PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Peterson 14X-304**

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	1388623.03	3275956.06	40.395940	-104.509210	

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

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 1427'FSL & 310'FEL	1.0	0.0	0.0	Point
BHL 1395'FSL & 500'FWL	6586.0	-14.2	-4339.6	Point

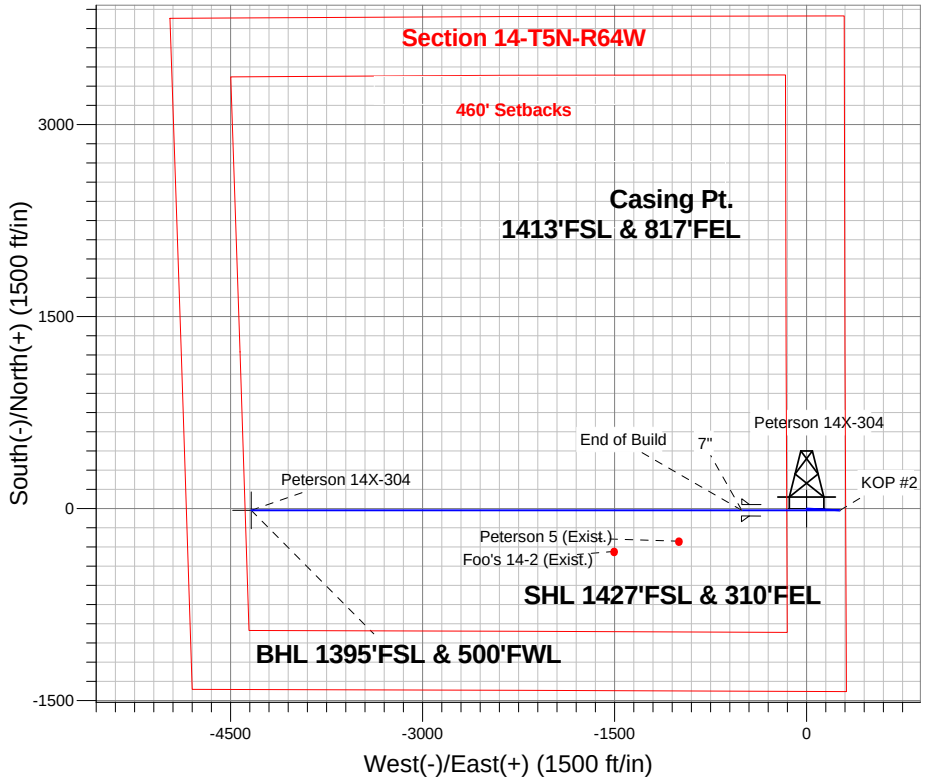
Azimuths to True North
Magnetic North: 8.36°

Magnetic Field
Strength: 52870.6snT
Dip Angle: 66.99°
Date: 3/7/2014
Model: IGRF2010

ANNOTATIONS

TVD	MD	Annotation
2000.0	2000.0	KOP #1
5835.4	5845.5	KOP #2
6599.4	7048.2	End of Build

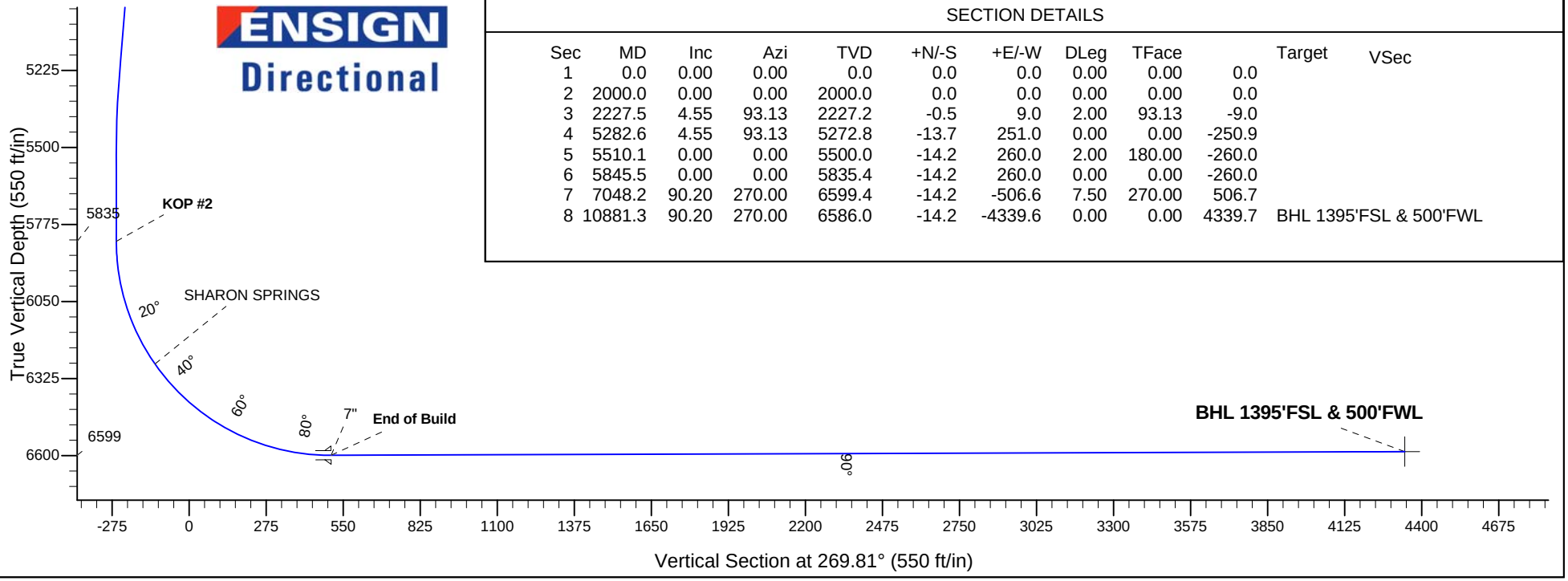
Peterson 14WX-HZ Pad Sec.14-T5N-R64W
Peterson 14X-304
Plan #1 (3-07-14)
11:24, March 10 2014



ENSIGN Directional

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace		Target	VSec
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0		
2	2000.0	0.00	0.00	2000.0	0.0	0.0	0.00	0.00	0.0		
3	2227.5	4.55	93.13	2227.2	-0.5	9.0	2.00	93.13	-9.0		
4	5282.6	4.55	93.13	5272.8	-13.7	251.0	0.00	0.00	-250.9		
5	5510.1	0.00	0.00	5500.0	-14.2	260.0	2.00	180.00	-260.0		
6	5845.5	0.00	0.00	5835.4	-14.2	260.0	0.00	0.00	-260.0		
7	7048.2	90.20	270.00	6599.4	-14.2	-506.6	7.50	270.00	506.7		
8	10881.3	90.20	270.00	6586.0	-14.2	-4339.6	0.00	0.00	4339.7	BHL 1395'FSL & 500'FWL	



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.14-T5N-R64W
Peterson 14WX-HZ Pad Sec.14-T5N-R64W
Peterson 14X-304

Wellbore #1

Plan: Plan #1 (3-07-14)

Standard Planning Report

10 March, 2014

Database:	Landmark	**Local Co-ordinate Reference:**	Well Peterson 14X-304
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 4586.0ft (RKB - 15')
Project:	SEC.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (RKB - 15')
Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**North Reference:**	True
Well:	Peterson 14X-304	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-07-14)		

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-304

Well Position	**+N/-S**	-61.9 ft	**Northing:**	1,388,623.03 ft	**Latitude:**	40.395940
	+E/-W	0.0 ft	**Easting:**	3,275,956.06 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	3/7/2014	8.36	66.99	52,871

Design Plan #1 (3-07-14)

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	269.81

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,227.5	4.55	93.13	2,227.2	-0.5	9.0	2.00	2.00	0.00	93.13	
5,282.6	4.55	93.13	5,272.8	-13.7	251.0	0.00	0.00	0.00	0.00	
5,510.1	0.00	0.00	5,500.0	-14.2	260.0	2.00	-2.00	0.00	180.00	
5,845.5	0.00	0.00	5,835.4	-14.2	260.0	0.00	0.00	0.00	0.00	
7,048.2	90.20	270.00	6,599.4	-14.2	-506.6	7.50	7.50	0.00	270.00	
10,881.3	90.20	270.00	6,586.0	-14.2	-4,339.6	0.00	0.00	0.00	0.00	BHL 1395'FSL & 5(

Database:	Landmark	**Local Co-ordinate Reference:**	Well Peterson 14X-304
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 4586.0ft (RKB - 15')
Project:	SEC.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (RKB - 15')
Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**North Reference:**	True
Well:	Peterson 14X-304	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-07-14)		

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 1427'FSL & 310'FEL - SHL 1576'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
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP #1									
2,100.0	2.00	93.13	2,100.0	-0.1	1.7	-1.7	2.00	2.00	0.00
2,200.0	4.00	93.13	2,199.8	-0.4	7.0	-7.0	2.00	2.00	0.00
2,227.5	4.55	93.13	2,227.2	-0.5	9.0	-9.0	2.00	2.00	0.00
2,300.0	4.55	93.13	2,299.5	-0.8	14.8	-14.8	0.00	0.00	0.00
2,400.0	4.55	93.13	2,399.2	-1.2	22.7	-22.7	0.00	0.00	0.00
2,500.0	4.55	93.13	2,498.9	-1.7	30.6	-30.6	0.00	0.00	0.00
2,600.0	4.55	93.13	2,598.6	-2.1	38.5	-38.5	0.00	0.00	0.00
2,700.0	4.55	93.13	2,698.3	-2.5	46.4	-46.4	0.00	0.00	0.00
2,800.0	4.55	93.13	2,798.0	-3.0	54.4	-54.3	0.00	0.00	0.00
2,900.0	4.55	93.13	2,897.6	-3.4	62.3	-62.3	0.00	0.00	0.00
3,000.0	4.55	93.13	2,997.3	-3.8	70.2	-70.2	0.00	0.00	0.00
3,100.0	4.55	93.13	3,097.0	-4.3	78.1	-78.1	0.00	0.00	0.00
3,200.0	4.55	93.13	3,196.7	-4.7	86.0	-86.0	0.00	0.00	0.00
3,300.0	4.55	93.13	3,296.4	-5.1	94.0	-93.9	0.00	0.00	0.00
3,400.0	4.55	93.13	3,396.1	-5.6	101.9	-101.9	0.00	0.00	0.00
3,412.0	4.55	93.13	3,408.0	-5.6	102.8	-102.8	0.00	0.00	0.00
PARKMAN									
3,500.0	4.55	93.13	3,495.8	-6.0	109.8	-109.8	0.00	0.00	0.00
3,600.0	4.55	93.13	3,595.4	-6.4	117.7	-117.7	0.00	0.00	0.00
3,700.0	4.55	93.13	3,695.1	-6.9	125.6	-125.6	0.00	0.00	0.00
3,800.0	4.55	93.13	3,794.8	-7.3	133.6	-133.5	0.00	0.00	0.00
3,900.0	4.55	93.13	3,894.5	-7.7	141.5	-141.5	0.00	0.00	0.00
4,000.0	4.55	93.13	3,994.2	-8.2	149.4	-149.4	0.00	0.00	0.00
4,100.0	4.55	93.13	4,093.9	-8.6	157.3	-157.3	0.00	0.00	0.00
4,156.3	4.55	93.13	4,150.0	-8.8	161.8	-161.8	0.00	0.00	0.00
SUSSEX									
4,200.0	4.55	93.13	4,193.5	-9.0	165.2	-165.2	0.00	0.00	0.00
4,300.0	4.55	93.13	4,293.2	-9.5	173.2	-173.1	0.00	0.00	0.00
4,400.0	4.55	93.13	4,392.9	-9.9	181.1	-181.0	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-304	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-07-14)		

