

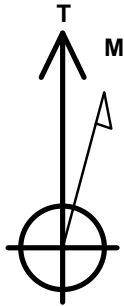
PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Chesnut 28R-403**

Surface Location: Chesnut 28U-HZ Pad Sec.28-T5N-R64W
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
 Ground Elevation: 4620.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1381414.03 3265056.03 40.376480 -104.548620
 RKB - 15' WELL @ 4635.0ft (RKB - 15')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 380'FNL & 940' FEL, SEC. 28		0.0	0.0	Point
BHL 2133'FNL & 1260'FEL, SEC. 33	6770.0	-7031.2	-295.4	Point



Azimuths to True North
 Magnetic North: 8.39°

Magnetic Field
 Strength: 52862.4snT
 Dip Angle: 66.97°
 Date: 2/13/2014
 Model: IGRF2010

ANNOTATIONS

TVD	MD	Annotation
1000.0	1000.0	KOP #1
6021.1	6047.0	KOP #2
6794.9	7365.4	End of Build

Chesnut 28U-HZ Pad Sec.28-T5N-R64W
 Chesnut 28R-403
 Plan #1 (2-13-14)
 13:53, February 13 2014

South(-)/North(+) (2400 ft/in)

SHL 380'FNL & 940' FEL, SEC. 28

Chesnut 28R-403

Hall 28-2 (Exist)

Hall 28-5 (Exist)

7"

**Casing Pt. - 734'FNL
 & 1235'FEL, SEC.28**

P & A Farms 28-2 (Exist)

460' Setbacks

SEC.28-T5N-R64W

SEC.33-T5N-R64W (HALF SECTION)

460' Setbacks

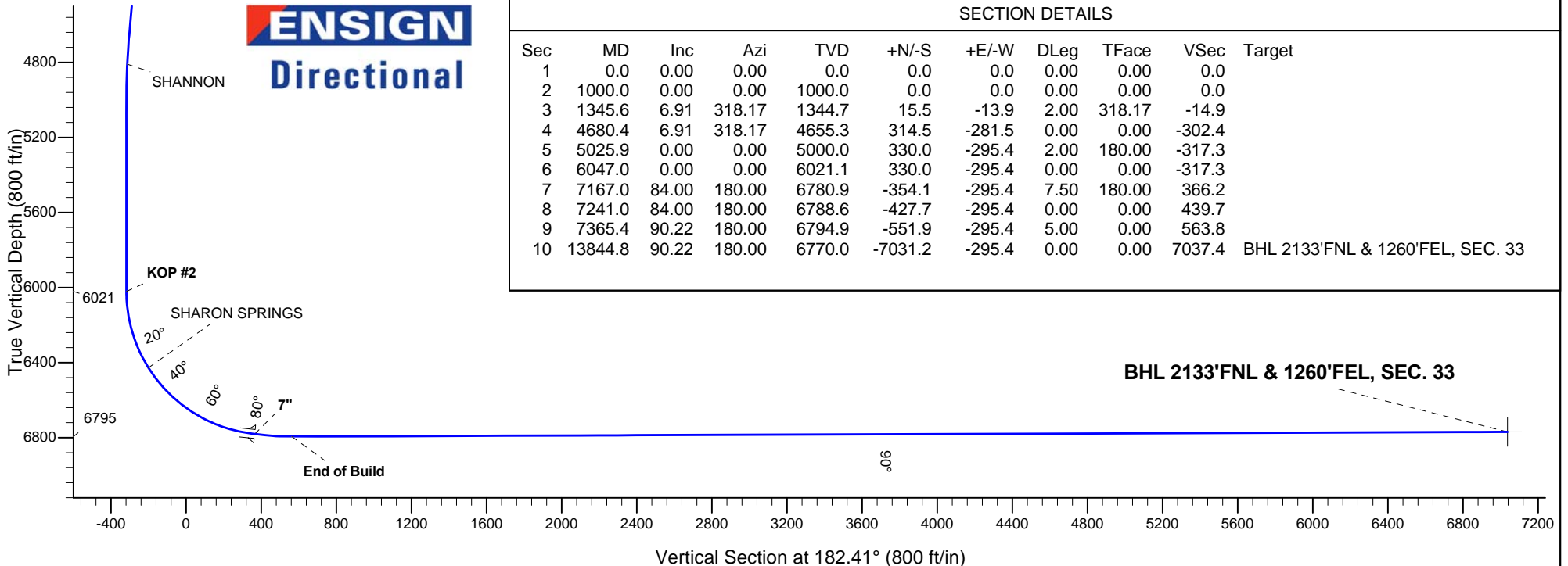
Hendricks 33-3 (Exist)

