.2	8.40	15.436	
2,100.0	2,098.0	2,085.6	2,073.9	4.5	5.1	35.37	-166.6	54.8	139.1	130.2	8.85	15.719	
2,200.0	2,197.5	2,185.2	2,171.9	4.7	5.5	36.27	-183.0	61.1	148.6	139.2	9.31	15.963	
2,300.0	2,297.1	2,284.7	2,269.8	5.0	5.8	37.06	-199.5	67.3	158.1	148.3	9.77	16.174	
2,400.0	2,396.6	2,384.2	2,367.8	5.2	6.2	37.76	-215.9	73.5	167.6	157.4	10.25	16.355	
2,500.0	2,496.1	2,483.7	2,465.7	5.5	6.6	38.38	-232.4	79.8	177.2	166.4	10.73	16.512	
2,600.0	2,595.6	2,583.3	2,563.7	5.7	7.0	38.94	-248.8	86.0	186.7	175.5	11.22	16.649	
2,700.0	2,695.2	2,682.8	2,661.7	6.0	7.4	39.45	-265.3	92.2	196.3	184.6	11.71	16.767	
2,800.0	2,794.7	2,782.3	2,759.6	6.2	7.8	39.91	-281.7	98.4	205.9	193.7	12.21	16.871	
2,900.0	2,894.2	2,881.8	2,857.6	6.5	8.2	40.33	-298.1	104.7	215.5	202.8	12.71	16.961	
3,000.0	2,993.7	2,981.4	2,955.5	6.8	8.5	40.71	-314.6	110.9	225.2	212.0	13.21	17.041	
3,100.0	3,093.2	3,080.9	3,053.5	7.0	8.9	41.06	-331.0	117.1	234.8	221.1	13.72	17.111	
3,200.0	3,192.8	3,180.4	3,151.5	7.3	9.3	41.38	-347.5	123.3	244.5	230.2	14.24	17.173	
3,300.0	3,292.3	3,279.9	3,249.4	7.6	9.7	41.68	-363.9	129.6	254.1	239.4	14.75	17.227	
3,400.0	3,391.8	3,379.5	3,347.4	7.9	10.1	41.96	-380.4	135.8	263.8	248.5	15.27	17.276	
3,500.0	3,491.3	3,479.0	3,445.3	8.1	10.5	42.22	-396.8	142.0	273.4	257.6	15.79	17.319	
3,600.0	3,590.8	3,578.5	3,543.3	8.4	10.9	42.46	-413.2	148.3	283.1	266.8	16.31	17.357	
3,700.0	3,690.4	3,678.0	3,641.3	8.7	11.3	42.68	-429.7	154.5	292.8	275.9	16.83	17.391	
3,800.0	3,789.9	3,777.6	3,739.2	9.0	11.7	42.89	-446.1	160.7	302.5	285.1	17.36	17.422	
3,900.0	3,889.4	3,877.1	3,837.2	9.3	12.1	43.09	-462.6	166.9	312.1	294.2	17.89	17.449	
4,000.0	3,988.9	3,976.6	3,935.1	9.5	12.5	43.27	-479.0	173.2	321.8	303.4	18.42	17.474	
4,100.0	4,088.5	4,076.1	4,033.1	9.8	12.9	43.45	-495.5	179.4	331.5	312.6	18.95	17.496	
4,200.0	4,188.0	4,175.7	4,131.0	10.1	13.3	43.61	-511.9	185.6	341.2	321.7	19.48	17.515	
4,300.0	4,287.5	4,275.2	4,229.0	10.4	13.7	43.77	-528.3	191.8	350.9	330.9	20.01	17.533	
4,400.0	4,387.0	4,374.7	4,327.0	10.7	14.1	43.91	-544.8	198.1	360.6	340.0	20.55	17.549	
4,500.0	4,486.5	4,474.2	4,424.9	11.0	14.5	44.05	-561.2	204.3	370.3	349.2	21.08	17.564	
4,600.0	4,586.1	4,573.8	4,522.9	11.2	14.9	44.18	-577.7	210.5	380.0	358.4	21.62	17.577	
4,700.0	4,685.6	4,673.3	4,620.8	11.5	15.3	44.31	-594.1	216.8	389.7	367.5	22.16	17.589	
4,800.0	4,785.1	4,772.8	4,718.8	11.8	15.8	44.43	-610.5	223.0	399.4	376.7	22.69	17.600	
4,900.0	4,884.6	4,872.3	4,816.8	12.1	16.2	44.54	-627.0	229.2	409.1	385.9	23.23	17.609	

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 Peterson 14X-434
Project:	SEC.14-T5N-R64W	**TVD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peterson 14X-434	**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 (9-12-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14X-234 - Wellbore #1 - Plan #1 (9-12-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,984.2	4,971.9	4,914.7	12.4	16.6	44.65	-643.4	235.4	418.8	395.0	23.77	17.618	
5,100.0	5,083.7	5,071.4	5,012.7	12.7	17.0	44.75	-659.9	241.7	428.5	404.2	24.31	17.626	
5,200.0	5,183.2	5,173.8	5,113.5	13.0	17.4	44.86	-676.7	248.0	438.2	413.3	24.86	17.629	
5,237.1	5,220.1	5,217.0	5,156.1	13.1	17.5	44.93	-683.3	250.5	441.3	416.2	25.06	17.608	
5,300.0	5,282.8	5,290.3	5,228.7	13.2	17.7	45.10	-693.0	254.2	445.8	420.5	25.37	17.570	
5,400.0	5,382.6	5,407.3	5,344.9	13.4	18.0	45.24	-705.0	258.8	452.0	426.2	25.80	17.516	
5,500.0	5,482.6	5,524.6	5,462.0	13.6	18.2	45.19	-712.5	261.6	456.7	430.6	26.17	17.453	
5,517.4	5,500.0	5,545.1	5,482.4	13.6	18.2	179.76	-713.4	261.9	457.4	427.0	30.47	15.012	
5,600.0	5,582.6	5,642.2	5,579.5	13.8	18.4	179.66	-715.6	262.8	459.3	428.5	30.78	14.921	
5,700.0	5,682.6	5,745.2	5,682.6	14.0	18.5	179.65	-715.6	262.8	459.4	428.3	31.10	14.770	
5,800.0	5,782.6	5,845.3	5,782.7	14.1	18.6	179.76	-715.6	261.9	459.4	428.0	31.40	14.630	
5,826.7	5,809.3	5,872.0	5,809.3	14.2	18.6	179.98	-715.6	260.2	459.4	427.9	31.46	14.599	
5,894.1	5,876.6	5,938.5	5,875.2	14.3	18.7	-178.98	-715.7	251.8	459.4	427.8	31.59	14.546	
5,900.0	5,882.6	5,944.3	5,880.9	14.3	18.7	-88.85	-715.7	250.8	459.4	431.7	27.70	16.586	
5,950.0	5,932.5	5,992.7	5,928.3	14.4	18.7	-87.82	-715.7	240.7	459.7	431.8	27.91	16.470	
6,000.0	5,982.2	6,040.6	5,974.4	14.4	18.7	-86.80	-715.7	227.9	460.1	432.0	28.09	16.380	
6,050.0	6,031.5	6,088.1	6,019.2	14.5	18.8	-85.81	-715.7	212.3	460.6	432.4	28.24	16.313	
6,100.0	6,080.1	6,135.1	6,062.6	14.5	18.8	-84.83	-715.7	194.1	461.3	432.9	28.36	16.266	
6,150.0	6,127.8	6,181.7	6,104.4	14.5	18.8	-83.88	-715.7	173.6	462.1	433.6	28.46	16.235	
6,200.0	6,174.5	6,227.9	6,144.5	14.6	18.8	-82.96	-715.7	150.7	463.0	434.4	28.55	16.215	
6,250.0	6,219.8	6,273.7	6,182.8	14.6	18.7	-82.08	-715.7	125.6	463.9	435.3	28.64	16.199	
6,300.0	6,263.7	6,319.1	6,219.3	14.6	18.7	-81.23	-715.7	98.5	464.9	436.2	28.74	16.179	
6,350.0	6,306.0	6,364.2	6,253.9	14.6	18.7	-80.42	-715.7	69.6	466.0	437.2	28.86	16.147	
6,400.0	6,346.4	6,409.1	6,286.5	14.6	18.7	-79.65	-715.7	38.8	467.1	438.1	29.03	16.093	
6,450.0	6,384.8	6,453.6	6,317.0	14.6	18.7	-78.92	-715.7	6.4	468.3	439.0	29.26	16.006	
6,500.0	6,421.0	6,500.0	6,346.8	14.7	18.7	-78.22	-715.8	-29.2	469.4	439.8	29.58	15.871	
6,550.0	6,454.9	6,541.9	6,371.7	14.7	18.7	-77.61	-715.8	-62.8	470.5	440.5	29.98	15.693	
6,600.0	6,486.3	6,585.7	6,395.8	14.9	18.8	-77.03	-715.8	-99.4	471.6	441.1	30.52	15.453	
6,650.0	6,515.1	6,629.3	6,417.7	15.2	18.8	-76.50	-715.8	-137.1	472.6	441.5	31.19	15.152	
6,700.0	6,541.2	6,672.7	6,437.3	15.6	18.9	-76.02	-715.8	-175.8	473.6	441.6	32.00	14.799	
6,750.0	6,564.4	6,716.0	6,454.6	16.2	19.0	-75.59	-715.8	-215.5	474.5	441.5	32.96	14.395	
6,800.0	6,584.7	6,759.1	6,469.6	16.8	19.2	-75.22	-715.8	-255.9	475.3	441.2	34.08	13.947	
6,850.0	6,601.9	6,800.0	6,481.7	17.6	19.5	-74.91	-715.9	-295.0	476.0	440.7	35.31	13.480	
6,900.0	6,616.1	6,845.0	6,492.5	18.4	20.0	-74.64	-715.9	-338.7	476.6	439.9	36.76	12.965	
6,950.0	6,627.0	6,887.9	6,500.5	19.2	20.6	-74.43	-715.9	-380.8	477.1	438.8	38.32	12.452	
7,000.0	6,634.8	6,930.6	6,506.0	20.2	21.3	-74.28	-715.9	-423.2	477.5	437.5	39.99	11.941	
7,050.0	6,639.3	6,973.4	6,509.2	21.1	22.1	-74.18	-715.9	-465.8	477.7	435.9	41.76	11.439	
7,085.0	6,640.5	7,003.6	6,510.0	21.9	22.7	-74.15	-715.9	-496.0	477.8	434.7	43.06	11.096	
7,100.0	6,640.7	7,018.2	6,510.1	22.2	23.0	-74.14	-715.9	-510.6	477.8	434.2	43.65	10.947	
7,200.0	6,641.9	7,118.2	6,510.8	24.3	25.1	-74.08	-716.0	-610.6	478.0	430.3	47.74	10.012	
7,300.0	6,643.1	7,218.2	6,511.5	26.6	27.3	-74.02	-716.0	-710.6	478.2	426.1	52.07	9.183	
7,400.0	6,644.3	7,318.2	6,512.1	28.9	29.6	-73.97	-716.0	-810.6	478.3	421.8	56.59	8.453	
7,500.0	6,645.5	7,418.2	6,512.8	31.4	32.0	-73.91	-716.1	-910.6	478.5	417.3	61.24	7.814	