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	4.55	93.13	4,492.6	-10.3	189.0	-189.0	0.00	0.00	0.00
4,577.6	4.55	93.13	4,570.0	-10.7	195.2	-195.1	0.00	0.00	0.00
SHANNON									
4,600.0	4.55	93.13	4,592.3	-10.8	196.9	-196.9	0.00	0.00	0.00
4,700.0	4.55	93.13	4,692.0	-11.2	204.8	-204.8	0.00	0.00	0.00
4,800.0	4.55	93.13	4,791.7	-11.6	212.8	-212.7	0.00	0.00	0.00
4,900.0	4.55	93.13	4,891.3	-12.1	220.7	-220.6	0.00	0.00	0.00
5,000.0	4.55	93.13	4,991.0	-12.5	228.6	-228.6	0.00	0.00	0.00
5,100.0	4.55	93.13	5,090.7	-12.9	236.5	-236.5	0.00	0.00	0.00
5,200.0	4.55	93.13	5,190.4	-13.4	244.4	-244.4	0.00	0.00	0.00
5,282.6	4.55	93.13	5,272.8	-13.7	251.0	-250.9	0.00	0.00	0.00
5,300.0	4.20	93.13	5,290.1	-13.8	252.3	-252.3	2.00	-2.00	0.00
5,400.0	2.20	93.13	5,389.9	-14.1	257.9	-257.8	2.00	-2.00	0.00
5,500.0	0.20	93.13	5,489.9	-14.2	260.0	-259.9	2.00	-2.00	0.00
5,510.1	0.00	0.00	5,500.0	-14.2	260.0	-260.0	2.00	-2.00	0.00
5,600.0	0.00	0.00	5,589.9	-14.2	260.0	-260.0	0.00	0.00	0.00
5,700.0	0.00	0.00	5,689.9	-14.2	260.0	-260.0	0.00	0.00	0.00
5,800.0	0.00	0.00	5,789.9	-14.2	260.0	-260.0	0.00	0.00	0.00
5,845.5	0.00	0.00	5,835.4	-14.2	260.0	-260.0	0.00	0.00	0.00
KOP #2									
5,900.0	4.08	270.00	5,889.8	-14.2	258.1	-258.0	7.49	7.49	0.00
6,000.0	11.58	270.00	5,988.8	-14.2	244.4	-244.4	7.50	7.50	0.00
6,100.0	19.08	270.00	6,085.2	-14.2	218.0	-218.0	7.50	7.50	0.00
6,200.0	26.58	270.00	6,177.3	-14.2	179.2	-179.2	7.50	7.50	0.00
6,300.0	34.08	270.00	6,263.6	-14.2	128.8	-128.7	7.50	7.50	0.00
6,311.5	34.94	270.00	6,273.0	-14.2	122.3	-122.2	7.50	7.50	0.00
SHARON SPRINGS									
6,400.0	41.58	270.00	6,342.5	-14.2	67.5	-67.4	7.50	7.50	0.00
6,500.0	49.08	270.00	6,412.7	-14.2	-3.6	3.6	7.50	7.50	0.00
6,600.0	56.58	270.00	6,473.1	-14.2	-83.2	83.3	7.50	7.50	0.00
6,700.0	64.08	270.00	6,522.6	-14.2	-170.1	170.1	7.50	7.50	0.00
6,800.0	71.58	270.00	6,560.3	-14.2	-262.6	262.7	7.50	7.50	0.00
6,900.0	79.08	270.00	6,585.6	-14.2	-359.3	359.3	7.50	7.50	0.00
7,000.0	86.58	270.00	6,598.0	-14.2	-458.4	458.5	7.50	7.50	0.00
7,048.2	90.20	270.00	6,599.4	-14.2	-506.6	506.6	7.50	7.50	0.00
End of Build - 7"									
7,100.0	90.20	270.00	6,599.2	-14.2	-558.4	558.4	0.00	0.00	0.00
7,200.0	90.20	270.00	6,598.8	-14.2	-658.4	658.4	0.00	0.00	0.00
7,300.0	90.20	270.00	6,598.5	-14.2	-758.4	758.4	0.00	0.00	0.00
7,400.0	90.20	270.00	6,598.2	-14.2	-858.4	858.4	0.00	0.00	0.00
7,500.0	90.20	270.00	6,597.8	-14.2	-958.4	958.4	0.00	0.00	0.00
7,600.0	90.20	270.00	6,597.5	-14.2	-1,058.4	1,058.4	0.00	0.00	0.00
7,700.0	90.20	270.00	6,597.1	-14.2	-1,158.4	1,158.4	0.00	0.00	0.00
7,800.0	90.20	270.00	6,596.8	-14.2	-1,258.4	1,258.4	0.00	0.00	0.00
7,900.0	90.20	270.00	6,596.4	-14.2	-1,358.4	1,358.4	0.00	0.00	0.00
8,000.0	90.20	270.00	6,596.1	-14.2	-1,458.4	1,458.4	0.00	0.00	0.00
8,100.0	90.20	270.00	6,595.7	-14.2	-1,558.4	1,558.4	0.00	0.00	0.00
8,200.0	90.20	270.00	6,595.4	-14.2	-1,658.4	1,658.4	0.00	0.00	0.00
8,300.0	90.20	270.00	6,595.0	-14.2	-1,758.4	1,758.4	0.00	0.00	0.00
8,400.0	90.20	270.00	6,594.7	-14.2	-1,858.4	1,858.4	0.00	0.00	0.00
8,500.0	90.20	270.00	6,594.3	-14.2	-1,958.4	1,958.4	0.00	0.00	0.00
8,600.0	90.20	270.00	6,594.0	-14.2	-2,058.4	2,058.4	0.00	0.00	0.00

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Project:	SEC.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (RKB - 15')
Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**North Reference:**	True
Well:	Peterson 14X-304	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-07-14)		

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	90.20	270.00	6,593.6	-14.2	-2,158.4	2,158.4	0.00	0.00	0.00
8,800.0	90.20	270.00	6,593.3	-14.2	-2,258.4	2,258.4	0.00	0.00	0.00
8,900.0	90.20	270.00	6,592.9	-14.2	-2,358.4	2,358.4	0.00	0.00	0.00
9,000.0	90.20	270.00	6,592.6	-14.2	-2,458.4	2,458.4	0.00	0.00	0.00
9,100.0	90.20	270.00	6,592.2	-14.2	-2,558.4	2,558.4	0.00	0.00	0.00
9,200.0	90.20	270.00	6,591.9	-14.2	-2,658.4	2,658.4	0.00	0.00	0.00
9,300.0	90.20	270.00	6,591.5	-14.2	-2,758.4	2,758.4	0.00	0.00	0.00
9,400.0	90.20	270.00	6,591.2	-14.2	-2,858.4	2,858.4	0.00	0.00	0.00
9,500.0	90.20	270.00	6,590.8	-14.2	-2,958.4	2,958.4	0.00	0.00	0.00
9,600.0	90.20	270.00	6,590.5	-14.2	-3,058.4	3,058.4	0.00	0.00	0.00
9,700.0	90.20	270.00	6,590.1	-14.2	-3,158.4	3,158.4	0.00	0.00	0.00
9,800.0	90.20	270.00	6,589.8	-14.2	-3,258.4	3,258.4	0.00	0.00	0.00
9,900.0	90.20	270.00	6,589.4	-14.2	-3,358.4	3,358.4	0.00	0.00	0.00
10,000.0	90.20	270.00	6,589.1	-14.2	-3,458.4	3,458.4	0.00	0.00	0.00
10,100.0	90.20	270.00	6,588.7	-14.2	-3,558.4	3,558.4	0.00	0.00	0.00
10,200.0	90.20	270.00	6,588.4	-14.2	-3,658.4	3,658.4	0.00	0.00	0.00
10,300.0	90.20	270.00	6,588.0	-14.2	-3,758.4	3,758.4	0.00	0.00	0.00
10,400.0	90.20	270.00	6,587.7	-14.2	-3,858.4	3,858.4	0.00	0.00	0.00
10,500.0	90.20	270.00	6,587.3	-14.2	-3,958.4	3,958.4	0.00	0.00	0.00
10,600.0	90.20	270.00	6,587.0	-14.2	-4,058.4	4,058.4	0.00	0.00	0.00
10,700.0	90.20	270.00	6,586.6	-14.2	-4,158.4	4,158.4	0.00	0.00	0.00
10,800.0	90.20	270.00	6,586.3	-14.2	-4,258.4	4,258.4	0.00	0.00	0.00
10,881.3	90.20	270.00	6,586.0	-14.2	-4,339.6	4,339.7	0.00	0.00	0.00
BHL 1395'FSL & 500'FWL									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,048.2	6,599.4	7"	7	7-1/2