Chesnut 28R-403

BHL 2133'FNL & 1260'FEL, SEC. 33

West(-)/East(+) (2400 ft/in)

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	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0	
3	1345.6	6.91	318.17	1344.7	15.5	-13.9	2.00	318.17	-14.9	
4	4680.4	6.91	318.17	4655.3	314.5	-281.5	0.00	0.00	-302.4	
5	5025.9	0.00	0.00	5000.0	330.0	-295.4	2.00	180.00	-317.3	
6	6047.0	0.00	0.00	6021.1	330.0	-295.4	0.00	0.00	-317.3	
7	7167.0	84.00	180.00	6780.9	-354.1	-295.4	7.50	180.00	366.2	
8	7241.0	84.00	180.00	6788.6	-427.7	-295.4	0.00	0.00	439.7	
9	7365.4	90.22	180.00	6794.9	-551.9	-295.4	5.00	0.00	563.8	
10	13844.8	90.22	180.00	6770.0	-7031.2	-295.4	0.00	0.00	7037.4	BHL 2133'FNL & 1260'FEL, SEC. 33



Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.28-T5N-R64W

Chesnut 28U-HZ Pad Sec.28-T5N-R64W

Chesnut 28R-403

Wellbore #1

Plan: Plan #1 (2-13-14)

Standard Planning Report

13 February, 2014

Database:	Landmark	Local Co-ordinate Reference:	Well Chesnut 28R-403
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4635.0ft (RKB - 15')
Project:	SEC.28-T5N-R64W	MD Reference:	WELL @ 4635.0ft (RKB - 15')
Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	North Reference:	True
Well:	Chesnut 28R-403	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (2-13-14)		

Project	SEC.28-T5N-R64W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site						Chesnut 28U-HZ Pad Sec.28-T5N-R64W											
Site Position:						Northing:			1,381,414.04 ft			Latitude:			40.376480		
From:			Lat/Long			Easting:			3,265,056.03 ft			Longitude:			-104.548620		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.61 °		

Well	Chesnut 28R-403					
Well Position	+N/-S	0.0 ft	Northing:	1,381,414.03 ft	Latitude:	40.376480
	+E/-W	0.0 ft	Easting:	3,265,056.03 ft	Longitude:	-104.548620
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,620.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/13/2014	8.39	66.97	52,862

Design	Plan #1 (2-13-14)			
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	182.41

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	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,345.6	6.91	318.17	1,344.7	15.5	-13.9	2.00	2.00	0.00	318.17	
4,680.4	6.91	318.17	4,655.3	314.5	-281.5	0.00	0.00	0.00	0.00	
5,025.9	0.00	0.00	5,000.0	330.0	-295.4	2.00	-2.00	0.00	180.00	
6,047.0	0.00	0.00	6,021.1	330.0	-295.4	0.00	0.00	0.00	0.00	
7,167.0	84.00	180.00	6,780.9	-354.1	-295.4	7.50	7.50	0.00	180.00	
7,241.0	84.00	180.00	6,788.6	-427.7	-295.4	0.00	0.00	0.00	0.00	
7,365.4	90.22	180.00	6,794.9	-551.9	-295.4	5.00	5.00	0.00	0.00	
13,844.8	90.22	180.00	6,770.0	-7,031.2	-295.4	0.00	0.00	0.00	0.00	BHL 2133'FNL & 12

Database:	Landmark	Local Co-ordinate Reference:	Well Chesnut 28R-403
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4635.0ft (RKB - 15')
Project:	SEC.28-T5N-R64W	MD Reference:	WELL @ 4635.0ft (RKB - 15')
Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	North Reference:	True
Well:	Chesnut 28R-403	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (2-13-14)		