7,600.0	6,646.6	7,518.2	6,513.5	33.9	34.5	-73.85	-716.1	-1,010.6	478.7	412.7	66.01	7.252	
7,700.0	6,647.8	7,618.2	6,514.2	36.4	37.0	-73.80	-716.1	-1,110.6	478.9	408.0	70.86	6.758	
7,800.0	6,649.0	7,718.2	6,514.9	39.0	39.5	-73.74	-716.2	-1,210.6	479.0	403.3	75.79	6.321	
7,900.0	6,650.2	7,818.2	6,515.6	41.6	42.1	-73.68	-716.2	-1,310.6	479.2	398.5	80.77	5.933	
8,000.0	6,651.4	7,918.2	6,516.2	44.2	44.7	-73.62	-716.3	-1,410.6	479.4	393.6	85.79	5.588	
8,100.0	6,652.6	8,018.2	6,516.9	46.9	47.3	-73.57	-716.3	-1,510.6	479.6	388.7	90.86	5.278	
8,200.0	6,653.8	8,118.2	6,517.6	49.5	50.0	-73.51	-716.3	-1,610.6	479.8	383.8	95.96	5.000	
8,300.0	6,655.0	8,218.2	6,518.3	52.2	52.7	-73.45	-716.4	-1,710.6	479.9	378.9	101.08	4.748	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peterson 14X-434
Project:	SEC.14-T5N-R64W	**TVD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peterson 14X-434	**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 (9-12-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14X-234 - Wellbore #1 - Plan #1 (9-12-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,400.0	6,656.1	8,318.2	6,519.0	54.9	55.3	-73.40	-716.4	-1,810.6	480.1	373.9	106.23	4.520	
8,500.0	6,657.3	8,418.2	6,519.6	57.6	58.0	-73.34	-716.4	-1,910.5	480.3	368.9	111.39	4.312	
8,600.0	6,658.5	8,518.2	6,520.3	60.3	60.7	-73.28	-716.5	-2,010.5	480.5	363.9	116.57	4.122	
8,700.0	6,659.7	8,618.2	6,521.0	63.1	63.4	-73.23	-716.5	-2,110.5	480.7	358.9	121.76	3.947	
8,800.0	6,660.9	8,718.2	6,521.7	65.8	66.2	-73.17	-716.5	-2,210.5	480.8	353.9	126.97	3.787	
8,900.0	6,662.1	8,818.2	6,522.4	68.5	68.9	-73.11	-716.6	-2,310.5	481.0	348.8	132.18	3.639	
9,000.0	6,663.3	8,918.2	6,523.0	71.3	71.6	-73.06	-716.6	-2,410.5	481.2	343.8	137.40	3.502	
9,100.0	6,664.4	9,018.2	6,523.7	74.0	74.4	-73.00	-716.7	-2,510.5	481.4	338.8	142.63	3.375	
9,200.0	6,665.6	9,118.2	6,524.4	76.8	77.1	-72.95	-716.7	-2,610.5	481.6	333.7	147.87	3.257	
9,300.0	6,666.8	9,218.2	6,525.1	79.5	79.9	-72.89	-716.7	-2,710.5	481.7	328.6	153.11	3.147	
9,400.0	6,668.0	9,318.2	6,525.8	82.3	82.6	-72.83	-716.8	-2,810.5	481.9	323.6	158.35	3.043	
9,500.0	6,669.2	9,418.2	6,526.4	85.0	85.4	-72.78	-716.8	-2,910.5	482.1	318.5	163.59	2.947	
9,600.0	6,670.4	9,518.2	6,527.1	87.8	88.1	-72.72	-716.8	-3,010.5	482.3	313.5	168.84	2.856	
9,700.0	6,671.6	9,618.2	6,527.8	90.6	90.9	-72.66	-716.9	-3,110.5	482.5	308.4	174.09	2.771	
9,800.0	6,672.8	9,718.2	6,528.5	93.4	93.7	-72.61	-716.9	-3,210.5	482.7	303.3	179.35	2.691	
9,900.0	6,673.9	9,818.2	6,529.2	96.1	96.4	-72.55	-716.9	-3,310.5	482.9	298.3	184.60	2.616	
10,000.0	6,675.1	9,918.2	6,529.8	98.9	99.2	-72.50	-717.0	-3,410.5	483.0	293.2	189.86	2.544	
10,100.0	6,676.3	10,018.2	6,530.5	101.7	102.0	-72.44	-717.0	-3,510.5	483.2	288.1	195.11	2.477	
10,200.0	6,677.5	10,118.2	6,531.2	104.5	104.7	-72.38	-717.0	-3,610.5	483.4	283.1	200.37	2.413	
10,300.0	6,678.7	10,218.2	6,531.9	107.2	107.5	-72.33	-717.1	-3,710.5	483.6	278.0	205.62	2.352	
10,400.0	6,679.9	10,318.2	6,532.6	110.0	110.3	-72.27	-717.1	-3,810.5	483.8	272.9	210.88	2.294	
10,500.0	6,681.1	10,418.1	6,533.2	112.8	113.1	-72.22	-717.2	-3,910.5	484.0	267.8	216.13	2.239	
10,600.0	6,682.2	10,518.1	6,533.9	115.6	115.8	-72.16	-717.2	-4,010.5	484.2	262.8	221.39	2.187	
10,700.0	6,683.4	10,618.1	6,534.6	118.4	118.6	-72.11	-717.2	-4,110.5	484.4	257.7	226.64	2.137	
10,800.0	6,684.6	10,718.1	6,535.3	121.2	121.4	-72.05	-717.3	-4,210.5	484.6	252.7	231.89	2.090	
10,900.0	6,685.8	10,818.1	6,536.0	123.9	124.2	-71.99	-717.3	-4,310.5	484.7	247.6	237.14	2.044	
10,916.2	6,686.0	10,822.4	6,536.0	124.2	124.3	-71.99	-717.3	-4,314.7	484.9	247.4	237.53	2.042	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peterson 14X-434
Project:	SEC.14-T5N-R64W	**TVD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peterson 14X-434	**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 (9-12-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14X-304 - Wellbore #1 - Plan #1 (9-12-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.00	29.2	0.0	29.2				
100.0	100.0	100.0	100.0	0.1	0.1	0.00	29.2	0.0	29.2	28.9	0.22	129.704	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	29.2	0.0	29.2	28.5	0.67	43.235	
300.0	300.0	300.0	300.0	0.6	0.6	0.00	29.2	0.0	29.2	28.0	1.12	25.941	
400.0	400.0	400.0	400.0	0.8	0.8	0.00	29.2	0.0	29.2	27.6	1.57	18.529	
500.0	500.0	500.0	500.0	1.0	1.0	0.00	29.2	0.0	29.2	27.1	2.02	14.412	
600.0	600.0	600.0	600.0	1.2	1.2	0.00	29.2	0.0	29.2	26.7	2.47	11.791	
700.0	700.0	700.0	700.0	1.5	1.5	0.00	29.2	0.0	29.2	26.2	2.92	9.977	
800.0	800.0	800.0	800.0	1.7	1.7	0.00	29.2	0.0	29.2	25.8	3.37	8.647	
900.0	900.0	900.0	900.0	1.9	1.9	0.00	29.2	0.0	29.2	25.3	3.82	7.630	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	0.00	29.2	0.0	29.2	24.9	4.27	6.827	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	0.00	29.2	0.0	29.2	24.4	4.72	6.176	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	0.00	29.2	0.0	29.2	24.0	5.17	5.639	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	0.00	29.2	0.0	29.2	23.5	5.62	5.188	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	0.00	29.2	0.0	29.2	23.1	6.07	4.804	
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	0.00	29.2	0.0	29.2	22.6	6.52	4.473	CC, ES
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	-136.91	29.2	0.0	30.4	23.5	6.94	4.379	
1,700.0	1,699.8	1,699.8	1,699.8	3.6	3.7	-142.83	29.2	0.0	34.4	27.1	7.34	4.686	
1,780.3	1,779.9	1,779.9	1,779.9	3.8	3.9	-148.59	29.2	0.0	40.0	32.3	7.66	5.217	
1,800.0	1,799.5	1,799.5	1,799.5	3.8	3.9	-149.97	29.2	0.0	41.6	33.9	7.74	5.376	
1,900.0	1,899.0	1,899.0	1,899.0	4.0	4.2	-155.54	29.2	0.0	50.3	42.2	8.16	6.170	
2,000.0	1,998.5	1,998.5	1,998.5	4.3	4.4	-159.44	29.2	0.0	59.4	50.8	8.58	6.923	
2,100.0	2,098.0	2,099.2	2,099.2	4.5	4.6	-161.09	29.1	1.7	67.8	58.8	8.99	7.539	
2,200.0	2,197.5	2,200.2	2,200.0	4.7	4.8	-160.02	28.8	7.0	74.4	65.0	9.40	7.923	
2,300.0	2,297.1	2,300.3	2,299.9	5.0	5.0	-157.49	28.3	14.8	80.0	70.1	9.82	8.146	
2,400.0	2,396.6	2,400.1	2,399.3	5.2	5.2	-155.22	27.9	22.7	85.6	75.3	10.25	8.350	
2,500.0	2,496.1	2,499.9	2,498.8	5.5	5.4	-153.24	27.5	30.6	91.3	80.6	10.69	8.541	
2,600.0	2,595.6	2,599.7	2,598.3	5.7	5.7	-151.49	27.1	38.5	97.1	86.0	11.14	8.719	
2,700.0	2,695.2	2,699.5	2,697.8	6.0	5.9	-149.94	26.6	46.4	103.0	91.4	11.60	8.884	
2,800.0	2,794.7	2,799.3	2,797.2	6.2	6.1	-148.55	26.2	54.3	109.0	96.9	12.06	9.037	
2,900.0	2,894.2	2,899.1	2,896.7	6.5	6.4	-147.31	25.8	62.2	115.0	102.5	12.53	9.179	
3,000.0	2,993.7	2,998.9	2,996.2	6.8	6.6	-146.20	25.3	70.1	121.1	108.1	13.01	9.310	
3,100.0	3,093.2	3,098.6	3,095.7	7.0	6.8	-145.19	24.9	78.0	127.2	113.7	13.49	9.431	