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,412.0	3,408.0	PARKMAN			
4,156.3	4,150.0	SUSSEX			
4,577.6	4,570.0	SHANNON			
6,311.5	6,273.0	SHARON SPRINGS			

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
2,000.0	2,000.0	0.0	0.0	KOP #1
5,845.5	5,835.4	-14.2	260.0	KOP #2
7,048.2	6,599.4	-14.2	-506.6	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-304

Wellbore #1
Plan #1 (3-07-14)

Anticollision Report

10 March, 2014

PDC ENERGY
Growing E&P Value

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peterson 14X-304
Project:	SEC.14-T5N-R64W	**TVD Reference:**	WELL @ 4586.0ft (RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peterson 14X-304	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (3-07-14)	**Offset TVD Reference:**	Offset Datum

Reference Plan #1 (3-07-14)

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.0ft	**Error Surface:**	Elliptical Conic

Warning Levels Evaluated at: 2.00 **Sigma**

Survey Tool Program **Date** 3/7/2014

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	10,880.7	Plan #1 (3-07-14) (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	8,045.7	6,581.9	320.9	142.6	1.799	CC, ES, SF
Peterson 5 (Exist.) - Wellbore #1 - Wellbore #1	7,538.8	6,584.7	240.8	75.5	1.457	Level 3, CC, ES, SF
Peterson 14WX-HZ Pad Sec.14-T5N-R64W						
Peterson 14X-234 - Wellbore #1 - Plan #1 (3-07-14)	1,000.0	1,000.0	58.4	54.1	13.666	CC, ES
Peterson 14X-234 - Wellbore #1 - Plan #1 (3-07-14)	10,881.3	10,825.1	732.7	484.9	2.958	SF
Peterson 14X-414 - Wellbore #1 - Plan #1 (3-07-14)	1,500.0	1,500.0	29.1	22.6	4.471	CC, ES
Peterson 14X-414 - Wellbore #1 - Plan #1 (3-07-14)	10,881.3	10,975.2	342.8	104.4	1.438	Level 3, SF
Peterson 14X-434 - Wellbore #1 - Plan #1 (3-07-14)	1,500.0	1,500.0	29.1	22.6	4.472	CC, ES
Peterson 14X-434 - Wellbore #1 - Plan #1 (3-07-14)	10,881.3	10,936.6	433.4	191.3	1.790	SF

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: 6852-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,100.0	6,599.2	6,585.2	6,585.2	23.2	131.7	-90.59	-335.1	-1,504.1	998.7	843.8	154.93	6.446	
7,200.0	6,598.8	6,584.8	6,584.8	25.4	131.7	-90.53	-335.1	-1,504.1	904.6	747.4	157.13	5.757	
7,300.0	6,598.5	6,584.5	6,584.5	27.7	131.7	-90.46	-335.1	-1,504.1	811.9	652.4	159.43	5.092	
7,400.0	6,598.2	6,584.2	6,584.2	30.1	131.7	-90.40	-335.1	-1,504.1	721.1	559.3	161.81	4.456	
7,500.0	6,597.8	6,583.8	6,583.8	32.6	131.7	-90.34	-335.1	-1,504.1	633.1	468.8	164.27	3.854	
7,600.0	6,597.5	6,583.5	6,583.5	35.1	131.7	-90.28	-335.1	-1,504.1	549.2	382.5	166.77	3.293	
7,700.0	6,597.1	6,583.1	6,583.1	37.7	131.7	-90.22	-335.1	-1,504.1	471.7	302.4	169.32	2.786	
7,800.0	6,596.8	6,582.8	6,582.8	40.2	131.7	-90.15	-335.1	-1,504.1	404.2	232.3	171.90	2.351	
7,900.0	6,596.4	6,582.4	6,582.4	42.9	131.6	-90.09	-335.1	-1,504.1	352.5	178.0	174.51	2.020	
8,000.0	6,596.1	6,582.1	6,582.1	45.5	131.6	-90.03	-335.1	-1,504.1	324.2	147.0	177.14	1.830	
8,045.7	6,595.9	6,581.9	6,581.9	46.7	131.6	-90.00	-335.1	-1,504.1	320.9	142.6	178.36	1.799	CC, ES, SF
8,100.0	6,595.7	6,581.7	6,581.7	48.2	131.6	-89.97	-335.1	-1,504.1	325.5	145.7	179.79	1.810	
8,200.0	6,595.4	6,581.4	6,581.4	50.8	131.6	-89.90	-335.1	-1,504.1	356.1	173.6	182.46	1.952	
8,300.0	6,595.0	6,581.0	6,581.0	53.5	131.6	-89.84	-335.1	-1,504.1	409.4	224.3	185.14	2.212	
8,400.0	6,594.7	6,580.7	6,580.7	56.2	131.6	-89.78	-335.1	-1,504.1	478.0	290.2	187.83	2.545	
8,500.0	6,594.3	6,580.3	6,580.3	58.9	131.6	-89.72	-335.1	-1,504.1	556.2	365.7	190.54	2.919	
8,600.0	6,594.0	6,580.0	6,580.0	61.7	131.6	-89.65	-335.1	-1,504.1	640.5	447.2	193.25	3.314	

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-304
Project:	SEC.14-T5N-R64W	**TVD Reference:**	WELL @ 4586.0ft (RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peterson 14X-304	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (3-07-14)	**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: 6852-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,700.0	6,593.6	6,579.6	6,579.6	64.4	131.6	-89.59	-335.1	-1,504.1	728.7	532.8	195.97	3.719	
8,800.0	6,593.3	6,579.3	6,579.3	67.1	131.6	-89.53	-335.1	-1,504.1	819.7	621.0	198.69	4.126	
8,900.0	6,592.9	6,578.9	6,578.9	69.9	131.6	-89.47	-335.1	-1,504.1	912.6	711.1	201.42	4.531	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peterson 14X-304
Project:	SEC.14-T5N-R64W	**TVD Reference:**	WELL @ 4586.0ft (RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peterson 14X-304	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (3-07-14)	**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: 6887-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
6,600.0	6,473.1	6,460.1	6,460.1	15.2	129.2	-25.57	-255.0	-997.2	945.1	849.5	95.61	9.885	
6,700.0	6,522.6	6,509.6	6,509.6	16.3	130.2	-33.67	-255.0	-997.2	861.5	763.7	97.79	8.809	
6,800.0	6,560.3	6,547.3	6,547.3	17.6	130.9	-46.06	-255.0	-997.2	773.0	660.6	112.40	6.878	
6,900.0	6,585.6	6,572.6	6,572.6	19.3	131.5	-63.36	-255.0	-997.2	681.8	546.2	135.59	5.029	
7,000.0	6,598.0	6,585.0	6,585.0	21.2	131.7	-82.41	-255.0	-997.2	590.1	438.6	151.56	3.894	
7,100.0	6,599.2	6,586.2	6,586.2	23.2	131.7	-90.36	-255.0	-997.2	500.5	345.6	154.96	3.230	
7,200.0	6,598.8	6,585.8	6,585.8	25.4	131.7	-90.28	-255.0	-997.2	415.6	258.5	157.15	2.645	
7,300.0	6,598.5	6,585.5	6,585.5	27.7	131.7	-90.20	-255.0	-997.2	339.1	179.7	159.45	2.127	
7,400.0	6,598.2	6,585.2	6,585.2	30.1	131.7	-90.12	-255.0	-997.2	277.9	116.1	161.84	1.717	
7,500.0	6,597.8	6,584.8	6,584.8	32.6	131.7	-90.03	-255.0	-997.2	243.9	79.6	164.29	1.485	Level 3
7,538.8	6,597.7	6,584.7	6,584.7	33.6	131.7	-90.00	-255.0	-997.2	240.8	75.5	165.26	1.457	Level 3, CC, ES, SF
7,600.0	6,597.5	6,584.5	6,584.5	35.1	131.7	-89.95	-255.0	-997.2	248.5	81.7	166.79	1.490	Level 3
7,700.0	6,597.1	6,584.1	6,584.1	37.7	131.7	-89.87	-255.0	-997.2	289.8	120.4	169.34	1.711	
7,800.0	6,596.8	6,583.8	6,583.8	40.2	131.7	-89.78	-255.0	-997.2	355.3	183.4	171.92	2.067	
7,900.0	6,596.4	6,583.4	6,583.4	42.9	131.7	-89.70	-255.0	-997.2	434.1	259.6	174.53	2.487	
8,000.0	6,596.1	6,583.1	6,583.1	45.5	131.7	-89.62	-255.0	-997.2	520.3	343.1	177.16	2.937	
8,100.0	6,595.7	6,582.7	6,582.7	48.2	131.7	-89.53	-255.0	-997.2	610.7	430.9	179.81	3.396	
8,200.0	6,595.4	6,582.4	6,582.4	50.8	131.6	-89.45	-255.0	-997.2	703.7	521.2	182.47	3.856	
8,300.0	6,595.0	6,582.0	6,582.0	53.5	131.6	-89.37	-255.0	-997.2	798.4	613.2	185.15	4.312	
8,400.0	6,594.7	6,581.7	6,581.7	56.2	131.6	-89.28	-255.0	-997.2	894.2	706.4	187.84	4.761	
8,500.0	6,594.3	6,581.3	6,581.3	58.9	131.6	-89.20	-255.0	-997.2	990.9	800.4	190.54	5.201	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peterson 14X-304
Project:	SEC.14-T5N-R64W	**TVD Reference:**	WELL @ 4586.0ft (RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peterson 14X-304	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (3-07-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14X-234 - Wellbore #1 - Plan #1 (3-07-14)