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 380'FNL & 940' FEL, SEC. 28									
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
KOP #1									
1,100.0	2.00	318.17	1,100.0	1.3	-1.2	-1.3	2.00	2.00	0.00
1,200.0	4.00	318.17	1,199.8	5.2	-4.7	-5.0	2.00	2.00	0.00
1,300.0	6.00	318.17	1,299.5	11.7	-10.5	-11.2	2.00	2.00	0.00
1,345.6	6.91	318.17	1,344.7	15.5	-13.9	-14.9	2.00	2.00	0.00
1,400.0	6.91	318.17	1,398.8	20.4	-18.3	-19.6	0.00	0.00	0.00
1,500.0	6.91	318.17	1,498.0	29.4	-26.3	-28.2	0.00	0.00	0.00
1,600.0	6.91	318.17	1,597.3	38.3	-34.3	-36.8	0.00	0.00	0.00
1,700.0	6.91	318.17	1,696.6	47.3	-42.3	-45.5	0.00	0.00	0.00
1,800.0	6.91	318.17	1,795.9	56.3	-50.4	-54.1	0.00	0.00	0.00
1,900.0	6.91	318.17	1,895.1	65.2	-58.4	-62.7	0.00	0.00	0.00
2,000.0	6.91	318.17	1,994.4	74.2	-66.4	-71.3	0.00	0.00	0.00
2,100.0	6.91	318.17	2,093.7	83.1	-74.4	-80.0	0.00	0.00	0.00
2,200.0	6.91	318.17	2,193.0	92.1	-82.5	-88.6	0.00	0.00	0.00
2,300.0	6.91	318.17	2,292.2	101.1	-90.5	-97.2	0.00	0.00	0.00
2,400.0	6.91	318.17	2,391.5	110.0	-98.5	-105.8	0.00	0.00	0.00
2,500.0	6.91	318.17	2,490.8	119.0	-106.5	-114.4	0.00	0.00	0.00
2,600.0	6.91	318.17	2,590.0	128.0	-114.6	-123.1	0.00	0.00	0.00
2,700.0	6.91	318.17	2,689.3	136.9	-122.6	-131.7	0.00	0.00	0.00
2,800.0	6.91	318.17	2,788.6	145.9	-130.6	-140.3	0.00	0.00	0.00
2,900.0	6.91	318.17	2,887.9	154.9	-138.6	-148.9	0.00	0.00	0.00
3,000.0	6.91	318.17	2,987.1	163.8	-146.7	-157.5	0.00	0.00	0.00
3,100.0	6.91	318.17	3,086.4	172.8	-154.7	-166.2	0.00	0.00	0.00
3,200.0	6.91	318.17	3,185.7	181.8	-162.7	-174.8	0.00	0.00	0.00
3,300.0	6.91	318.17	3,285.0	190.7	-170.7	-183.4	0.00	0.00	0.00
3,400.0	6.91	318.17	3,384.2	199.7	-178.8	-192.0	0.00	0.00	0.00
3,433.0	6.91	318.17	3,417.0	202.7	-181.4	-194.9	0.00	0.00	0.00
PARKMAN									
3,500.0	6.91	318.17	3,483.5	208.7	-186.8	-200.6	0.00	0.00	0.00
3,600.0	6.91	318.17	3,582.8	217.6	-194.8	-209.3	0.00	0.00	0.00
3,700.0	6.91	318.17	3,682.1	226.6	-202.8	-217.9	0.00	0.00	0.00
3,800.0	6.91	318.17	3,781.3	235.6	-210.9	-226.5	0.00	0.00	0.00
3,900.0	6.91	318.17	3,880.6	244.5	-218.9	-235.1	0.00	0.00	0.00
4,000.0	6.91	318.17	3,979.9	253.5	-226.9	-243.7	0.00	0.00	0.00
4,100.0	6.91	318.17	4,079.1	262.5	-234.9	-252.4	0.00	0.00	0.00
4,145.2	6.91	318.17	4,124.0	266.5	-238.6	-256.3	0.00	0.00	0.00
SUSSEX									
4,200.0	6.91	318.17	4,178.4	271.4	-243.0	-261.0	0.00	0.00	0.00
4,300.0	6.91	318.17	4,277.7	280.4	-251.0	-269.6	0.00	0.00	0.00
4,400.0	6.91	318.17	4,377.0	289.4	-259.0	-278.2	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Chesnut 28R-403
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4635.0ft (RKB - 15')
Project:	SEC.28-T5N-R64W	MD Reference:	WELL @ 4635.0ft (RKB - 15')
Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	North Reference:	True
Well:	Chesnut 28R-403	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (2-13-14)		