3,200.0	3,192.8	3,198.4	3,195.1	7.3	7.1	-144.28	24.5	85.9	133.4	119.4	13.98	9.544	
3,300.0	3,292.3	3,298.2	3,294.6	7.6	7.3	-143.44	24.0	93.8	139.6	125.1	14.47	9.648	
3,400.0	3,391.8	3,398.0	3,394.1	7.9	7.6	-142.68	23.6	101.7	145.8	130.8	14.96	9.745	
3,500.0	3,491.3	3,497.8	3,493.6	8.1	7.8	-141.98	23.2	109.6	152.0	136.6	15.46	9.835	
3,600.0	3,590.8	3,597.6	3,593.0	8.4	8.1	-141.33	22.7	117.5	158.3	142.3	15.96	9.919	
3,700.0	3,690.4	3,697.4	3,692.5	8.7	8.3	-140.74	22.3	125.4	164.6	148.1	16.46	9.998	
3,800.0	3,789.9	3,797.2	3,792.0	9.0	8.6	-140.19	21.9	133.3	170.9	153.9	16.96	10.071	
3,900.0	3,889.4	3,896.9	3,891.5	9.3	8.8	-139.67	21.4	141.2	177.2	159.7	17.47	10.139	
4,000.0	3,988.9	3,996.7	3,990.9	9.5	9.1	-139.19	21.0	149.1	183.5	165.5	17.98	10.204	
4,100.0	4,088.5	4,096.5	4,090.4	9.8	9.3	-138.75	20.6	157.0	189.8	171.3	18.49	10.264	
4,200.0	4,188.0	4,196.3	4,189.9	10.1	9.6	-138.33	20.1	164.9	196.2	177.1	19.01	10.320	
4,300.0	4,287.5	4,296.1	4,289.3	10.4	9.8	-137.94	19.7	172.9	202.5	183.0	19.52	10.374	
4,400.0	4,387.0	4,395.9	4,388.8	10.7	10.1	-137.57	19.3	180.8	208.9	188.8	20.04	10.424	
4,500.0	4,486.5	4,495.7	4,488.3	11.0	10.3	-137.23	18.8	188.7	215.2	194.7	20.56	10.471	
4,600.0	4,586.1	4,595.5	4,587.8	11.2	10.6	-136.90	18.4	196.6	221.6	200.5	21.07	10.516	
4,700.0	4,685.6	4,695.3	4,687.2	11.5	10.8	-136.59	18.0	204.5	228.0	206.4	21.59	10.558	
4,800.0	4,785.1	4,795.0	4,786.7	11.8	11.1	-136.30	17.6	212.4	234.4	212.3	22.12	10.598	
4,900.0	4,884.6	4,894.8	4,886.2	12.1	11.4	-136.03	17.1	220.3	240.8	218.1	22.64	10.636	

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 Peterson 14X-434
Project:	SEC.14-T5N-R64W	**TVD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peterson 14X-434	**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 (9-12-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14X-304 - Wellbore #1 - Plan #1 (9-12-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,984.2	4,994.6	4,985.7	12.4	11.6	-135.77	16.7	228.2	247.2	224.0	23.16	10.672	
5,100.0	5,083.7	5,094.4	5,085.1	12.7	11.9	-135.52	16.3	236.1	253.6	229.9	23.69	10.706	
5,200.0	5,183.2	5,194.2	5,184.6	13.0	12.1	-135.28	15.8	244.0	260.0	235.8	24.21	10.739	
5,237.1	5,220.1	5,231.3	5,221.6	13.1	12.2	-135.20	15.7	246.9	262.4	238.0	24.41	10.751	
5,300.0	5,282.8	5,293.9	5,284.0	13.2	12.4	-135.01	15.4	251.9	265.9	241.2	24.73	10.753	
5,400.0	5,382.6	5,393.3	5,383.2	13.4	12.6	-134.71	15.1	257.6	269.7	244.5	25.15	10.724	
5,500.0	5,482.6	5,492.8	5,482.7	13.6	12.8	-134.59	15.0	259.9	271.2	245.7	25.52	10.629	
5,517.4	5,500.0	5,510.1	5,500.0	13.6	12.8	0.00	15.0	260.0	271.3	246.5	24.73	10.968	
5,600.0	5,582.6	5,592.7	5,582.6	13.8	13.0	0.00	15.0	260.0	271.3	246.2	25.05	10.828	
5,700.0	5,682.6	5,692.7	5,682.6	14.0	13.2	0.00	15.0	260.0	271.3	245.8	25.44	10.661	
5,800.0	5,782.6	5,792.7	5,782.6	14.1	13.4	0.00	15.0	260.0	271.3	245.4	25.84	10.499	
5,848.9	5,831.5	5,841.6	5,831.5	14.2	13.5	0.00	15.0	260.0	271.3	245.2	26.03	10.421	
5,894.1	5,876.6	5,886.7	5,876.6	14.3	13.5	-0.23	15.0	258.9	271.3	245.1	26.20	10.352	
5,900.0	5,882.6	5,892.6	5,882.5	14.3	13.5	89.70	15.0	258.6	271.3	244.2	27.02	10.040	
5,950.0	5,932.5	5,942.4	5,932.0	14.4	13.6	89.13	15.0	253.9	271.3	244.1	27.14	9.995	
6,000.0	5,982.2	5,991.9	5,980.9	14.4	13.7	88.57	15.0	246.0	271.3	244.1	27.24	9.962	
6,050.0	6,031.5	6,041.3	6,029.1	14.5	13.7	88.02	15.0	235.0	271.4	244.1	27.31	9.940	
6,100.0	6,080.1	6,090.6	6,076.3	14.5	13.7	87.47	15.0	221.0	271.5	244.2	27.36	9.925	
6,150.0	6,127.8	6,139.7	6,122.4	14.5	13.8	86.94	15.0	204.1	271.6	244.2	27.40	9.915	
6,200.0	6,174.5	6,188.6	6,167.1	14.6	13.8	86.42	15.0	184.3	271.8	244.3	27.44	9.906	
6,250.0	6,219.8	6,237.4	6,210.3	14.6	13.8	85.92	15.0	161.7	271.9	244.5	27.49	9.893	
6,300.0	6,263.7	6,286.0	6,251.9	14.6	13.9	85.43	15.0	136.5	272.1	244.6	27.57	9.871	
6,350.0	6,306.0	6,334.5	6,291.7	14.6	14.0	84.97	15.0	108.8	272.3	244.6	27.69	9.834	
6,400.0	6,346.4	6,382.9	6,329.6	14.6	14.1	84.53	15.0	78.7	272.5	244.6	27.87	9.776	
6,450.0	6,384.8	6,431.2	6,365.4	14.6	14.2	84.11	15.0	46.3	272.7	244.6	28.14	9.690	
6,500.0	6,421.0	6,479.3	6,399.0	14.7	14.5	83.72	15.0	11.9	272.9	244.4	28.51	9.572	
6,550.0	6,454.9	6,527.3	6,430.3	14.7	14.7	83.35	15.0	-24.6	273.1	244.1	29.00	9.418	
6,600.0	6,486.3	6,575.3	6,459.2	14.9	15.1	83.01	15.0	-62.8	273.3	243.7	29.62	9.226	
6,650.0	6,515.1	6,623.1	6,485.5	15.2	15.5	82.70	15.0	-102.7	273.5	243.1	30.39	8.998	
6,700.0	6,541.2	6,670.9	6,509.3	15.6	15.9	82.42	15.0	-144.1	273.6	242.3	31.32	8.737	
6,750.0	6,564.4	6,718.6	6,530.5	16.2	16.5	82.17	15.0	-186.9	273.8	241.4	32.41	8.449	
6,800.0	6,584.7	6,766.2	6,548.9	16.8	17.1	81.96	15.0	-230.8	273.9	240.3	33.65	8.141	
6,850.0	6,601.9	6,813.8	6,564.5	17.6	17.8	81.77	15.0	-275.7	274.1	239.0	35.05	7.820	
6,900.0	6,616.1	6,861.3	6,577.3	18.4	18.6	81.62	15.0	-321.5	274.2	237.6	36.58	7.495	
6,950.0	6,627.0	6,908.8	6,587.2	19.2	19.4	81.51	15.0	-367.9	274.3	236.0	38.24	7.171	
7,000.0	6,634.8	6,956.3	6,594.2	20.2	20.3	81.42	15.0	-414.9	274.3	234.3	40.02	6.855	
7,050.0	6,639.3	7,003.7	6,598.2	21.1	21.3	81.38	15.0	-462.1	274.4	232.5	41.88	6.551	
7,085.0	6,640.5	7,036.9	6,599.3	21.9	21.9	81.36	15.0	-495.3	274.4	231.1	43.23	6.346	
7,100.0	6,640.7	7,051.3	6,599.4	22.2	22.2	81.34	15.0	-509.7	274.4	230.6	43.83	6.261	
7,200.0	6,641.9	7,151.3	6,599.0	24.3	24.4	81.02	15.0	-609.7	274.6	226.6	48.02	5.718	
7,300.0	6,643.1	7,251.3	6,598.7	26.6	26.6	80.70	15.0	-709.7	274.9	222.4	52.45	5.241	
7,400.0	6,644.3	7,351.3	6,598.3	28.9	29.0	80.39	15.0	-809.7	275.1	218.1	57.05	4.822	
7,500.0	6,645.5	7,451.3	6,598.0	31.4	31.4	80.07	15.0	-909.7	275.4	213.6	61.79	4.456	
7,600.0	6,646.6	7,551.3	6,597.6	33.9	33.9	79.76	15.0	-1,009.7	275.7	209.0	66.64	4.136	
7,700.0	6,647.8	7,651.3	6,597.3	36.4	36.4	79.44	15.0	-1,109.7	275.9	204.4	71.57	3.855	
7,800.0	6,649.0	7,751.2	6,596.9	39.0	39.0	79.13	15.0	-1,209.6	276.2	199.6	76.57	3.607	
7,900.0	6,650.2	7,851.2	6,596.6	41.6	41.6	78.82	15.0	-1,309.6	276.5	194.9	81.61	3.388	
8,000.0	6,651.4	7,951.2	6,596.2	44.2	44.2	78.51	15.0	-1,409.6	276.8	190.1	86.69	3.193	
8,100.0	6,652.6	8,051.2	6,595.9	46.9	46.9	78.20	15.0	-1,509.6	277.1	185.3	91.79	3.019	
8,200.0	6,653.8	8,151.2	6,595.5	49.5	49.5	77.88	15.0	-1,609.6	277.4	180.5	96.92	2.862	
8,300.0	6,655.0	8,251.2	6,595.2	52.2	52.2	77.58	15.0	-1,709.6	277.8	175.7	102.07	2.721	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peterson 14X-434
Project:	SEC.14-T5N-R64W	**TVD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peterson 14X-434	**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 (9-12-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14X-304 - Wellbore #1 - Plan #1 (9-12-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,400.0	6,656.1	8,351.2	6,594.8	54.9	54.9	77.27	15.0	-1,809.6	278.1	170.9	107.22	2.594	