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	259.650	
200.0	200.0	200.0	200.0	0.3	0.3	177.26	-58.3	2.8	58.4	57.7	0.67	86.550	
300.0	300.0	300.0	300.0	0.6	0.6	177.26	-58.3	2.8	58.4	57.2	1.12	51.930	
400.0	400.0	400.0	400.0	0.8	0.8	177.26	-58.3	2.8	58.4	56.8	1.57	37.093	
500.0	500.0	500.0	500.0	1.0	1.0	177.26	-58.3	2.8	58.4	56.3	2.02	28.850	
600.0	600.0	600.0	600.0	1.2	1.2	177.26	-58.3	2.8	58.4	55.9	2.47	23.605	
700.0	700.0	700.0	700.0	1.5	1.5	177.26	-58.3	2.8	58.4	55.4	2.92	19.973	
800.0	800.0	800.0	800.0	1.7	1.7	177.26	-58.3	2.8	58.4	55.0	3.37	17.310	
900.0	900.0	900.0	900.0	1.9	1.9	177.26	-58.3	2.8	58.4	54.5	3.82	15.274	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	177.26	-58.3	2.8	58.4	54.1	4.27	13.666	CC, ES
1,100.0	1,100.0	1,098.1	1,098.0	2.4	2.3	176.77	-59.9	3.4	60.0	55.3	4.69	12.796	
1,200.0	1,200.0	1,195.9	1,195.7	2.6	2.5	175.43	-64.6	5.2	64.9	59.8	5.09	12.758	
1,300.0	1,300.0	1,293.3	1,292.8	2.8	2.7	173.61	-72.3	8.1	73.1	67.6	5.50	13.298	
1,400.0	1,400.0	1,390.0	1,388.8	3.0	2.9	171.66	-83.1	12.2	84.7	78.8	5.93	14.277	
1,500.0	1,500.0	1,485.8	1,483.5	3.3	3.1	169.84	-96.7	17.3	99.6	93.2	6.40	15.573	
1,600.0	1,600.0	1,583.4	1,579.6	3.5	3.4	168.27	-112.8	23.4	117.0	110.1	6.90	16.957	
1,700.0	1,700.0	1,681.9	1,676.5	3.7	3.7	167.09	-129.0	29.6	134.5	127.0	7.43	18.106	
1,800.0	1,800.0	1,780.3	1,773.3	3.9	4.0	166.18	-145.3	35.7	152.0	144.0	7.97	19.066	
1,900.0	1,900.0	1,878.7	1,870.2	4.2	4.4	165.46	-161.6	41.9	169.5	161.0	8.53	19.873	
2,000.0	2,000.0	1,977.1	1,967.1	4.4	4.7	164.88	-177.8	48.1	187.1	178.0	9.10	20.558	
2,100.0	2,100.0	2,075.7	2,064.1	4.6	5.1	71.41	-194.1	54.2	204.1	195.2	8.96	22.774	
2,200.0	2,199.8	2,174.3	2,161.2	4.8	5.4	71.96	-210.4	60.4	220.1	210.7	9.39	23.430	
2,300.0	2,299.5	2,273.0	2,258.3	5.0	5.8	73.23	-226.7	66.6	235.4	225.5	9.84	23.923	
2,400.0	2,399.2	2,371.7	2,355.5	5.2	6.2	74.44	-243.0	72.7	250.7	240.4	10.29	24.358	
2,500.0	2,498.9	2,470.4	2,452.6	5.4	6.6	75.52	-259.3	78.9	266.2	255.4	10.76	24.745	
2,600.0	2,598.6	2,569.1	2,549.7	5.7	6.9	76.47	-275.6	85.1	281.7	270.5	11.23	25.090	
2,700.0	2,698.3	2,667.7	2,646.9	5.9	7.3	77.33	-291.9	91.3	297.3	285.6	11.71	25.399	
2,800.0	2,798.0	2,766.4	2,744.0	6.1	7.7	78.10	-308.2	97.4	313.0	300.8	12.19	25.675	
2,900.0	2,897.6	2,865.1	2,841.1	6.4	8.1	78.79	-324.5	103.6	328.7	316.0	12.68	25.923	
3,000.0	2,997.3	2,963.8	2,938.2	6.6	8.5	79.43	-340.8	109.8	344.4	331.2	13.17	26.146	
3,100.0	3,097.0	3,062.5	3,035.4	6.8	8.9	80.00	-357.1	116.0	360.2	346.5	13.67	26.347	
3,200.0	3,196.7	3,161.2	3,132.5	7.1	9.3	80.53	-373.4	122.1	376.0	361.8	14.17	26.528	
3,300.0	3,296.4	3,259.9	3,229.6	7.3	9.7	81.02	-389.7	128.3	391.9	377.2	14.68	26.692	
3,400.0	3,396.1	3,358.5	3,326.8	7.6	10.0	81.47	-406.0	134.5	407.7	392.5	15.19	26.841	
3,500.0	3,495.8	3,457.2	3,423.9	7.8	10.4	81.88	-422.3	140.7	423.6	407.9	15.70	26.977	
3,600.0	3,595.4	3,555.9	3,521.0	8.1	10.8	82.27	-438.6	146.8	439.5	423.3	16.22	27.101	
3,700.0	3,695.1	3,654.6	3,618.2	8.3	11.2	82.63	-454.9	153.0	455.5	438.7	16.74	27.214	
3,800.0	3,794.8	3,753.3	3,715.3	8.6	11.6	82.96	-471.3	159.2	471.4	454.2	17.26	27.317	
3,900.0	3,894.5	3,852.0	3,812.4	8.8	12.0	83.27	-487.6	165.4	487.4	469.6	17.78	27.413	
4,000.0	3,994.2	3,950.6	3,909.6	9.1	12.4	83.56	-503.9	171.5	503.4	485.1	18.30	27.500	
4,100.0	4,093.9	4,049.3	4,006.7	9.3	12.8	83.84	-520.2	177.7	519.3	500.5	18.83	27.581	
4,200.0	4,193.5	4,148.0	4,103.8	9.6	13.2	84.10	-536.5	183.9	535.3	516.0	19.36	27.655	
4,300.0	4,293.2	4,246.7	4,201.0	9.8	13.6	84.34	-552.8	190.1	551.4	531.5	19.89	27.724	
4,400.0	4,392.9	4,345.4	4,298.1	10.1	14.0	84.57	-569.1	196.2	567.4	547.0	20.42	27.788	
4,500.0	4,492.6	4,444.1	4,395.2	10.3	14.4	84.79	-585.4	202.4	583.4	562.4	20.95	27.847	
4,600.0	4,592.3	4,542.7	4,492.4	10.6	14.8	84.99	-601.7	208.6	599.4	578.0	21.48	27.902	
4,700.0	4,692.0	4,641.4	4,589.5	10.9	15.2	85.19	-618.0	214.8	615.5	593.5	22.02	27.954	
4,800.0	4,791.7	4,740.1	4,686.6	11.1	15.6	85.37	-634.3	220.9	631.5	609.0	22.55	28.002	
4,900.0	4,891.3	4,838.8	4,783.8	11.4	16.0	85.55	-650.6	227.1	647.6	624.5	23.09	28.047	
5,000.0	4,991.0	4,937.5	4,880.9	11.6	16.4	85.71	-666.9	233.3	663.6	640.0	23.63	28.089	