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	6.91	318.17	4,476.2	298.3	-267.0	-286.8	0.00	0.00	0.00
4,600.0	6.91	318.17	4,575.5	307.3	-275.1	-295.5	0.00	0.00	0.00
4,680.4	6.91	318.17	4,655.3	314.5	-281.5	-302.4	0.00	0.00	0.00
4,700.0	6.52	318.17	4,674.8	316.2	-283.0	-304.0	2.00	-2.00	0.00
4,800.0	4.52	318.17	4,774.3	323.4	-289.5	-310.9	2.00	-2.00	0.00
4,835.8	3.80	318.17	4,810.0	325.3	-291.2	-312.8	2.00	-2.00	0.00
SHANNON									
4,900.0	2.52	318.17	4,874.1	327.9	-293.6	-315.3	2.00	-2.00	0.00
5,000.0	0.52	318.17	4,974.1	329.9	-295.3	-317.2	2.00	-2.00	0.00
5,025.9	0.00	0.00	5,000.0	330.0	-295.4	-317.3	2.00	-2.00	0.00
5,100.0	0.00	0.00	5,074.1	330.0	-295.4	-317.3	0.00	0.00	0.00
5,200.0	0.00	0.00	5,174.1	330.0	-295.4	-317.3	0.00	0.00	0.00
5,300.0	0.00	0.00	5,274.1	330.0	-295.4	-317.3	0.00	0.00	0.00
5,400.0	0.00	0.00	5,374.1	330.0	-295.4	-317.3	0.00	0.00	0.00
5,500.0	0.00	0.00	5,474.1	330.0	-295.4	-317.3	0.00	0.00	0.00
5,600.0	0.00	0.00	5,574.1	330.0	-295.4	-317.3	0.00	0.00	0.00
5,700.0	0.00	0.00	5,674.1	330.0	-295.4	-317.3	0.00	0.00	0.00
5,800.0	0.00	0.00	5,774.1	330.0	-295.4	-317.3	0.00	0.00	0.00
5,900.0	0.00	0.00	5,874.1	330.0	-295.4	-317.3	0.00	0.00	0.00
6,000.0	0.00	0.00	5,974.1	330.0	-295.4	-317.3	0.00	0.00	0.00
6,047.0	0.00	0.00	6,021.1	330.0	-295.4	-317.3	0.00	0.00	0.00
KOP #2									
6,100.0	3.97	180.00	6,074.1	328.2	-295.4	-315.5	7.50	7.50	0.00
6,200.0	11.47	180.00	6,173.1	314.7	-295.4	-302.1	7.50	7.50	0.00
6,300.0	18.97	180.00	6,269.5	288.5	-295.4	-275.8	7.50	7.50	0.00
6,400.0	26.47	180.00	6,361.7	249.9	-295.4	-237.3	7.50	7.50	0.00
6,476.1	32.18	180.00	6,428.0	212.6	-295.4	-200.0	7.50	7.50	0.00
SHARON SPRINGS									
6,500.0	33.97	180.00	6,448.0	199.6	-295.4	-187.0	7.50	7.50	0.00
6,600.0	41.47	180.00	6,527.1	138.5	-295.4	-125.9	7.50	7.50	0.00
6,700.0	48.97	180.00	6,597.4	67.5	-295.4	-55.1	7.50	7.50	0.00
6,800.0	56.47	180.00	6,658.0	-12.0	-295.4	24.4	7.50	7.50	0.00
6,900.0	63.97	180.00	6,707.6	-98.7	-295.4	111.0	7.50	7.50	0.00
7,000.0	71.47	180.00	6,745.5	-191.2	-295.4	203.4	7.50	7.50	0.00
7,100.0	78.97	180.00	6,771.0	-287.8	-295.4	300.0	7.50	7.50	0.00
7,167.0	84.00	180.00	6,780.9	-354.1	-295.4	366.2	7.50	7.50	0.00
7"									
7,200.0	84.00	180.00	6,784.3	-386.9	-295.4	398.9	0.00	0.00	0.00
7,241.0	84.00	180.00	6,788.6	-427.7	-295.4	439.7	0.00	0.00	0.00
7,300.0	86.95	180.00	6,793.3	-486.5	-295.4	498.4	5.00	5.00	0.00
7,365.4	90.22	180.00	6,794.9	-551.8	-295.4	563.8	5.00	5.00	0.00
End of Build									
7,400.0	90.22	180.00	6,794.7	-586.4	-295.4	598.3	0.00	0.00	0.00
7,500.0	90.22	180.00	6,794.4	-686.4	-295.4	698.2	0.00	0.00	0.00
7,600.0	90.22	180.00	6,794.0	-786.4	-295.4	798.2	0.00	0.00	0.00
7,700.0	90.22	180.00	6,793.6	-886.4	-295.4	898.1	0.00	0.00	0.00
7,800.0	90.22	180.00	6,793.2	-986.4	-295.4	998.0	0.00	0.00	0.00
7,900.0	90.22	180.00	6,792.8	-1,086.4	-295.4	1,097.9	0.00	0.00	0.00
8,000.0	90.22	180.00	6,792.4	-1,186.4	-295.4	1,197.8	0.00	0.00	0.00
8,100.0	90.22	180.00	6,792.1	-1,286.4	-295.4	1,297.7	0.00	0.00	0.00
8,200.0	90.22	180.00	6,791.7	-1,386.4	-295.4	1,397.6	0.00	0.00	0.00
8,300.0	90.22	180.00	6,791.3	-1,486.4	-295.4	1,497.5	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Chesnut 28R-403
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4635.0ft (RKB - 15')
Project:	SEC.28-T5N-R64W	MD Reference:	WELL @ 4635.0ft (RKB - 15')
Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	North Reference:	True
Well:	Chesnut 28R-403	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (2-13-14)		