8,500.0	6,657.3	8,451.2	6,594.5	57.6	57.6	76.96	15.0	-1,909.6	278.4	166.1	112.38	2.478	
8,600.0	6,658.5	8,551.2	6,594.1	60.3	60.3	76.65	15.0	-2,009.5	278.8	161.2	117.55	2.372	
8,700.0	6,659.7	8,651.1	6,593.8	63.1	63.0	76.34	15.0	-2,109.5	279.2	156.4	122.71	2.275	
8,800.0	6,660.9	8,751.1	6,593.4	65.8	65.8	76.04	15.0	-2,209.5	279.5	151.6	127.88	2.186	
8,900.0	6,662.1	8,851.1	6,593.1	68.5	68.5	75.73	15.0	-2,309.5	279.9	146.9	133.04	2.104	
9,000.0	6,663.3	8,951.1	6,592.7	71.3	71.3	75.43	15.0	-2,409.5	280.3	142.1	138.20	2.028	
9,100.0	6,664.4	9,051.1	6,592.4	74.0	74.0	75.13	15.0	-2,509.5	280.7	137.3	143.34	1.958	
9,200.0	6,665.6	9,151.1	6,592.0	76.8	76.8	74.82	15.0	-2,609.5	281.1	132.6	148.48	1.893	
9,300.0	6,666.8	9,251.1	6,591.7	79.5	79.5	74.52	15.0	-2,709.5	281.5	127.9	153.62	1.832	
9,400.0	6,668.0	9,351.1	6,591.3	82.3	82.3	74.22	15.0	-2,809.4	281.9	123.2	158.74	1.776	
9,500.0	6,669.2	9,451.0	6,591.0	85.0	85.0	73.92	15.0	-2,909.4	282.3	118.5	163.84	1.723	
9,600.0	6,670.4	9,551.0	6,590.6	87.8	87.8	73.62	15.0	-3,009.4	282.7	113.8	168.94	1.674	
9,700.0	6,671.6	9,651.0	6,590.3	90.6	90.6	73.32	15.0	-3,109.4	283.2	109.2	174.02	1.627	
9,800.0	6,672.8	9,751.0	6,589.9	93.4	93.3	73.03	15.0	-3,209.4	283.6	104.5	179.09	1.584	
9,900.0	6,673.9	9,851.0	6,589.6	96.1	96.1	72.73	15.0	-3,309.4	284.1	99.9	184.15	1.543	
10,000.0	6,675.1	9,951.0	6,589.2	98.9	98.9	72.43	15.0	-3,409.4	284.5	95.4	189.18	1.504	
10,100.0	6,676.3	10,051.0	6,588.9	101.7	101.7	72.14	15.0	-3,509.4	285.0	90.8	194.21	1.468	Level 3
10,200.0	6,677.5	10,151.0	6,588.5	104.5	104.4	71.85	15.0	-3,609.3	285.5	86.3	199.21	1.433	Level 3
10,300.0	6,678.7	10,251.0	6,588.2	107.2	107.2	71.55	15.0	-3,709.3	286.0	81.8	204.20	1.400	Level 3
10,400.0	6,679.9	10,350.9	6,587.9	110.0	110.0	71.26	15.0	-3,809.3	286.4	77.3	209.17	1.369	Level 3
10,500.0	6,681.1	10,450.9	6,587.5	112.8	112.8	70.97	15.0	-3,909.3	286.9	72.8	214.12	1.340	Level 3
10,600.0	6,682.2	10,550.9	6,587.2	115.6	115.6	70.68	15.0	-4,009.3	287.5	68.4	219.06	1.312	Level 3
10,700.0	6,683.4	10,650.9	6,586.8	118.4	118.4	70.40	15.0	-4,109.3	288.0	64.0	223.97	1.286	Level 3
10,800.0	6,684.6	10,750.9	6,586.5	121.2	121.1	70.11	15.0	-4,209.3	288.5	59.6	228.87	1.260	Level 3
10,900.0	6,685.8	10,850.9	6,586.1	123.9	123.4	69.82	15.0	-4,309.3	289.0	55.7	233.27	1.239	Level 2
10,916.2	6,686.0	10,867.1	6,586.0	124.2	123.7	69.78	15.0	-4,325.4	289.1	55.3	233.76	1.237	Level 2, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peterson 14X-434
Project:	SEC.14-T5N-R64W	**TVD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peterson 14X-434	**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 (9-12-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14X-414 - Wellbore #1 - Plan #2 (9-12-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.00	58.3	0.0	58.3				
100.0	100.0	100.0	100.0	0.1	0.1	0.00	58.3	0.0	58.3	58.1	0.22	259.336	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	58.3	0.0	58.3	57.6	0.67	86.445	
300.0	300.0	300.0	300.0	0.6	0.6	0.00	58.3	0.0	58.3	57.2	1.12	51.867	
400.0	400.0	400.0	400.0	0.8	0.8	0.00	58.3	0.0	58.3	56.7	1.57	37.048	
500.0	500.0	500.0	500.0	1.0	1.0	0.00	58.3	0.0	58.3	56.3	2.02	28.815	
600.0	600.0	600.0	600.0	1.2	1.2	0.00	58.3	0.0	58.3	55.8	2.47	23.576	
700.0	700.0	700.0	700.0	1.5	1.5	0.00	58.3	0.0	58.3	55.4	2.92	19.949	
800.0	800.0	800.0	800.0	1.7	1.7	0.00	58.3	0.0	58.3	54.9	3.37	17.289	
900.0	900.0	900.0	900.0	1.9	1.9	0.00	58.3	0.0	58.3	54.5	3.82	15.255	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	0.00	58.3	0.0	58.3	54.0	4.27	13.649	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	0.00	58.3	0.0	58.3	53.6	4.72	12.349	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	0.00	58.3	0.0	58.3	53.1	5.17	11.275	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	0.00	58.3	0.0	58.3	52.7	5.62	10.373	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	0.00	58.3	0.0	58.3	52.2	6.07	9.605	
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	0.00	58.3	0.0	58.3	51.8	6.52	8.943	CC, ES
1,600.0	1,600.0	1,598.5	1,598.4	3.5	3.5	-134.63	59.5	1.1	60.8	53.8	6.94	8.763	
1,700.0	1,699.8	1,696.6	1,696.4	3.6	3.7	-134.73	63.3	4.5	68.3	60.9	7.33	9.307	
1,780.3	1,779.9	1,774.8	1,774.4	3.8	3.9	-134.82	68.0	8.9	77.8	70.2	7.66	10.162	
1,800.0	1,799.5	1,793.9	1,793.4	3.8	3.9	-134.84	69.4	10.2	80.6	72.9	7.74	10.414	
1,900.0	1,899.0	1,892.8	1,891.8	4.0	4.1	-134.76	77.0	17.1	95.1	86.9	8.17	11.640	
2,000.0	1,998.5	1,991.8	1,990.2	4.3	4.4	-134.71	84.5	24.0	109.5	100.9	8.60	12.731	
2,100.0	2,098.0	2,090.7	2,088.6	4.5	4.6	-134.66	92.1	30.9	124.0	115.0	9.05	13.703	
2,200.0	2,197.5	2,189.7	2,187.0	4.7	4.9	-134.63	99.7	37.8	138.5	129.0	9.50	14.570	
2,300.0	2,297.1	2,288.6	2,285.4	5.0	5.1	-134.60	107.2	44.7	152.9	143.0	9.96	15.348	
2,400.0	2,396.6	2,387.6	2,383.8	5.2	5.4	-134.58	114.8	51.6	167.4	157.0	10.43	16.047	
2,500.0	2,496.1	2,486.5	2,482.3	5.5	5.6	-134.56	122.4	58.5	181.9	171.0	10.90	16.679	
2,600.0	2,595.6	2,585.4	2,580.7	5.7	5.9	-134.54	129.9	65.4	196.3	185.0	11.38	17.250	
2,700.0	2,695.2	2,684.4	2,679.1	6.0	6.2	-134.52	137.5	72.4	210.8	198.9	11.86	17.770	
2,800.0	2,794.7	2,783.3	2,777.5	6.2	6.4	-134.51	145.1	79.3	225.3	212.9	12.35	18.243	
2,900.0	2,894.2	2,882.3	2,875.9	6.5	6.7	-134.50	152.6	86.2	239.7	226.9	12.84	18.676	
3,000.0	2,993.7	2,981.2	2,974.3	6.8	7.0	-134.49	160.2	93.1	254.2	240.9	13.33	19.073	
3,100.0	3,093.2	3,080.2	3,072.8	7.0	7.3	-134.48	167.7	100.0	268.7	254.8	13.82	19.439	
3,200.0	3,192.8	3,179.1	3,171.2	7.3	7.5	-134.47	175.3	106.9	283.1	268.8	14.32	19.776	
3,300.0	3,292.3	3,278.1	3,269.6	7.6	7.8	-134.47	182.9	113.8	297.6	282.8	14.81	20.087	
3,400.0	3,391.8	3,377.0	3,368.0	7.9	8.1	-134.46	190.4	120.7	312.1	296.7	15.31	20.376	
3,500.0	3,491.3	3,476.0	3,466.4	8.1	8.4	-134.45	198.0	127.6	326.5	310.7	15.82	20.644	
3,600.0	3,590.8	3,574.9	3,564.8	8.4	8.6	-134.45	205.6	134.6	341.0	324.7	16.32	20.894	
3,700.0	3,690.4	3,673.9	3,663.3	8.7	8.9	-134.44	213.1	141.5	355.4	338.6	16.82	21.127	
3,800.0	3,789.9	3,772.8	3,761.7	9.0	9.2	-134.44	220.7	148.4	369.9	352.6	17.33	21.345	
3,900.0	3,889.4	3,871.8	3,860.1	9.3	9.5	-134.43	228.3	155.3	384.4	366.5	17.84	21.549	
4,000.0	3,988.9	3,970.7	3,958.5	9.5	9.8	-134.43	235.8	162.2	398.8	380.5	18.35	21.740	
4,100.0	4,088.5	4,069.7	4,056.9	9.8	10.0	-134.43	243.4	169.1	413.3	394.5	18.85	21.920	
4,200.0	4,188.0	4,168.6	4,155.3	10.1	10.3	-134.42	251.0	176.0	427.8	408.4	19.37	22.090	
4,300.0	4,287.5	4,267.6	4,253.8	10.4	10.6	-134.42	258.5	182.9	442.2	422.4	19.88	22.250	
4,400.0	4,387.0	4,366.5	4,352.2	10.7	10.9	-134.42	266.1	189.8	456.7	436.3	20.39	22.401	
4,500.0	4,486.5	4,465.5	4,450.6	11.0	11.2	-134.41	273.7	196.8	471.2	450.3	20.90	22.544	