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-304
Project:	SEC.14-T5N-R64W	**TVD Reference:**	WELL @ 4586.0ft (RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peterson 14X-304	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (3-07-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14X-234 - Wellbore #1 - Plan #1 (3-07-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,090.7	5,036.2	4,978.0	11.9	16.8	85.87	-683.2	239.5	679.7	655.5	24.16	28.128	
5,200.0	5,190.4	5,134.9	5,075.1	12.2	17.2	86.02	-699.5	245.6	695.8	671.1	24.70	28.165	
5,300.0	5,290.1	5,257.7	5,196.3	12.4	17.6	86.30	-718.1	252.7	710.5	685.2	25.27	28.116	
5,400.0	5,389.9	5,387.4	5,325.2	12.6	17.9	86.66	-732.4	258.1	721.3	695.5	25.76	27.995	
5,500.0	5,489.9	5,518.1	5,455.5	12.8	18.2	86.75	-741.4	261.5	728.0	701.8	26.20	27.786	
5,600.0	5,589.9	5,649.4	5,586.7	13.0	18.4	179.78	-744.8	262.8	730.6	700.7	29.91	24.425	
5,700.0	5,689.9	5,752.6	5,689.9	13.2	18.5	179.78	-744.8	262.8	730.6	700.3	30.26	24.146	
5,800.0	5,789.9	5,852.7	5,790.0	13.4	18.6	179.88	-744.8	261.5	730.6	700.0	30.59	23.885	
5,818.8	5,808.7	5,871.5	5,808.7	13.4	18.6	-90.03	-744.8	260.2	730.6	703.2	27.42	26.640	
5,900.0	5,889.8	5,951.7	5,888.2	13.6	18.7	-89.32	-744.8	249.4	730.6	702.9	27.70	26.377	
6,000.0	5,988.8	6,049.2	5,982.6	13.7	18.7	-88.43	-744.8	225.2	730.9	703.0	27.92	26.176	
6,100.0	6,085.2	6,145.4	6,071.9	13.7	18.8	-87.57	-744.8	189.8	731.3	703.2	28.06	26.057	
6,200.0	6,177.3	6,240.3	6,155.0	13.8	18.8	-86.76	-744.8	144.1	731.8	703.6	28.20	25.950	
6,300.0	6,263.6	6,334.1	6,231.0	13.9	18.7	-86.00	-744.8	89.1	732.4	704.0	28.43	25.758	
6,400.0	6,342.5	6,427.0	6,299.0	14.1	18.7	-85.31	-744.8	26.0	733.1	704.2	28.90	25.362	
6,500.0	6,412.7	6,518.9	6,358.3	14.6	18.7	-84.70	-744.8	-44.2	733.7	704.0	29.76	24.655	
6,600.0	6,473.1	6,610.2	6,408.4	15.2	18.8	-84.18	-744.8	-120.4	734.4	703.3	31.14	23.584	
6,700.0	6,522.6	6,700.0	6,448.5	16.3	18.9	-83.75	-744.8	-200.8	735.0	701.9	33.11	22.200	
6,800.0	6,560.3	6,791.0	6,479.2	17.6	19.4	-83.41	-744.8	-286.4	735.5	699.7	35.72	20.588	
6,900.0	6,585.6	6,880.8	6,499.3	19.3	20.5	-83.18	-744.8	-373.9	735.8	696.9	38.88	18.926	
7,000.0	6,598.0	6,970.5	6,509.0	21.2	22.1	-83.05	-744.8	-462.9	736.0	693.5	42.47	17.329	
7,100.0	6,599.2	7,066.6	6,510.4	23.2	24.0	-83.07	-744.8	-559.0	736.0	689.5	46.51	15.825	
7,200.0	6,598.8	7,166.6	6,511.1	25.4	26.1	-83.15	-744.8	-659.0	735.8	685.0	50.87	14.466	
7,300.0	6,598.5	7,266.6	6,511.8	27.7	28.4	-83.23	-744.8	-759.0	735.7	680.3	55.45	13.269	
7,400.0	6,598.2	7,366.6	6,512.5	30.1	30.8	-83.31	-744.8	-859.0	735.6	675.4	60.20	12.219	
7,500.0	6,597.8	7,466.6	6,513.1	32.6	33.2	-83.39	-744.8	-959.0	735.5	670.4	65.09	11.300	
7,600.0	6,597.5	7,566.6	6,513.8	35.1	35.7	-83.47	-744.8	-1,059.0	735.4	665.3	70.08	10.493	
7,700.0	6,597.1	7,666.6	6,514.5	37.7	38.2	-83.55	-744.8	-1,159.0	735.3	660.1	75.16	9.782	
7,800.0	6,596.8	7,766.5	6,515.2	40.2	40.8	-83.63	-744.8	-1,259.0	735.1	654.8	80.31	9.154	
7,900.0	6,596.4	7,866.5	6,515.9	42.9	43.4	-83.71	-744.8	-1,358.9	735.0	649.5	85.51	8.595	
8,000.0	6,596.1	7,966.5	6,516.5	45.5	46.0	-83.79	-744.8	-1,458.9	734.9	644.1	90.77	8.097	
8,100.0	6,595.7	8,066.5	6,517.2	48.2	48.6	-83.87	-744.8	-1,558.9	734.8	638.7	96.06	7.649	
8,200.0	6,595.4	8,166.5	6,517.9	50.8	51.3	-83.95	-744.8	-1,658.9	734.7	633.3	101.39	7.246	
8,300.0	6,595.0	8,266.5	6,518.6	53.5	53.9	-84.03	-744.8	-1,758.9	734.6	627.8	106.75	6.882	
8,400.0	6,594.7	8,366.5	6,519.3	56.2	56.6	-84.11	-744.8	-1,858.9	734.5	622.4	112.13	6.550	
8,500.0	6,594.3	8,466.5	6,519.9	58.9	59.3	-84.19	-744.8	-1,958.9	734.4	616.8	117.53	6.248	
8,600.0	6,594.0	8,566.5	6,520.6	61.7	62.0	-84.27	-744.8	-2,058.9	734.3	611.3	122.95	5.972	
8,700.0	6,593.6	8,666.5	6,521.3	64.4	64.8	-84.35	-744.8	-2,158.9	734.2	605.8	128.39	5.718	
8,800.0	6,593.3	8,766.5	6,522.0	67.1	67.5	-84.43	-744.8	-2,258.9	734.1	600.2	133.85	5.484	
8,900.0	6,592.9	8,866.5	6,522.7	69.9	70.2	-84.51	-744.8	-2,358.9	734.0	594.7	139.32	5.268	
9,000.0	6,592.6	8,966.5	6,523.3	72.6	72.9	-84.59	-744.8	-2,458.9	733.9	589.1	144.80	5.068	
9,100.0	6,592.2	9,066.5	6,524.0	75.3	75.7	-84.67	-744.8	-2,558.9	733.8	583.5	150.29	4.883	
9,200.0	6,591.9	9,166.5	6,524.7	78.1	78.4	-84.75	-744.8	-2,658.8	733.7	577.9	155.79	4.710	
9,300.0	6,591.5	9,266.5	6,525.4	80.9	81.2	-84.83	-744.8	-2,758.8	733.6	572.3	161.30	4.548	
9,400.0	6,591.2	9,366.5	6,526.1	83.6	83.9	-84.91	-744.8	-2,858.8	733.5	566.7	166.81	4.397	
9,500.0	6,590.8	9,466.5	6,526.8	86.4	86.7	-84.99	-744.8	-2,958.8	733.4	561.1	172.34	4.256	
9,600.0	6,590.5	9,566.4	6,527.4	89.2	89.4	-85.07	-744.8	-3,058.8	733.3	555.5	177.87	4.123	
9,700.0	6,590.1	9,666.4	6,528.1	91.9	92.2	-85.15	-744.8	-3,158.8	733.2	549.8	183.40	3.998	
9,800.0	6,589.8	9,766.4	6,528.8	94.7	95.0	-85.23	-744.8	-3,258.8	733.1	544.2	188.95	3.880	
9,900.0	6,589.4	9,866.4	6,529.5	97.5	97.7	-85.31	-744.8	-3,358.8	733.1	538.6	194.49	3.769	
10,000.0	6,589.1	9,966.4	6,530.2	100.2	100.5	-85.39	-744.8	-3,458.8	733.0	532.9	200.05	3.664	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peterson 14X-304
Project:	SEC.14-T5N-R64W	**TVD Reference:**	WELL @ 4586.0ft (RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peterson 14X-304	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (3-07-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14X-234 - Wellbore #1 - Plan #1 (3-07-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,100.0	6,588.7	10,066.4	6,530.8	103.0	103.3	-85.47	-744.8	-3,558.8	732.9	527.3	205.60	3.565	
10,200.0	6,588.4	10,166.4	6,531.5	105.8	106.1	-85.55	-744.8	-3,658.8	732.8	521.7	211.16	3.470	
10,300.0	6,588.0	10,266.4	6,532.2	108.6	108.8	-85.63	-744.8	-3,758.8	732.7	516.0	216.73	3.381	
10,400.0	6,587.7	10,366.4	6,532.9	111.4	111.6	-85.71	-744.8	-3,858.8	732.7	510.4	222.30	3.296	
10,500.0	6,587.3	10,466.4	6,533.6	114.1	114.4	-85.79	-744.8	-3,958.7	732.6	504.7	227.87	3.215	
10,600.0	6,587.0	10,566.4	6,534.2	116.9	117.2	-85.87	-744.8	-4,058.7	732.5	499.1	233.44	3.138	
10,700.0	6,586.6	10,666.4	6,534.9	119.7	120.0	-85.95	-744.8	-4,158.7	732.4	493.4	239.02	3.064	
10,800.0	6,586.3	10,766.4	6,535.6	122.5	122.7	-86.03	-744.8	-4,258.7	732.4	487.8	244.60	2.994	
10,850.3	6,586.1	10,816.7	6,535.9	123.4	124.1	-86.07	-744.8	-4,309.0	732.3	485.4	246.92	2.966	
10,881.3	6,586.0	10,825.1	6,536.0	124.0	124.4	-86.08	-744.8	-4,317.5	732.7	484.9	247.71	2.958	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peterson 14X-304
Project:	SEC.14-T5N-R64W	**TVD Reference:**	WELL @ 4586.0ft (RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peterson 14X-304	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (3-07-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14X-414 - Wellbore #1 - Plan #1 (3-07-14)

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	29.1	0.0	29.1				
100.0	100.0	100.0	100.0	0.1	0.1	0.00	29.1	0.0	29.1	28.9	0.22	129.650	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	29.1	0.0	29.1	28.5	0.67	43.217	
300.0	300.0	300.0	300.0	0.6	0.6	0.00	29.1	0.0	29.1	28.0	1.12	25.930	
400.0	400.0	400.0	400.0	0.8	0.8	0.00	29.1	0.0	29.1	27.6	1.57	18.521	
500.0	500.0	500.0	500.0	1.0	1.0	0.00	29.1	0.0	29.1	27.1	2.02	14.406	
600.0	600.0	600.0	600.0	1.2	1.2	0.00	29.1	0.0	29.1	26.7	2.47	11.786	
700.0	700.0	700.0	700.0	1.5	1.5	0.00	29.1	0.0	29.1	26.2	2.92	9.973	
800.0	800.0	800.0	800.0	1.7	1.7	0.00	29.1	0.0	29.1	25.8	3.37	8.643	
900.0	900.0	900.0	900.0	1.9	1.9	0.00	29.1	0.0	29.1	25.3	3.82	7.626	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	0.00	29.1	0.0	29.1	24.9	4.27	6.824	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	0.00	29.1	0.0	29.1	24.4	4.72	6.174	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	0.00	29.1	0.0	29.1	24.0	5.17	5.637	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	0.00	29.1	0.0	29.1	23.5	5.62	5.186	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	0.00	29.1	0.0	29.1	23.1	6.07	4.802	
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	0.00	29.1	0.0	29.1	22.6	6.52	4.471	CC, ES
1,600.0	1,600.0	1,599.2	1,599.2	3.5	3.5	2.18	30.4	1.2	30.4	23.5	6.96	4.373	
1,700.0	1,700.0	1,698.2	1,698.0	3.7	3.7	7.70	34.2	4.6	34.6	27.2	7.40	4.670	
1,800.0	1,800.0	1,797.2	1,796.7	3.9	3.9	14.38	40.5	10.4	42.0	34.1	7.85	5.347	
1,900.0	1,900.0	1,896.2	1,895.1	4.2	4.2	19.79	48.1	17.3	51.3	43.0	8.30	6.186	
2,000.0	2,000.0	1,995.6	1,994.0	4.4	4.4	23.53	55.7	24.2	61.0	52.3	8.76	6.968	
2,100.0	2,100.0	2,095.2	2,093.0	4.6	4.6	-68.03	63.3	31.2	70.2	61.1	9.18	7.649	
2,200.0	2,199.8	2,194.8	2,192.2	4.8	4.9	-69.17	70.9	38.2	78.2	68.6	9.61	8.136	
2,300.0	2,299.5	2,294.5	2,291.3	5.0	5.1	-71.82	78.5	45.1	85.3	75.3	10.05	8.490	
2,400.0	2,399.2	2,394.2	2,390.4	5.2	5.4	-74.16	86.2	52.1	92.6	82.1	10.51	8.817	
2,500.0	2,498.9	2,493.8	2,489.6	5.4	5.7	-76.16	93.8	59.0	100.0	89.1	10.96	9.123	
2,600.0	2,598.6	2,593.5	2,588.7	5.7	5.9	-77.88	101.4	66.0	107.5	96.1	11.43	9.407	
2,700.0	2,698.3	2,693.2	2,687.8	5.9	6.2	-79.37	109.0	73.0	115.1	103.2	11.90	9.672	
2,800.0	2,798.0	2,792.9	2,787.0	6.1	6.5	-80.68	116.6	79.9	122.8	110.4	12.38	9.917	
2,900.0	2,897.6	2,892.5	2,886.1	6.4	6.7	-81.84	124.3	86.9	130.5	117.7	12.87	10.145	
3,000.0	2,997.3	2,992.2	2,985.2	6.6	7.0	-82.86	131.9	93.9	138.3	124.9	13.35	10.356	
3,100.0	3,097.0	3,091.9	3,084.4	6.8	7.3	-83.78	139.5	100.8	146.1	132.2	13.84	10.552	
3,200.0	3,196.7	3,191.5	3,183.5	7.1	7.6	-84.60	147.1	107.8	153.9	139.6	14.34	10.735	
3,300.0	3,296.4	3,291.2	3,282.6	7.3	7.8	-85.35	154.7	114.7	161.8	147.0	14.84	10.905	
3,400.0	3,396.1	3,390.9	3,381.8	7.6	8.1	-86.02	162.4	121.7	169.7	154.3	15.34	11.063	
3,500.0	3,495.8	3,490.5	3,480.9	7.8	8.4	-86.64	170.0	128.7	177.6	161.8	15.84	11.211	
3,600.0	3,595.4	3,590.2	3,580.0	8.1	8.7	-87.20	177.6	135.6	185.5	169.2	16.35	11.350	
3,700.0	3,695.1	3,689.9	3,679.2	8.3	9.0	-87.72	185.2	142.6	193.5	176.6	16.85	11.479	
3,800.0	3,794.8	3,789.5	3,778.3	8.6	9.2	-88.19	192.8	149.5	201.4	184.1	17.36	11.601	
3,900.0	3,894.5	3,889.2	3,877.4	8.8	9.5	-88.63	200.5	156.5	209.4	191.5	17.88	11.715	
4,000.0	3,994.2	3,988.9	3,976.6	9.1	9.8	-89.04	208.1	163.5	217.4	199.0	18.39	11.823	
4,100.0	4,093.9	4,088.6	4,075.7	9.3	10.1	-89.42	215.7	170.4	225.4	206.5	18.90	11.924	
4,200.0	4,193.5	4,188.2	4,174.8	9.6	10.4	-89.77	223.3	177.4	233.4	214.0	19.42	12.019	
4,300.0	4,293.2	4,287.9	4,274.0	9.8	10.7	-90.10	230.9	184.3	241.4	221.5	19.94	12.110	
4,400.0	4,392.9	4,387.6	4,373.1	10.1	11.0	-90.40	238.6	191.3	249.4	229.0	20.45	12.195	
4,500.0	4,492.6	4,487.2	4,472.2	10.3	11.2	-90.69	246.2	198.3	257.5	236.5	20.97	12.276	
4,600.0	4,592.3	4,586.9	4,571.4	10.6	11.5	-90.96	253.8	205.2	265.5	244.0	21.49	12.352	
4,700.0	4,692.0	4,686.6	4,670.5	10.9	11.8	-91.22	261.4	212.2	273.5	251.5	22.02	12.425	
4,800.0	4,791.7	4,786.2	4,769.6	11.1	12.1	-91.46	269.0	219.2	281.6	259.1	22.54	12.494	
4,900.0	4,891.3	4,885.9	4,868.8	11.4	12.4	-91.69	276.7	226.1	289.6	266.6	23.06	12.560	
5,000.0	4,991.0	4,985.6	4,967.9	11.6	12.7	-91.90	284.3	233.1	297.7	274.1	23.58	12.623	

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-304
Project:	SEC.14-T5N-R64W	**TVD Reference:**	WELL @ 4586.0ft (RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peterson 14X-304	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (3-07-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14X-414 - Wellbore #1 - Plan #1 (3-07-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,090.7	5,085.2	5,067.0	11.9	13.0	-92.10	291.9	240.0	305.7	281.6	24.11	12.682	
5,200.0	5,190.4	5,184.9	5,166.2	12.2	13.2	-92.30	299.5	247.0	313.8	289.2	24.63	12.739	
5,300.0	5,290.1	5,290.2	5,271.0	12.4	13.5	-92.60	307.0	253.8	321.3	296.2	25.15	12.778	
5,400.0	5,389.9	5,399.2	5,379.8	12.6	13.7	-92.98	311.9	258.3	326.1	300.6	25.56	12.761	
5,500.0	5,489.9	5,508.4	5,489.0	12.8	13.9	-93.12	313.7	260.0	327.9	302.0	25.93	12.648	
5,600.0	5,589.9	5,609.4	5,589.9	13.0	14.1	0.00	313.7	260.0	327.9	302.5	25.43	12.898	
5,700.0	5,689.9	5,709.4	5,689.9	13.2	14.3	0.00	313.7	260.0	327.9	302.1	25.84	12.693	
5,800.0	5,789.9	5,809.4	5,789.9	13.4	14.5	0.00	313.7	260.0	327.9	301.7	26.25	12.494	
5,848.6	5,838.5	5,858.0	5,838.5	13.5	14.6	90.15	313.7	260.0	327.9	300.7	27.29	12.018	
5,900.0	5,889.8	5,909.3	5,889.8	13.6	14.7	90.34	313.7	260.0	327.9	300.5	27.48	11.934	
6,000.0	5,988.8	6,009.6	5,990.0	13.7	14.8	92.14	313.7	256.7	328.2	300.5	27.72	11.840	
6,100.0	6,085.2	6,111.3	6,090.4	13.7	14.9	94.02	313.7	240.6	328.8	300.9	27.85	11.806	
6,200.0	6,177.3	6,214.6	6,189.2	13.8	15.0	95.84	313.7	210.8	329.7	301.7	27.93	11.804	
6,300.0	6,263.6	6,319.5	6,284.4	13.9	15.0	97.55	313.7	167.1	330.8	302.8	28.05	11.795	
6,400.0	6,342.5	6,425.8	6,374.0	14.1	15.0	99.14	313.7	110.0	332.2	303.9	28.33	11.724	
6,500.0	6,412.7	6,533.5	6,455.8	14.6	15.0	100.55	313.7	40.0	333.6	304.7	28.95	11.524	
6,600.0	6,473.1	6,642.5	6,527.7	15.2	15.4	101.78	313.7	-41.8	335.0	305.0	30.07	11.141	
6,700.0	6,522.6	6,752.7	6,587.8	16.3	16.3	102.79	313.7	-134.0	336.3	304.5	31.84	10.563	
6,800.0	6,560.3	6,863.7	6,634.3	17.6	17.7	103.56	313.7	-234.7	337.3	303.0	34.33	9.827	
6,900.0	6,585.6	6,975.5	6,665.9	19.3	19.4	104.08	313.7	-341.8	338.1	300.6	37.50	9.016	
7,000.0	6,598.0	7,084.5	6,681.8	21.2	21.4	104.40	313.7	-449.6	338.6	297.4	41.16	8.226	
7,100.0	6,599.2	7,188.6	6,691.4	23.2	23.5	105.69	313.7	-553.2	340.7	295.8	44.91	7.585	
7,200.0	6,598.8	7,294.0	6,693.1	25.4	25.8	106.03	313.7	-658.6	341.2	292.0	49.15	6.942	
7,300.0	6,598.5	7,394.0	6,692.9	27.7	28.1	106.06	313.7	-758.6	341.2	287.7	53.56	6.371	
7,400.0	6,598.2	7,494.0	6,692.7	30.1	30.5	106.08	313.7	-858.6	341.3	283.1	58.14	5.870	
7,500.0	6,597.8	7,594.0	6,692.5	32.6	32.9	106.11	313.7	-958.6	341.3	278.5	62.85	5.431	
7,600.0	6,597.5	7,694.0	6,692.3	35.1	35.4	106.13	313.7	-1,058.6	341.4	273.7	67.66	5.046	
7,700.0	6,597.1	7,794.0	6,692.1	37.7	37.9	106.16	313.7	-1,158.6	341.4	268.9	72.55	4.706	
7,800.0	6,596.8	7,894.0	6,691.9	40.2	40.5	106.19	313.7	-1,258.6	341.5	263.9	77.51	4.405	
7,900.0	6,596.4	7,994.0	6,691.7	42.9	43.1	106.21	313.7	-1,358.6	341.5	259.0	82.52	4.138	
8,000.0	6,596.1	8,094.0	6,691.6	45.5	45.7	106.24	313.7	-1,458.6	341.5	254.0	87.58	3.900	
8,100.0	6,595.7	8,194.0	6,691.4	48.2	48.4	106.26	313.7	-1,558.6	341.6	248.9	92.68	3.686	
8,200.0	6,595.4	8,294.0	6,691.2	50.8	51.0	106.29	313.7	-1,658.6	341.6	243.8	97.80	3.493	
8,300.0	6,595.0	8,394.0	6,691.0	53.5	53.7	106.31	313.7	-1,758.6	341.7	238.7	102.95	3.319	
8,400.0	6,594.7	8,494.0	6,690.8	56.2	56.4	106.34	313.7	-1,858.6	341.7	233.6	108.13	3.160	
8,500.0	6,594.3	8,594.0	6,690.6	58.9	59.1	106.36	313.7	-1,958.6	341.8	228.4	113.32	3.016	
8,600.0	6,594.0	8,694.0	6,690.4	61.7	61.8	106.39	313.7	-2,058.6	341.8	223.3	118.53	2.884	
8,700.0	6,593.6	8,794.0	6,690.2	64.4	64.5	106.41	313.7	-2,158.6	341.8	218.1	123.76	2.762	
8,800.0	6,593.3	8,894.0	6,690.0	67.1	67.3	106.44	313.7	-2,258.6	341.9	212.9	128.99	2.650	
8,900.0	6,592.9	8,994.0	6,689.8	69.9	70.0	106.46	313.7	-2,358.6	341.9	207.7	134.24	2.547	
9,000.0	6,592.6	9,094.0	6,689.6	72.6	72.7	106.49	313.7	-2,458.6	342.0	202.5	139.50	2.451	
9,100.0	6,592.2	9,194.0	6,689.4	75.3	75.5	106.51	313.7	-2,558.6	342.0	197.3	144.76	2.363	
9,200.0	6,591.9	9,294.0	6,689.2	78.1	78.2	106.54	313.7	-2,658.6	342.1	192.0	150.03	2.280	
9,300.0	6,591.5	9,394.0	6,689.1	80.9	81.0	106.57	313.7	-2,758.6	342.1	186.8	155.31	2.203	
9,400.0	6,591.2	9,494.0	6,688.9	83.6	83.7	106.59	313.7	-2,858.6	342.1	181.6	160.59	2.131	
9,500.0	6,590.8	9,594.0	6,688.7	86.4	86.5	106.62	313.7	-2,958.6	342.2	176.3	165.88	2.063	
9,600.0	6,590.5	9,694.0	6,688.5	89.2	89.3	106.64	313.7	-3,058.6	342.2	171.1	171.17	1.999	
9,700.0	6,590.1	9,794.0	6,688.3	91.9	92.0	106.67	313.7	-3,158.6	342.3	165.8	176.47	1.940	
9,800.0	6,589.8	9,894.0	6,688.1	94.7	94.8	106.69	313.7	-3,258.6	342.3	160.6	181.77	1.883	
9,900.0	6,589.4	9,994.0	6,687.9	97.5	97.6	106.72	313.7	-3,358.6	342.4	155.3	187.07	1.830	
10,000.0	6,589.1	10,094.0	6,687.7	100.2	100.3	106.74	313.7	-3,458.6	342.4	150.0	192.37	1.780	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peterson 14X-304
Project:	SEC.14-T5N-R64W	**TVD Reference:**	WELL @ 4586.0ft (RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peterson 14X-304	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (3-07-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14X-414 - Wellbore #1 - Plan #1 (3-07-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,100.0	6,588.7	10,194.0	6,687.5	103.0	103.1	106.77	313.7	-3,558.6	342.5	144.8	197.68	1.732	
10,200.0	6,588.4	10,294.0	6,687.3	105.8	105.9	106.79	313.7	-3,658.6	342.5	139.5	202.99	1.687	
10,300.0	6,588.0	10,394.0	6,687.1	108.6	108.7	106.82	313.7	-3,758.6	342.5	134.2	208.30	1.644	
10,400.0	6,587.7	10,494.0	6,686.9	111.4	111.4	106.84	313.7	-3,858.6	342.6	129.0	213.61	1.604	
10,500.0	6,587.3	10,594.0	6,686.8	114.1	114.2	106.87	313.7	-3,958.6	342.6	123.7	218.93	1.565	
10,600.0	6,587.0	10,694.0	6,686.6	116.9	117.0	106.89	313.7	-4,058.6	342.7	118.4	224.24	1.528	
10,700.0	6,586.6	10,794.0	6,686.4	119.7	119.8	106.92	313.7	-4,158.6	342.7	113.2	229.56	1.493	Level 3
10,800.0	6,586.3	10,894.0	6,686.2	122.5	122.6	106.94	313.7	-4,258.6	342.8	107.9	234.87	1.459	Level 3
10,881.3	6,586.0	10,975.2	6,686.0	124.0	124.8	106.96	313.7	-4,339.8	342.8	104.4	238.42	1.438	Level 3, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peterson 14X-304
Project:	SEC.14-T5N-R64W	**TVD Reference:**	WELL @ 4586.0ft (RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peterson 14X-304	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (3-07-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14X-434 - Wellbore #1 - Plan #1 (3-07-14)