4,600.0	4,586.1	4,564.4	4,549.0	11.2	11.5	-134.41	281.2	203.7	485.6	464.2	21.41	22.679	
4,700.0	4,685.6	4,663.4	4,647.4	11.5	11.7	-134.41	288.8	210.6	500.1	478.2	21.93	22.807	
4,800.0	4,785.1	4,762.3	4,745.8	11.8	12.0	-134.41	296.4	217.5	514.6	492.1	22.44	22.929	
4,900.0	4,884.6	4,861.3	4,844.3	12.1	12.3	-134.41	303.9	224.4	529.0	506.1	22.96	23.045	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peterson 14X-434
Project:	SEC.14-T5N-R64W	**TVD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peterson 14X-434	**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 (9-12-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14X-414 - Wellbore #1 - Plan #2 (9-12-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,984.2	4,960.2	4,942.7	12.4	12.6	-134.40	311.5	231.3	543.5	520.0	23.47	23.155	
5,100.0	5,083.7	5,059.2	5,041.1	12.7	12.9	-134.40	319.0	238.2	558.0	534.0	23.99	23.260	
5,200.0	5,183.2	5,158.1	5,139.5	13.0	13.2	-134.40	326.6	245.1	572.4	547.9	24.50	23.360	
5,237.1	5,220.1	5,194.8	5,176.0	13.1	13.3	-134.40	329.4	247.7	577.8	553.1	24.70	23.396	
5,300.0	5,282.8	5,263.3	5,244.2	13.2	13.5	-134.48	334.4	252.3	586.2	561.2	25.03	23.424	
5,400.0	5,382.6	5,380.8	5,361.3	13.4	13.7	-134.56	340.4	257.7	595.4	569.9	25.48	23.370	
5,500.0	5,482.6	5,498.9	5,479.4	13.6	13.9	-134.59	342.8	260.0	599.1	573.2	25.87	23.155	
5,517.4	5,500.0	5,519.5	5,500.0	13.6	13.9	0.00	342.9	260.0	599.2	573.2	25.97	23.071	
5,600.0	5,582.6	5,602.1	5,582.6	13.8	14.1	0.00	342.9	260.0	599.2	572.9	26.28	22.804	
5,700.0	5,682.6	5,702.1	5,682.6	14.0	14.3	0.00	342.9	260.0	599.2	572.5	26.66	22.478	
5,800.0	5,782.6	5,802.1	5,782.6	14.1	14.5	0.00	342.9	260.0	599.2	572.1	27.04	22.159	
5,894.1	5,876.6	5,896.1	5,876.6	14.3	14.7	0.00	342.9	260.0	599.2	571.8	27.40	21.867	
5,894.5	5,877.1	5,896.5	5,877.1	14.3	14.7	90.00	342.9	260.0	599.2	571.8	27.40	21.870	
5,900.0	5,882.6	5,902.1	5,882.6	14.3	14.7	90.00	342.9	260.0	599.2	571.8	27.42	21.853	
5,950.0	5,932.5	5,952.0	5,932.6	14.4	14.8	90.18	342.9	259.8	599.2	571.6	27.59	21.714	
6,000.0	5,982.2	6,002.2	5,982.6	14.4	14.8	90.42	342.9	257.0	599.2	571.5	27.73	21.608	
6,050.0	6,031.5	6,052.5	6,032.6	14.5	14.9	90.66	342.9	251.0	599.2	571.4	27.84	21.526	
6,100.0	6,080.1	6,103.0	6,082.1	14.5	14.9	90.90	342.9	241.6	599.3	571.3	27.92	21.463	
6,150.0	6,127.8	6,153.6	6,131.2	14.5	15.0	91.13	342.9	228.9	599.3	571.3	27.98	21.416	
6,200.0	6,174.5	6,204.4	6,179.4	14.6	15.0	91.36	342.9	212.9	599.4	571.3	28.04	21.376	
6,250.0	6,219.8	6,255.4	6,226.6	14.6	15.0	91.58	342.9	193.7	599.4	571.3	28.09	21.336	
6,300.0	6,263.7	6,306.5	6,272.6	14.6	15.0	91.80	342.9	171.3	599.5	571.3	28.16	21.286	
6,350.0	6,306.0	6,357.8	6,317.1	14.6	15.0	92.01	342.9	145.8	599.6	571.3	28.27	21.211	
6,400.0	6,346.4	6,409.3	6,359.9	14.6	15.0	92.21	342.9	117.3	599.6	571.2	28.42	21.100	
6,450.0	6,384.8	6,460.9	6,400.8	14.6	15.0	92.40	342.9	85.9	599.7	571.1	28.64	20.937	
6,500.0	6,421.0	6,512.6	6,439.6	14.7	15.0	92.59	342.9	51.7	599.8	570.8	28.96	20.709	
6,550.0	6,454.9	6,564.5	6,476.1	14.7	15.1	92.76	342.9	14.9	599.9	570.5	29.40	20.404	
6,600.0	6,486.3	6,616.5	6,510.1	14.9	15.2	92.91	342.9	-24.5	600.0	570.0	29.98	20.015	
6,650.0	6,515.1	6,668.6	6,541.4	15.2	15.6	93.06	342.9	-66.1	600.0	569.3	30.70	19.542	
6,700.0	6,541.2	6,720.8	6,569.8	15.6	16.0	93.19	342.9	-109.9	600.1	568.5	31.60	18.988	
6,750.0	6,564.4	6,773.1	6,595.2	16.2	16.6	93.31	342.9	-155.6	600.2	567.5	32.68	18.366	
6,800.0	6,584.7	6,825.5	6,617.5	16.8	17.2	93.41	342.9	-203.0	600.2	566.3	33.93	17.690	
6,850.0	6,601.9	6,878.0	6,636.5	17.6	17.9	93.50	342.9	-251.9	600.3	564.9	35.36	16.978	
6,900.0	6,616.1	6,930.5	6,652.1	18.4	18.7	93.57	342.9	-302.1	600.4	563.4	36.94	16.251	
6,950.0	6,627.0	6,983.1	6,664.3	19.2	19.6	93.63	342.9	-353.2	600.4	561.7	38.68	15.523	
7,000.0	6,634.8	7,035.8	6,672.9	20.2	20.6	93.67	342.9	-405.2	600.4	559.9	40.54	14.811	
7,050.0	6,639.3	7,088.4	6,677.9	21.1	21.6	93.69	342.9	-457.6	600.4	557.9	42.50	14.126	
7,085.0	6,640.5	7,125.3	6,679.2	21.9	22.3	93.70	342.9	-494.4	600.4	556.5	43.93	13.667	
7,100.0	6,640.7	7,140.7	6,679.3	22.2	22.6	93.68	342.9	-509.8	600.4	555.9	44.55	13.477	
7,200.0	6,641.9	7,240.7	6,679.5	24.3	24.7	93.59	342.9	-609.8	600.4	551.6	48.80	12.302	
7,300.0	6,643.1	7,340.7	6,679.6	26.6	27.0	93.49	342.9	-709.8	600.3	547.0	53.29	11.264	
7,400.0	6,644.3	7,440.7	6,679.8	28.9	29.3	93.40	342.9	-809.8	600.2	542.3	57.98	10.352	
7,500.0	6,645.5	7,540.7	6,680.0	31.4	31.7	93.30	342.9	-909.8	600.2	537.4	62.82	9.554	
7,600.0	6,646.6	7,640.7	6,680.2	33.9	34.2	93.20	342.9	-1,009.8	600.1	532.3	67.78	8.854	
7,700.0	6,647.8	7,740.7	6,680.3	36.4	36.7	93.11	342.9	-1,109.8	600.1	527.2	72.84	8.238	
7,800.0	6,649.0	7,840.7	6,680.5	39.0	39.2	93.01	342.9	-1,209.8	600.0	522.0	77.97	7.695	
7,900.0	6,650.2	7,940.6	6,680.7	41.6	41.8	92.91	342.9	-1,309.8	600.0	516.8	83.17	7.213	
8,000.0	6,651.4	8,040.6	6,680.9	44.2	44.4	92.82	342.9	-1,409.8	599.9	511.5	88.42	6.785	
8,100.0	6,652.6	8,140.6	6,681.0	46.9	47.1	92.72	342.9	-1,509.8	599.8	506.1	93.71	6.401	
8,200.0	6,653.8	8,240.6	6,681.2	49.5	49.7	92.62	342.9	-1,609.8	599.8	500.8	99.04	6.056	
8,300.0	6,655.0	8,340.6	6,681.4	52.2	52.4	92.53	342.9	-1,709.7	599.8	495.4	104.40	5.745	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peterson 14X-434
Project:	SEC.14-T5N-R64W	**TVD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peterson 14X-434	**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 (9-12-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14X-414 - Wellbore #1 - Plan #2 (9-12-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,400.0	6,656.1	8,440.6	6,681.6	54.9	55.1	92.43	342.9	-1,809.7	599.7	489.9	109.79	5.462	
8,500.0	6,657.3	8,540.6	6,681.7	57.6	57.8	92.33	342.9	-1,909.7	599.7	484.5	115.20	5.205	
8,600.0	6,658.5	8,640.6	6,681.9	60.3	60.5	92.24	342.9	-2,009.7	599.6	479.0	120.63	4.971	
8,700.0	6,659.7	8,740.6	6,682.1	63.1	63.2	92.14	342.9	-2,109.7	599.6	473.5	126.08	4.756	
8,800.0	6,660.9	8,840.6	6,682.3	65.8	65.9	92.04	342.9	-2,209.7	599.5	468.0	131.54	4.558	
8,900.0	6,662.1	8,940.6	6,682.4	68.5	68.7	91.95	342.9	-2,309.7	599.5	462.5	137.01	4.376	
9,000.0	6,663.3	9,040.6	6,682.6	71.3	71.4	91.85	342.9	-2,409.7	599.5	457.0	142.50	4.207	
9,100.0	6,664.4	9,140.6	6,682.8	74.0	74.1	91.75	342.9	-2,509.7	599.4	451.4	148.00	4.050	
9,200.0	6,665.6	9,240.6	6,683.0	76.8	76.9	91.66	342.9	-2,609.7	599.4	445.9	153.51	3.905	
9,300.0	6,666.8	9,340.6	6,683.1	79.5	79.6	91.56	342.9	-2,709.7	599.4	440.4	159.02	3.769	
9,400.0	6,668.0	9,440.6	6,683.3	82.3	82.4	91.46	342.9	-2,809.7	599.4	434.8	164.54	3.643	
9,500.0	6,669.2	9,540.6	6,683.5	85.0	85.2	91.37	342.9	-2,909.7	599.3	429.3	170.07	3.524	
9,600.0	6,670.4	9,640.6	6,683.7	87.8	87.9	91.27	342.9	-3,009.7	599.3	423.7	175.61	3.413	
9,700.0	6,671.6	9,740.6	6,683.8	90.6	90.7	91.17	342.9	-3,109.7	599.3	418.1	181.15	3.308	
9,800.0	6,672.8	9,840.6	6,684.0	93.4	93.4	91.08	342.9	-3,209.7	599.3	412.6	186.69	3.210	
9,900.0	6,673.9	9,940.5	6,684.2	96.1	96.2	90.98	342.9	-3,309.7	599.2	407.0	192.24	3.117	
10,000.0	6,675.1	10,040.5	6,684.4	98.9	99.0	90.88	342.9	-3,409.7	599.2	401.4	197.80	3.030	
10,100.0	6,676.3	10,140.5	6,684.5	101.7	101.8	90.79	342.9	-3,509.7	599.2	395.9	203.36	2.947	
10,200.0	6,677.5	10,240.5	6,684.7	104.5	104.5	90.69	342.9	-3,609.6	599.2	390.3	208.92	2.868	
10,300.0	6,678.7	10,340.5	6,684.9	107.2	107.3	90.59	342.9	-3,709.6	599.2	384.7	214.48	2.794	
10,400.0	6,679.9	10,440.5	6,685.1	110.0	110.1	90.50	342.9	-3,809.6	599.2	379.1	220.05	2.723	
10,500.0	6,681.1	10,540.5	6,685.2	112.8	112.9	90.40	342.9	-3,909.6	599.2	373.6	225.61	2.656	
10,600.0	6,682.2	10,640.5	6,685.4	115.6	115.7	90.30	342.9	-4,009.6	599.2	368.0	231.19	2.592	
10,700.0	6,683.4	10,740.5	6,685.6	118.4	118.4	90.21	342.9	-4,109.6	599.2	362.4	236.76	2.531	
10,800.0	6,684.6	10,840.5	6,685.8	121.2	121.2	90.11	342.8	-4,209.6	599.2	356.8	242.33	2.472	
10,900.0	6,685.8	10,940.5	6,685.9	123.9	123.6	90.01	342.8	-4,309.6	599.1	351.6	247.51	2.421	
10,916.2	6,686.0	10,956.7	6,686.0	124.2	123.9	90.00	342.8	-4,325.8	599.1	351.1	248.09	2.415 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peterson 14X-434
Project:	SEC.14-T5N-R64W	**TVD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peterson 14X-434	**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 (9-12-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14Y-304 - Wellbore #1 - Plan #1 (9-12-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	178.25	-91.1	2.8	91.1				
100.0	100.0	100.0	100.0	0.1	0.1	178.25	-91.1	2.8	91.1	90.9	0.22	405.402	
200.0	200.0	200.0	200.0	0.3	0.3	178.25	-91.1	2.8	91.1	90.4	0.67	135.134	CC, ES
300.0	300.0	296.9	296.9	0.6	0.5	178.07	-92.7	3.1	92.8	91.7	1.10	84.727	
400.0	400.0	393.6	393.5	0.8	0.7	177.56	-97.5	4.2	97.8	96.3	1.52	64.272	
500.0	500.0	489.9	489.4	1.0	1.0	176.82	-105.4	5.8	106.1	104.1	1.97	53.767	
600.0	600.0	585.5	584.4	1.2	1.2	175.97	-116.4	8.2	117.7	115.3	2.45	48.015	
700.0	700.0	680.3	678.0	1.5	1.5	175.10	-130.4	11.2	132.7	129.7	2.96	44.851	
800.0	800.0	774.0	770.2	1.7	1.9	174.27	-147.1	14.8	150.8	147.4	3.49	43.203	
900.0	900.0	866.5	860.5	1.9	2.3	173.52	-166.5	18.9	172.2	168.2	4.05	42.494	
1,000.0	1,000.0	959.3	950.5	2.1	2.7	172.85	-188.8	23.7	196.6	192.0	4.64	42.336	
1,100.0	1,100.0	1,056.1	1,044.1	2.4	3.2	172.29	-212.7	28.8	221.8	216.5	5.26	42.151	
1,200.0	1,200.0	1,152.8	1,137.7	2.6	3.7	171.85	-236.6	33.9	247.0	241.1	5.88	41.973	
1,300.0	1,300.0	1,249.6	1,231.4	2.8	4.2	171.49	-260.5	39.0	272.2	265.7	6.51	41.804	
1,400.0	1,400.0	1,346.4	1,325.0	3.0	4.7	171.18	-284.4	44.1	297.4	290.3	7.14	41.651	
1,500.0	1,500.0	1,443.1	1,418.6	3.3	5.2	170.93	-308.3	49.2	322.6	314.9	7.77	41.513	
1,600.0	1,600.0	1,540.2	1,512.6	3.5	5.8	36.01	-332.3	54.3	346.5	339.4	7.13	48.620	
1,700.0	1,699.8	1,637.9	1,607.1	3.6	6.3	36.05	-356.4	59.5	367.6	360.0	7.58	48.499	
1,780.3	1,779.9	1,716.8	1,683.4	3.8	6.7	36.30	-375.9	63.7	382.6	374.6	7.95	48.110	
1,800.0	1,799.5	1,736.2	1,702.1	3.8	6.8	36.43	-380.7	64.7	386.0	378.0	8.05	47.984	
1,900.0	1,899.0	1,834.5	1,797.3	4.0	7.3	37.04	-405.0	69.9	403.6	395.1	8.52	47.363	
2,000.0	1,998.5	1,932.9	1,892.5	4.3	7.8	37.60	-429.3	75.1	421.2	412.2	9.01	46.768	
2,100.0	2,098.0	2,031.2	1,987.6	4.5	8.4	38.12	-453.6	80.3	438.9	429.4	9.50	46.202	
2,200.0	2,197.5	2,129.6	2,082.8	4.7	8.9	38.60	-477.9	85.5	456.6	446.6	10.00	45.663	
2,300.0	2,297.1	2,227.9	2,178.0	5.0	9.4	39.04	-502.2	90.7	474.3	463.8	10.50	45.153	
2,400.0	2,396.6	2,326.3	2,273.1	5.2	9.9	39.44	-526.5	95.8	492.0	481.0	11.01	44.670	
2,500.0	2,496.1	2,424.7	2,368.3	5.5	10.5	39.82	-550.8	101.0	509.8	498.3	11.53	44.213	
2,600.0	2,595.6	2,523.0	2,463.5	5.7	11.0	40.18	-575.1	106.2	527.6	515.5	12.05	43.782	
2,700.0	2,695.2	2,621.4	2,558.6	6.0	11.5	40.51	-599.4	111.4	545.4	532.8	12.57	43.373	
2,800.0	2,794.7	2,719.7	2,653.8	6.2	12.1	40.82	-623.7	116.6	563.2	550.1	13.10	42.988	
2,900.0	2,894.2	2,818.1	2,749.0	6.5	12.6	41.11	-648.0	121.8	581.0	567.4	13.63	42.623	
3,000.0	2,993.7	2,916.4	2,844.1	6.8	13.1	41.39	-672.2	127.0	598.9	584.7	14.17	42.277	
3,100.0	3,093.2	3,014.8	2,939.3	7.0	13.6	41.65	-696.5	132.2	616.7	602.0	14.70	41.950	
3,200.0	3,192.8	3,113.1	3,034.5	7.3	14.2	41.89	-720.8	137.4	634.6	619.4	15.24	41.640	
3,300.0	3,292.3	3,211.5	3,129.6	7.6	14.7	42.12	-745.1	142.6	652.5	636.7	15.78	41.346	
3,400.0	3,391.8	3,309.9	3,224.8	7.9	15.2	42.34	-769.4	147.8	670.4	654.0	16.32	41.067	
3,500.0	3,491.3	3,408.2	3,320.0	8.1	15.7	42.55	-793.7	153.0	688.3	671.4	16.87	40.802	
3,600.0	3,590.8	3,506.6	3,415.1	8.4	16.3	42.74	-818.0	158.2	706.2	688.8	17.41	40.550	
3,700.0	3,690.4	3,604.9	3,510.3	8.7	16.8	42.93	-842.3	163.4	724.1	706.1	17.96	40.310	
3,800.0	3,789.9	3,703.3	3,605.5	9.0	17.3	43.11	-866.6	168.6	742.0	723.5	18.51	40.082	
3,900.0	3,889.4	3,801.6	3,700.6	9.3	17.8	43.27	-890.9	173.7	759.9	740.9	19.06	39.864	
4,000.0	3,988.9	3,900.0	3,795.8	9.5	18.4	43.44	-915.2	178.9	777.9	758.3	19.62	39.656	
4,100.0	4,088.5	3,998.3	3,891.0	9.8	18.9	43.59	-939.5	184.1	795.8	775.7	20.17	39.458	
4,200.0	4,188.0	4,096.7	3,986.1	10.1	19.4	43.74	-963.8	189.3	813.8	793.0	20.72	39.268	
4,300.0	4,287.5	4,195.0	4,081.3	10.4	20.0	43.88	-988.1	194.5	831.7	810.4	21.28	39.086	
4,400.0	4,387.0	4,293.4	4,176.4	10.7	20.5	44.01	-1,012.4	199.7	849.7	827.8	21.84	38.913	
4,500.0	4,486.5	4,391.8	4,271.6	11.0	21.0	44.14	-1,036.7	204.9	867.6	845.2	22.39	38.746	
4,600.0	4,586.1	4,490.1	4,366.8	11.2	21.5	44.27	-1,061.0	210.1	885.6	862.6	22.95	38.586	
4,700.0	4,685.6	4,588.5	4,461.9	11.5	22.1	44.39	-1,085.3	215.3	903.6	880.1	23.51	38.433	
4,800.0	4,785.1	4,686.8	4,557.1	11.8	22.6	44.50	-1,109.6	220.5	921.5	897.5	24.07	38.286	
4,900.0	4,884.6	4,785.2	4,652.3	12.1	23.1	44.61	-1,133.9	225.7	939.5	914.9	24.63	38.145	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peterson 14X-434
Project:	SEC.14-T5N-R64W	**TVD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peterson 14X-434	**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 (9-12-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14Y-304 - Wellbore #1 - Plan #1 (9-12-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,984.2	4,883.5	4,747.4	12.4	23.7	44.72	-1,158.2	230.9	957.5	932.3	25.19	38.009	
5,100.0	5,083.7	4,981.9	4,842.6	12.7	24.2	44.82	-1,182.5	236.1	975.5	949.7	25.75	37.878	
5,200.0	5,183.2	5,080.2	4,937.8	13.0	24.7	44.92	-1,206.8	241.3	993.5	967.1	26.32	37.752	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peterson 14X-434