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	180.00	-29.1	0.0	29.1				
100.0	100.0	100.0	100.0	0.1	0.1	180.00	-29.1	0.0	29.1	28.9	0.22	129.686	
200.0	200.0	200.0	200.0	0.3	0.3	180.00	-29.1	0.0	29.1	28.5	0.67	43.229	
300.0	300.0	300.0	300.0	0.6	0.6	180.00	-29.1	0.0	29.1	28.0	1.12	25.937	
400.0	400.0	400.0	400.0	0.8	0.8	180.00	-29.1	0.0	29.1	27.6	1.57	18.527	
500.0	500.0	500.0	500.0	1.0	1.0	180.00	-29.1	0.0	29.1	27.1	2.02	14.410	
600.0	600.0	600.0	600.0	1.2	1.2	180.00	-29.1	0.0	29.1	26.7	2.47	11.790	
700.0	700.0	700.0	700.0	1.5	1.5	180.00	-29.1	0.0	29.1	26.2	2.92	9.976	
800.0	800.0	800.0	800.0	1.7	1.7	180.00	-29.1	0.0	29.1	25.8	3.37	8.646	
900.0	900.0	900.0	900.0	1.9	1.9	180.00	-29.1	0.0	29.1	25.3	3.82	7.629	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	180.00	-29.1	0.0	29.1	24.9	4.27	6.826	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	180.00	-29.1	0.0	29.1	24.4	4.72	6.176	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	180.00	-29.1	0.0	29.1	24.0	5.17	5.639	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	180.00	-29.1	0.0	29.1	23.5	5.62	5.187	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	180.00	-29.1	0.0	29.1	23.1	6.07	4.803	
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	180.00	-29.1	0.0	29.1	22.6	6.52	4.472	CC, ES
1,600.0	1,600.0	1,599.1	1,599.1	3.5	3.5	178.27	-30.6	0.9	30.6	23.7	6.94	4.413	
1,700.0	1,700.0	1,698.0	1,697.8	3.7	3.6	173.98	-34.9	3.7	35.2	27.8	7.34	4.793	
1,800.0	1,800.0	1,796.4	1,795.9	3.9	3.8	168.90	-42.1	8.3	43.1	35.3	7.75	5.557	
1,900.0	1,900.0	1,894.4	1,893.1	4.2	4.0	164.32	-51.9	14.6	54.4	46.2	8.17	6.655	
2,000.0	2,000.0	1,993.5	1,991.4	4.4	4.2	161.04	-63.0	21.6	67.2	58.5	8.62	7.790	
2,100.0	2,100.0	2,092.7	2,089.7	4.6	4.5	66.61	-74.0	28.7	79.4	70.4	8.99	8.830	
2,200.0	2,199.8	2,192.1	2,188.3	4.8	4.7	67.66	-85.1	35.8	90.2	80.8	9.39	9.609	
2,300.0	2,299.5	2,291.5	2,286.8	5.0	5.0	69.97	-96.2	42.9	100.2	90.4	9.81	10.217	
2,400.0	2,399.2	2,390.9	2,385.4	5.2	5.3	71.96	-107.2	49.9	110.3	100.1	10.24	10.772	
2,500.0	2,498.9	2,490.4	2,483.9	5.4	5.5	73.61	-118.3	57.0	120.5	109.8	10.68	11.282	
2,600.0	2,598.6	2,589.8	2,582.5	5.7	5.8	75.01	-129.4	64.1	130.8	119.7	11.13	11.750	
2,700.0	2,698.3	2,689.2	2,681.0	5.9	6.1	76.20	-140.5	71.2	141.2	129.6	11.59	12.178	
2,800.0	2,798.0	2,788.6	2,779.6	6.1	6.4	77.23	-151.5	78.3	151.6	139.5	12.06	12.570	
2,900.0	2,897.6	2,888.1	2,878.1	6.4	6.7	78.13	-162.6	85.3	162.0	149.5	12.53	12.930	
3,000.0	2,997.3	2,987.5	2,976.7	6.6	7.0	78.92	-173.7	92.4	172.5	159.5	13.01	13.261	
3,100.0	3,097.0	3,086.9	3,075.2	6.8	7.3	79.61	-184.7	99.5	183.0	169.5	13.49	13.565	
3,200.0	3,196.7	3,186.3	3,173.8	7.1	7.6	80.24	-195.8	106.6	193.6	179.6	13.98	13.845	
3,300.0	3,296.4	3,285.8	3,272.3	7.3	7.9	80.79	-206.9	113.6	204.1	189.6	14.47	14.103	
3,400.0	3,396.1	3,385.2	3,370.9	7.6	8.3	81.30	-217.9	120.7	214.7	199.7	14.97	14.342	
3,500.0	3,495.8	3,484.6	3,469.4	7.8	8.6	81.75	-229.0	127.8	225.3	209.8	15.47	14.563	
3,600.0	3,595.4	3,584.0	3,568.0	8.1	8.9	82.17	-240.1	134.9	235.9	219.9	15.97	14.768	
3,700.0	3,695.1	3,683.4	3,666.5	8.3	9.2	82.55	-251.2	142.0	246.5	230.0	16.48	14.959	
3,800.0	3,794.8	3,782.9	3,765.1	8.6	9.5	82.89	-262.2	149.0	257.1	240.1	16.99	15.137	
3,900.0	3,894.5	3,882.3	3,863.6	8.8	9.9	83.21	-273.3	156.1	267.8	250.3	17.50	15.302	
4,000.0	3,994.2	3,981.7	3,962.2	9.1	10.2	83.51	-284.4	163.2	278.4	260.4	18.01	15.457	
4,100.0	4,093.9	4,081.1	4,060.7	9.3	10.5	83.78	-295.4	170.3	289.0	270.5	18.53	15.602	
4,200.0	4,193.5	4,180.6	4,159.3	9.6	10.8	84.04	-306.5	177.4	299.7	280.7	19.04	15.738	
4,300.0	4,293.2	4,280.0	4,257.8	9.8	11.2	84.28	-317.6	184.4	310.4	290.8	19.56	15.866	
4,400.0	4,392.9	4,379.4	4,356.4	10.1	11.5	84.50	-328.6	191.5	321.0	300.9	20.08	15.986	
4,500.0	4,492.6	4,478.8	4,454.9	10.3	11.8	84.70	-339.7	198.6	331.7	311.1	20.60	16.099	
4,600.0	4,592.3	4,578.2	4,553.5	10.6	12.1	84.90	-350.8	205.7	342.3	321.2	21.12	16.206	
4,700.0	4,692.0	4,677.7	4,652.0	10.9	12.5	85.08	-361.9	212.7	353.0	331.4	21.65	16.307	
4,800.0	4,791.7	4,777.1	4,750.6	11.1	12.8	85.25	-372.9	219.8	363.7	341.5	22.17	16.402	
4,900.0	4,891.3	4,876.5	4,849.1	11.4	13.1	85.41	-384.0	226.9	374.4	351.7	22.70	16.492	
5,000.0	4,991.0	4,975.9	4,947.7	11.6	13.5	85.57	-395.1	234.0	385.1	361.8	23.23	16.578	