Project:	SEC.14-T5N-R64W	**TVD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peterson 14X-434	**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 (9-12-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14Y-414 - Wellbore #1 - Plan #2 (9-12-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	177.26	-58.3	2.8	58.4				
100.0	100.0	100.0	100.0	0.1	0.1	177.26	-58.3	2.8	58.4	58.1	0.22	259.632	
200.0	200.0	200.0	200.0	0.3	0.3	177.26	-58.3	2.8	58.4	57.7	0.67	86.544	
300.0	300.0	300.0	300.0	0.6	0.6	177.26	-58.3	2.8	58.4	57.2	1.12	51.926	
400.0	400.0	400.0	400.0	0.8	0.8	177.26	-58.3	2.8	58.4	56.8	1.57	37.090	
500.0	500.0	500.0	500.0	1.0	1.0	177.26	-58.3	2.8	58.4	56.3	2.02	28.848	
600.0	600.0	600.0	600.0	1.2	1.2	177.26	-58.3	2.8	58.4	55.9	2.47	23.603	
700.0	700.0	700.0	700.0	1.5	1.5	177.26	-58.3	2.8	58.4	55.4	2.92	19.972	
800.0	800.0	800.0	800.0	1.7	1.7	177.26	-58.3	2.8	58.4	55.0	3.37	17.309	CC, ES
900.0	900.0	898.0	898.0	1.9	1.9	176.90	-59.9	3.2	60.0	56.2	3.79	15.839	
1,000.0	1,000.0	995.8	995.7	2.1	2.1	175.93	-64.7	4.6	65.0	60.8	4.19	15.514	
1,100.0	1,100.0	1,093.1	1,092.6	2.4	2.2	174.60	-72.7	6.9	73.4	68.8	4.61	15.926	
1,200.0	1,200.0	1,189.8	1,188.6	2.6	2.5	173.19	-83.8	10.0	85.1	80.1	5.05	16.873	
1,300.0	1,300.0	1,285.6	1,283.2	2.8	2.7	171.87	-97.8	14.0	100.2	94.7	5.50	18.204	
1,400.0	1,400.0	1,380.3	1,376.3	3.0	3.0	170.71	-114.6	18.7	118.6	112.6	5.99	19.800	
1,500.0	1,500.0	1,476.6	1,470.5	3.3	3.3	169.74	-134.2	24.3	139.5	133.0	6.50	21.458	
1,600.0	1,600.0	1,574.6	1,566.3	3.5	3.7	34.55	-154.2	30.0	159.3	152.5	6.75	23.596	
1,700.0	1,699.8	1,673.2	1,662.5	3.6	4.1	34.71	-174.4	35.7	176.2	169.1	7.15	24.634	
1,780.3	1,779.9	1,752.6	1,740.2	3.8	4.4	35.27	-190.6	40.3	187.8	180.3	7.49	25.080	
1,800.0	1,799.5	1,772.1	1,759.2	3.8	4.5	35.47	-194.6	41.4	190.4	182.8	7.57	25.143	
1,900.0	1,899.0	1,871.2	1,856.0	4.0	4.9	36.43	-214.9	47.1	203.8	195.7	8.02	25.413	
2,000.0	1,998.5	1,970.2	1,952.8	4.3	5.3	37.27	-235.1	52.9	217.1	208.7	8.47	25.626	
2,100.0	2,098.0	2,069.3	2,049.6	4.5	5.8	38.02	-255.4	58.6	230.6	221.6	8.94	25.793	
2,200.0	2,197.5	2,168.3	2,146.4	4.7	6.2	38.68	-275.6	64.4	244.0	234.6	9.41	25.923	
2,300.0	2,297.1	2,267.4	2,243.2	5.0	6.7	39.27	-295.9	70.1	257.5	247.6	9.90	26.022	
2,400.0	2,396.6	2,366.4	2,340.0	5.2	7.1	39.81	-316.2	75.8	271.0	260.6	10.39	26.097	
2,500.0	2,496.1	2,465.5	2,436.7	5.5	7.5	40.29	-336.4	81.6	284.6	273.7	10.88	26.152	
2,600.0	2,595.6	2,564.5	2,533.5	5.7	8.0	40.73	-356.7	87.3	298.1	286.7	11.38	26.190	
2,700.0	2,695.2	2,663.6	2,630.3	6.0	8.4	41.13	-377.0	93.1	311.7	299.8	11.89	26.216	
2,800.0	2,794.7	2,762.6	2,727.1	6.2	8.9	41.49	-397.2	98.8	325.3	312.9	12.40	26.232	
2,900.0	2,894.2	2,861.7	2,823.9	6.5	9.3	41.83	-417.5	104.5	338.9	326.0	12.92	26.239	
3,000.0	2,993.7	2,960.7	2,920.7	6.8	9.8	42.14	-437.7	110.3	352.5	339.0	13.43	26.239	
3,100.0	3,093.2	3,059.8	3,017.5	7.0	10.3	42.43	-458.0	116.0	366.1	352.1	13.96	26.234	
3,200.0	3,192.8	3,158.8	3,114.3	7.3	10.7	42.70	-478.3	121.8	379.7	365.2	14.48	26.224	
3,300.0	3,292.3	3,257.9	3,211.0	7.6	11.2	42.95	-498.5	127.5	393.4	378.3	15.01	26.211	
3,400.0	3,391.8	3,356.9	3,307.8	7.9	11.6	43.18	-518.8	133.2	407.0	391.5	15.54	26.195	
3,500.0	3,491.3	3,456.0	3,404.6	8.1	12.1	43.40	-539.0	139.0	420.6	404.6	16.07	26.177	
3,600.0	3,590.8	3,555.0	3,501.4	8.4	12.5	43.60	-559.3	144.7	434.3	417.7	16.60	26.158	
3,700.0	3,690.4	3,654.1	3,598.2	8.7	13.0	43.80	-579.6	150.5	447.9	430.8	17.14	26.137	
3,800.0	3,789.9	3,753.1	3,695.0	9.0	13.5	43.98	-599.8	156.2	461.6	443.9	17.68	26.115	
3,900.0	3,889.4	3,852.2	3,791.8	9.3	13.9	44.14	-620.1	162.0	475.3	457.0	18.21	26.092	
4,000.0	3,988.9	3,951.3	3,888.6	9.5	14.4	44.31	-640.3	167.7	488.9	470.2	18.76	26.069	
4,100.0	4,088.5	4,050.3	3,985.3	9.8	14.8	44.46	-660.6	173.4	502.6	483.3	19.30	26.046	
4,200.0	4,188.0	4,149.4	4,082.1	10.1	15.3	44.60	-680.9	179.2	516.3	496.4	19.84	26.022	
4,300.0	4,287.5	4,248.4	4,178.9	10.4	15.8	44.74	-701.1	184.9	530.0	509.6	20.38	25.998	
4,400.0	4,387.0	4,347.5	4,275.7	10.7	16.2	44.87	-721.4	190.7	543.6	522.7	20.93	25.975	
4,500.0	4,486.5	4,446.5	4,372.5	11.0	16.7	44.99	-741.7	196.4	557.3	535.8	21.48	25.951	
4,600.0	4,586.1	4,545.6	4,469.3	11.2	17.1	45.11	-761.9	202.1	571.0	549.0	22.02	25.928	
4,700.0	4,685.6	4,644.6	4,566.1	11.5	17.6	45.22	-782.2	207.9	584.7	562.1	22.57	25.905	
4,800.0	4,785.1	4,743.7	4,662.9	11.8	18.1	45.32	-802.4	213.6	598.4	575.3	23.12	25.883	
4,900.0	4,884.6	4,842.7	4,759.7	12.1	18.5	45.43	-822.7	219.4	612.1	588.4	23.67	25.860	

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 Peterson 14X-434
Project:	SEC.14-T5N-R64W	**TVD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peterson 14X-434	**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 (9-12-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14Y-414 - Wellbore #1 - Plan #2 (9-12-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,984.2	4,941.8	4,856.4	12.4	19.0	45.52	-843.0	225.1	625.8	601.5	24.22	25.838	
5,100.0	5,083.7	5,040.8	4,953.2	12.7	19.5	45.62	-863.2	230.8	639.5	614.7	24.77	25.816	
5,200.0	5,183.2	5,139.9	5,050.0	13.0	19.9	45.70	-883.5	236.6	653.2	627.8	25.32	25.795	
5,237.1	5,220.1	5,176.7	5,086.0	13.1	20.1	45.74	-891.0	238.7	658.2	632.7	25.53	25.787	
5,300.0	5,282.8	5,238.9	5,146.7	13.2	20.4	45.88	-903.7	242.3	667.3	641.5	25.85	25.818	
5,400.0	5,382.6	5,353.3	5,258.8	13.4	20.8	45.94	-926.4	248.7	683.1	656.8	26.31	25.964	
5,500.0	5,482.6	5,482.0	5,385.6	13.6	21.2	45.82	-947.0	254.6	697.5	670.8	26.72	26.105	
5,517.4	5,500.0	5,504.6	5,408.0	13.6	21.2	-179.62	-950.1	255.4	699.9	666.3	33.55	20.857	
5,600.0	5,582.6	5,612.0	5,514.6	13.8	21.5	-179.91	-962.3	258.9	709.2	675.3	33.98	20.873	
5,700.0	5,682.6	5,743.1	5,645.3	14.0	21.7	179.87	-972.0	261.6	716.6	682.2	34.42	20.822	
5,800.0	5,782.6	5,874.9	5,777.0	14.1	21.9	179.78	-975.9	262.8	719.6	684.8	34.80	20.680	
5,894.1	5,876.6	5,974.5	5,876.6	14.3	22.0	179.78	-976.0	262.8	719.7	684.6	35.08	20.514	
5,900.0	5,882.6	5,980.4	5,882.6	14.3	22.0	-90.22	-976.0	262.8	719.7	691.4	28.30	25.434	
5,950.0	5,932.5	6,030.6	5,932.7	14.4	22.1	-90.22	-976.0	260.7	719.7	691.3	28.44	25.304	
6,000.0	5,982.2	6,080.8	5,982.6	14.4	22.1	-90.21	-976.0	255.3	719.7	691.1	28.56	25.202	
6,050.0	6,031.5	6,131.0	6,032.0	14.5	22.1	-90.21	-976.0	246.7	719.7	691.1	28.64	25.126	
6,100.0	6,080.1	6,181.1	6,080.8	14.5	22.2	-90.20	-976.0	234.9	719.7	691.0	28.70	25.073	
6,150.0	6,127.8	6,231.3	6,128.6	14.5	22.2	-90.20	-976.0	219.9	719.7	690.9	28.75	25.035	
6,200.0	6,174.5	6,281.5	6,175.4	14.6	22.2	-90.19	-976.0	201.7	719.7	690.9	28.78	25.004	
6,250.0	6,219.8	6,331.6	6,220.9	14.6	22.2	-90.18	-976.0	180.6	719.7	690.9	28.82	24.969	