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-304
Project:	SEC.14-T5N-R64W	**TVD Reference:**	WELL @ 4586.0ft (RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peterson 14X-304	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (3-07-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14X-434 - Wellbore #1 - Plan #1 (3-07-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,090.7	5,075.4	5,046.2	11.9	13.8	85.71	-406.1	241.1	395.8	372.0	23.76	16.659	
5,200.0	5,190.4	5,178.0	5,148.0	12.2	14.1	85.86	-417.5	248.3	406.3	382.1	24.29	16.730	
5,300.0	5,290.1	5,291.4	5,260.8	12.4	14.4	86.27	-427.3	254.6	414.6	389.8	24.81	16.710	
5,400.0	5,389.9	5,405.3	5,374.4	12.6	14.6	86.71	-433.4	258.5	419.6	394.4	25.26	16.614	
5,500.0	5,489.9	5,519.4	5,488.5	12.8	14.8	86.87	-435.7	260.0	421.5	395.9	25.66	16.429	
5,600.0	5,589.9	5,620.8	5,589.9	13.0	15.0	-180.00	-435.7	260.0	421.5	395.2	26.36	15.993	
5,700.0	5,689.9	5,720.8	5,689.9	13.2	15.1	-180.00	-435.7	260.0	421.5	394.8	26.73	15.769	
5,800.0	5,789.9	5,820.8	5,789.9	13.4	15.3	-180.00	-435.7	260.0	421.5	394.4	27.11	15.551	
5,845.5	5,835.3	5,866.3	5,835.3	13.5	15.4	-90.10	-435.7	260.0	421.5	394.6	26.96	15.639	
5,900.0	5,889.8	5,920.8	5,889.9	13.6	15.5	-90.26	-435.7	259.9	421.6	394.4	27.14	15.530	
6,000.0	5,988.8	6,021.3	5,990.0	13.7	15.6	-91.05	-435.7	252.1	421.6	394.3	27.36	15.412	
6,100.0	6,085.2	6,122.5	6,088.9	13.7	15.7	-91.83	-435.7	231.0	421.8	394.3	27.47	15.352	
6,200.0	6,177.3	6,224.5	6,184.9	13.8	15.7	-92.58	-435.7	196.7	422.0	394.4	27.55	15.314	
6,300.0	6,263.6	6,327.3	6,276.1	13.9	15.7	-93.29	-435.7	149.5	422.2	394.5	27.71	15.241	
6,400.0	6,342.5	6,430.8	6,360.8	14.1	15.7	-93.95	-435.7	90.1	422.6	394.5	28.07	15.055	
6,500.0	6,412.7	6,535.0	6,437.1	14.6	15.7	-94.53	-435.7	19.3	422.9	394.1	28.81	14.676	
6,600.0	6,473.1	6,639.8	6,503.4	15.2	15.7	-95.03	-435.7	-61.7	423.2	393.1	30.12	14.052	
6,700.0	6,522.6	6,745.1	6,558.2	16.3	16.0	-95.45	-435.7	-151.5	423.5	391.4	32.09	13.196	
6,800.0	6,560.3	6,850.8	6,600.4	17.6	17.4	-95.76	-435.7	-248.4	423.7	388.9	34.78	12.183	
6,900.0	6,585.6	6,956.8	6,628.8	19.3	19.2	-95.98	-435.7	-350.4	423.9	385.7	38.12	11.120	
7,000.0	6,598.0	7,061.1	6,643.3	21.2	21.2	-96.16	-435.7	-453.7	424.0	382.1	41.93	10.113	
7,100.0	6,599.2	7,163.4	6,652.5	23.2	23.3	-97.21	-435.7	-555.5	424.9	379.0	45.96	9.245	
7,200.0	6,598.8	7,265.8	6,654.6	25.4	25.6	-97.53	-435.7	-657.9	425.2	374.9	50.34	8.448	
7,300.0	6,598.5	7,365.8	6,655.5	27.7	27.9	-97.70	-435.7	-757.9	425.4	370.5	54.89	7.749	
7,400.0	6,598.2	7,465.8	6,656.3	30.1	30.3	-97.86	-435.7	-857.9	425.5	365.9	59.61	7.138	
7,500.0	6,597.8	7,565.8	6,657.2	32.6	32.7	-98.02	-435.7	-957.9	425.7	361.2	64.47	6.604	
7,600.0	6,597.5	7,665.8	6,658.0	35.1	35.2	-98.18	-435.7	-1,057.9	425.9	356.5	69.42	6.135	
7,700.0	6,597.1	7,765.8	6,658.9	37.7	37.8	-98.34	-435.7	-1,157.9	426.1	351.6	74.45	5.723	
7,800.0	6,596.8	7,865.8	6,659.7	40.2	40.4	-98.50	-435.7	-1,257.9	426.2	346.7	79.54	5.359	
7,900.0	6,596.4	7,965.8	6,660.6	42.9	43.0	-98.66	-435.7	-1,357.8	426.4	341.7	84.69	5.035	
8,000.0	6,596.1	8,065.8	6,661.4	45.5	45.6	-98.82	-435.7	-1,457.8	426.6	336.7	89.87	4.747	
8,100.0	6,595.7	8,165.8	6,662.3	48.2	48.2	-98.98	-435.7	-1,557.8	426.8	331.7	95.09	4.488	
8,200.0	6,595.4	8,265.8	6,663.2	50.8	50.9	-99.14	-435.7	-1,657.8	427.0	326.6	100.34	4.255	
8,300.0	6,595.0	8,365.7	6,664.0	53.5	53.6	-99.30	-435.7	-1,757.8	427.2	321.6	105.61	4.045	
8,400.0	6,594.7	8,465.7	6,664.9	56.2	56.3	-99.46	-435.7	-1,857.8	427.4	316.5	110.89	3.854	
8,500.0	6,594.3	8,565.7	6,665.7	58.9	59.0	-99.61	-435.7	-1,957.8	427.6	311.4	116.20	3.680	
8,600.0	6,594.0	8,665.7	6,666.6	61.7	61.7	-99.77	-435.7	-2,057.8	427.8	306.3	121.51	3.520	
8,700.0	6,593.6	8,765.7	6,667.4	64.4	64.4	-99.93	-435.7	-2,157.8	428.0	301.1	126.83	3.374	
8,800.0	6,593.3	8,865.7	6,668.3	67.1	67.2	-100.09	-435.7	-2,257.7	428.2	296.0	132.17	3.240	
8,900.0	6,592.9	8,965.7	6,669.1	69.9	69.9	-100.25	-435.7	-2,357.7	428.4	290.9	137.50	3.116	
9,000.0	6,592.6	9,065.7	6,670.0	72.6	72.7	-100.41	-435.7	-2,457.7	428.6	285.8	142.84	3.001	
9,100.0	6,592.2	9,165.7	6,670.9	75.3	75.4	-100.57	-435.7	-2,557.7	428.8	280.6	148.19	2.894	
9,200.0	6,591.9	9,265.7	6,671.7	78.1	78.2	-100.72	-435.7	-2,657.7	429.1	275.5	153.54	2.794	
9,300.0	6,591.5	9,365.7	6,672.6	80.9	80.9	-100.88	-435.7	-2,757.7	429.3	270.4	158.89	2.702	
9,400.0	6,591.2	9,465.7	6,673.4	83.6	83.7	-101.04	-435.7	-2,857.7	429.5	265.3	164.24	2.615	
9,500.0	6,590.8	9,565.7	6,674.3	86.4	86.4	-101.20	-435.7	-2,957.7	429.7	260.2	169.59	2.534	
9,600.0	6,590.5	9,665.7	6,675.1	89.2	89.2	-101.35	-435.7	-3,057.7	430.0	255.0	174.93	2.458	
9,700.0	6,590.1	9,765.6	6,676.0	91.9	92.0	-101.51	-435.7	-3,157.6	430.2	249.9	180.28	2.386	
9,800.0	6,589.8	9,865.6	6,676.8	94.7	94.7	-101.67	-435.7	-3,257.6	430.5	244.8	185.63	2.319	
9,900.0	6,589.4	9,965.6	6,677.7	97.5	97.5	-101.83	-435.7	-3,357.6	430.7	239.7	190.97	2.255	
10,000.0	6,589.1	10,065.6	6,678.6	100.2	100.3	-101.98	-435.7	-3,457.6	431.0	234.6	196.31	2.195	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peterson 14X-304
Project:	SEC.14-T5N-R64W	**TVD Reference:**	WELL @ 4586.0ft (RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peterson 14X-304	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (3-07-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14X-434 - Wellbore #1 - Plan #1 (3-07-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,100.0	6,588.7	10,165.6	6,679.4	103.0	103.1	-102.14	-435.7	-3,557.6	431.2	229.6	201.64	2.138	
10,200.0	6,588.4	10,265.6	6,680.3	105.8	105.8	-102.30	-435.7	-3,657.6	431.5	224.5	206.97	2.085	
10,300.0	6,588.0	10,365.6	6,681.1	108.6	108.6	-102.45	-435.7	-3,757.6	431.7	219.4	212.30	2.034	
10,400.0	6,587.7	10,465.6	6,682.0	111.4	111.4	-102.61	-435.7	-3,857.6	432.0	214.4	217.62	1.985	
10,500.0	6,587.3	10,565.6	6,682.8	114.1	114.2	-102.76	-435.7	-3,957.6	432.2	209.3	222.94	1.939	
10,600.0	6,587.0	10,665.6	6,683.7	116.9	117.0	-102.92	-435.7	-4,057.6	432.5	204.3	228.25	1.895	
10,700.0	6,586.6	10,765.6	6,684.5	119.7	119.7	-103.07	-435.7	-4,157.5	432.8	199.2	233.56	1.853	
10,800.0	6,586.3	10,865.6	6,685.4	122.5	122.5	-103.23	-435.7	-4,257.5	433.1	194.2	238.86	1.813	
10,837.9	6,586.2	10,903.5	6,685.7	123.2	123.6	-103.29	-435.7	-4,295.4	433.2	192.7	240.50	1.801	
10,881.3	6,586.0	10,936.6	6,686.0	124.0	124.5	-103.34	-435.7	-4,328.6	433.4	191.3	242.11	1.790	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peterson 14X-304
Project:	SEC.14-T5N-R64W	**TVD Reference:**	WELL @ 4586.0ft (RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peterson 14X-304	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (3-07-14)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4586.0ft (RKB - 15')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Peterson 14X-304
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.64°

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Peterson 14X-304
Project:	SEC.14-T5N-R64W	**TVD Reference:**	WELL @ 4586.0ft (RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	**MD Reference:**	WELL @ 4586.0ft (RKB - 15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Peterson 14X-304	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (3-07-14)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4586.0ft (RKB - 15')	Coordinates are relative to: Peterson 14X-304
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°