6,300.0	6,263.7	6,381.8	6,264.8	14.6	22.2	-90.17	-976.0	156.5	719.7	690.8	28.88	24.919	
6,350.0	6,306.0	6,431.9	6,307.1	14.6	22.2	-90.16	-976.0	129.6	719.7	690.7	28.97	24.839	
6,400.0	6,346.4	6,482.0	6,347.6	14.6	22.2	-90.15	-976.0	100.0	719.7	690.6	29.12	24.714	
6,450.0	6,384.8	6,532.2	6,386.0	14.6	22.2	-90.14	-976.0	67.8	719.7	690.3	29.34	24.526	
6,500.0	6,421.0	6,582.3	6,422.2	14.7	22.2	-90.13	-976.0	33.2	719.7	690.0	29.66	24.261	
6,550.0	6,454.9	6,632.4	6,456.0	14.7	22.2	-90.12	-976.0	-3.8	719.7	689.6	30.10	23.907	
6,600.0	6,486.3	6,682.5	6,487.4	14.9	22.2	-90.10	-976.0	-42.8	719.7	689.0	30.68	23.458	
6,650.0	6,515.1	6,732.5	6,516.1	15.2	22.2	-90.09	-976.0	-83.8	719.7	688.3	31.41	22.913	
6,700.0	6,541.2	6,782.6	6,542.0	15.6	22.2	-90.08	-976.0	-126.7	719.7	687.4	32.30	22.279	
6,750.0	6,564.4	6,832.7	6,565.1	16.2	22.3	-90.06	-976.0	-171.1	719.7	686.3	33.37	21.569	
6,800.0	6,584.7	6,882.7	6,585.2	16.8	22.4	-90.05	-976.0	-216.9	719.7	685.1	34.60	20.800	
6,850.0	6,601.9	6,932.7	6,602.3	17.6	22.5	-90.03	-976.0	-263.9	719.7	683.7	36.00	19.991	
6,900.0	6,616.1	6,982.8	6,616.3	18.4	22.7	-90.02	-976.0	-311.9	719.7	682.1	37.55	19.165	
6,950.0	6,627.0	7,032.8	6,627.1	19.2	23.0	-90.00	-976.0	-360.7	719.7	680.4	39.24	18.339	
7,000.0	6,634.8	7,082.8	6,634.7	20.2	23.4	-89.99	-976.0	-410.1	719.7	678.6	41.06	17.529	
7,050.0	6,639.3	7,132.8	6,639.0	21.1	24.0	-89.98	-976.0	-459.9	719.7	676.7	42.97	16.748	
7,085.0	6,640.5	7,167.7	6,640.1	21.9	24.5	-89.97	-976.0	-494.9	719.7	675.3	44.36	16.225	
7,100.0	6,640.7	7,182.7	6,640.3	22.2	24.7	-89.97	-976.0	-509.9	719.7	674.7	44.97	16.005	
7,200.0	6,641.9	7,282.7	6,641.5	24.3	26.4	-89.97	-976.0	-609.9	719.7	670.5	49.20	14.628	
7,300.0	6,643.1	7,382.7	6,642.7	26.6	28.4	-89.97	-976.0	-709.9	719.7	666.0	53.68	13.408	
7,400.0	6,644.3	7,482.7	6,643.9	28.9	30.6	-89.97	-976.0	-809.9	719.7	661.3	58.35	12.333	
7,500.0	6,645.5	7,582.7	6,645.1	31.4	32.9	-89.97	-976.0	-909.9	719.7	656.5	63.18	11.391	
7,600.0	6,646.6	7,682.7	6,646.3	33.9	35.3	-89.97	-976.0	-1,009.8	719.7	651.6	68.13	10.563	
7,700.0	6,647.8	7,782.7	6,647.5	36.4	37.7	-89.97	-976.0	-1,109.8	719.7	646.5	73.18	9.834	
7,800.0	6,649.0	7,882.7	6,648.7	39.0	40.2	-89.98	-976.0	-1,209.8	719.7	641.4	78.31	9.191	
7,900.0	6,650.2	7,982.7	6,649.9	41.6	42.8	-89.98	-976.0	-1,309.8	719.7	636.2	83.50	8.619	
8,000.0	6,651.4	8,082.7	6,651.1	44.2	45.3	-89.98	-976.0	-1,409.8	719.7	630.9	88.74	8.110	
8,100.0	6,652.6	8,182.7	6,652.3	46.9	47.9	-89.98	-976.0	-1,509.8	719.7	625.7	94.02	7.654	
8,200.0	6,653.8	8,282.7	6,653.5	49.5	50.5	-89.98	-976.0	-1,609.8	719.7	620.3	99.34	7.244	
8,300.0	6,655.0	8,382.7	6,654.7	52.2	53.2	-89.98	-976.0	-1,709.8	719.7	615.0	104.70	6.874	
8,400.0	6,656.1	8,482.7	6,655.9	54.9	55.8	-89.98	-976.0	-1,809.8	719.7	609.6	110.07	6.538	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peterson 14X-434
Project:	SEC.14-T5N-R64W	**TVD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peterson 14X-434	**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 (9-12-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14Y-414 - Wellbore #1 - Plan #2 (9-12-14)

Offset Site Error: 0.0 ft

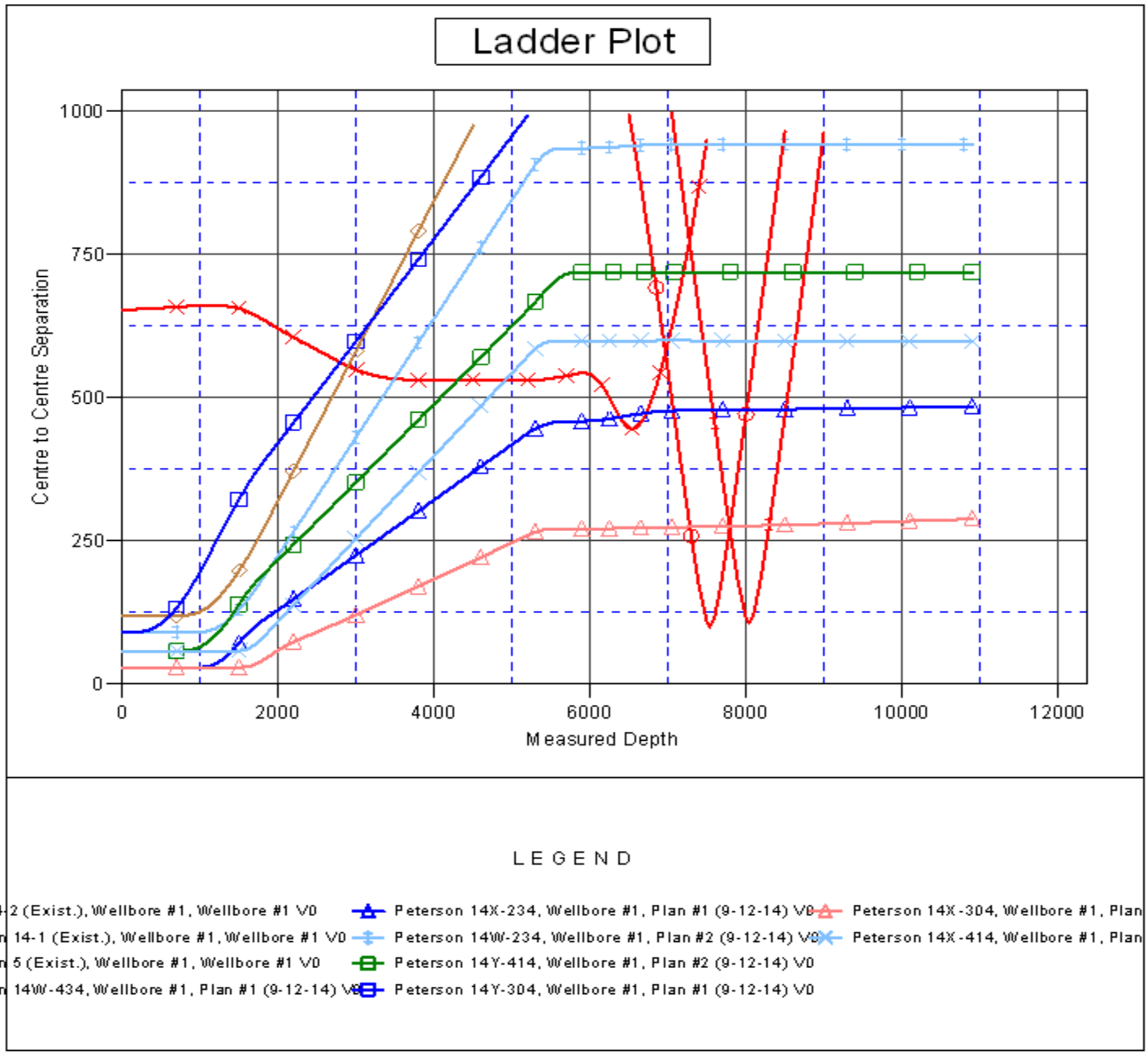
Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,500.0	6,657.3	8,582.7	6,657.1	57.6	58.5	-89.99	-976.0	-1,909.8	719.7	604.2	115.48	6.232	
8,600.0	6,658.5	8,682.7	6,658.3	60.3	61.2	-89.99	-976.0	-2,009.8	719.7	598.8	120.90	5.953	
8,700.0	6,659.7	8,782.7	6,659.5	63.1	63.9	-89.99	-976.0	-2,109.8	719.7	593.3	126.34	5.697	
8,800.0	6,660.9	8,882.7	6,660.7	65.8	66.6	-89.99	-976.0	-2,209.8	719.7	587.9	131.79	5.461	
8,900.0	6,662.1	8,982.7	6,662.0	68.5	69.3	-89.99	-976.0	-2,309.8	719.7	582.4	137.26	5.243	
9,000.0	6,663.3	9,082.7	6,663.2	71.3	72.0	-89.99	-976.0	-2,409.7	719.7	576.9	142.74	5.042	
9,100.0	6,664.4	9,182.7	6,664.4	74.0	74.7	-89.99	-976.0	-2,509.7	719.7	571.5	148.23	4.855	
9,200.0	6,665.6	9,282.7	6,665.6	76.8	77.5	-89.99	-976.0	-2,609.7	719.7	566.0	153.72	4.682	
9,300.0	6,666.8	9,382.7	6,666.8	79.5	80.2	-90.00	-976.0	-2,709.7	719.7	560.4	159.23	4.520	
9,400.0	6,668.0	9,482.7	6,668.0	82.3	82.9	-90.00	-976.0	-2,809.7	719.7	554.9	164.75	4.368	
9,500.0	6,669.2	9,582.7	6,669.2	85.0	85.7	-90.00	-976.0	-2,909.7	719.7	549.4	170.27	4.227	
9,600.0	6,670.4	9,682.7	6,670.4	87.8	88.4	-90.00	-976.0	-3,009.7	719.7	543.9	175.79	4.094	
9,700.0	6,671.6	9,782.7	6,671.6	90.6	91.2	-90.00	-976.0	-3,109.7	719.7	538.3	181.33	3.969	
9,800.0	6,672.8	9,882.7	6,672.8	93.4	93.9	-90.00	-976.0	-3,209.7	719.7	532.8	186.87	3.851	
9,900.0	6,673.9	9,982.7	6,674.0	96.1	96.7	-90.00	-976.0	-3,309.7	719.7	527.3	192.41	3.740	
10,000.0	6,675.1	10,082.7	6,675.2	98.9	99.5	-90.01	-976.0	-3,409.7	719.7	521.7	197.96	3.636	
10,100.0	6,676.3	10,182.7	6,676.4	101.7	102.2	-90.01	-976.0	-3,509.7	719.7	516.2	203.51	3.536	
10,200.0	6,677.5	10,282.7	6,677.6	104.5	105.0	-90.01	-976.0	-3,609.7	719.7	510.6	209.06	3.442	
10,300.0	6,678.7	10,382.7	6,678.8	107.2	107.8	-90.01	-976.0	-3,709.7	719.7	505.1	214.62	3.353	
10,400.0	6,679.9	10,482.7	6,680.0	110.0	110.5	-90.01	-976.0	-3,809.6	719.7	499.5	220.18	3.269	
10,500.0	6,681.1	10,582.7	6,681.2	112.8	113.3	-90.01	-976.0	-3,909.6	719.7	493.9	225.74	3.188	
10,600.0	6,682.2	10,682.7	6,682.4	115.6	116.1	-90.01	-976.0	-4,009.6	719.7	488.4	231.31	3.111	
10,700.0	6,683.4	10,782.7	6,683.6	118.4	118.8	-90.02	-976.0	-4,109.6	719.7	482.8	236.88	3.038	
10,800.0	6,684.6	10,882.7	6,684.8	121.2	121.6	-90.02	-976.0	-4,209.6	719.7	477.2	242.45	2.968	
10,870.6	6,685.5	10,953.4	6,685.7	123.1	123.6	-90.02	-976.0	-4,280.2	719.7	473.3	246.39	2.921	
10,900.0	6,685.8	10,979.5	6,686.0	123.9	124.3	-90.02	-976.0	-4,306.4	719.7	471.7	247.93	2.903	
10,916.2	6,686.0	10,979.5	6,686.0	124.2	124.3	-90.02	-976.0	-4,306.4	719.9	471.7	248.22	2.900 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peterson 14X-434
Project:	SEC.14-T5N-R64W	**TVD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peterson 14X-434	**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 (9-12-14)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4586.0ft (Ensign Rig - RKB	Coordinates are relative to: Peterson 14X-434
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: 0.64°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peterson 14X-434
Project:	SEC.14-T5N-R64W	**TVD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (Ensign Rig - RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peterson 14X-434	**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 (9-12-14)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4586.0ft (Ensign Rig - RKB	Coordinates are relative to: Peterson 14X-434
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: 0.64°