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)
8,400.0	90.22	180.00	6,790.9	-1,586.4	-295.4	1,597.4	0.00	0.00	0.00
8,500.0	90.22	180.00	6,790.5	-1,686.4	-295.4	1,697.4	0.00	0.00	0.00
8,600.0	90.22	180.00	6,790.1	-1,786.4	-295.4	1,797.3	0.00	0.00	0.00
8,700.0	90.22	180.00	6,789.8	-1,886.4	-295.4	1,897.2	0.00	0.00	0.00
8,800.0	90.22	180.00	6,789.4	-1,986.4	-295.4	1,997.1	0.00	0.00	0.00
8,900.0	90.22	180.00	6,789.0	-2,086.4	-295.4	2,097.0	0.00	0.00	0.00
9,000.0	90.22	180.00	6,788.6	-2,186.4	-295.4	2,196.9	0.00	0.00	0.00
9,100.0	90.22	180.00	6,788.2	-2,286.4	-295.4	2,296.8	0.00	0.00	0.00
9,200.0	90.22	180.00	6,787.8	-2,386.4	-295.4	2,396.7	0.00	0.00	0.00
9,300.0	90.22	180.00	6,787.5	-2,486.4	-295.4	2,496.6	0.00	0.00	0.00
9,400.0	90.22	180.00	6,787.1	-2,586.4	-295.4	2,596.6	0.00	0.00	0.00
9,500.0	90.22	180.00	6,786.7	-2,686.4	-295.4	2,696.5	0.00	0.00	0.00
9,600.0	90.22	180.00	6,786.3	-2,786.4	-295.4	2,796.4	0.00	0.00	0.00
9,700.0	90.22	180.00	6,785.9	-2,886.4	-295.4	2,896.3	0.00	0.00	0.00
9,800.0	90.22	180.00	6,785.5	-2,986.4	-295.4	2,996.2	0.00	0.00	0.00
9,900.0	90.22	180.00	6,785.1	-3,086.4	-295.4	3,096.1	0.00	0.00	0.00
10,000.0	90.22	180.00	6,784.8	-3,186.4	-295.4	3,196.0	0.00	0.00	0.00
10,100.0	90.22	180.00	6,784.4	-3,286.4	-295.4	3,295.9	0.00	0.00	0.00
10,200.0	90.22	180.00	6,784.0	-3,386.4	-295.4	3,395.8	0.00	0.00	0.00
10,300.0	90.22	180.00	6,783.6	-3,486.4	-295.4	3,495.8	0.00	0.00	0.00
10,400.0	90.22	180.00	6,783.2	-3,586.4	-295.4	3,595.7	0.00	0.00	0.00
10,500.0	90.22	180.00	6,782.8	-3,686.4	-295.4	3,695.6	0.00	0.00	0.00
10,600.0	90.22	180.00	6,782.5	-3,786.4	-295.4	3,795.5	0.00	0.00	0.00
10,700.0	90.22	180.00	6,782.1	-3,886.4	-295.4	3,895.4	0.00	0.00	0.00
10,800.0	90.22	180.00	6,781.7	-3,986.4	-295.4	3,995.3	0.00	0.00	0.00
10,900.0	90.22	180.00	6,781.3	-4,086.4	-295.4	4,095.2	0.00	0.00	0.00
11,000.0	90.22	180.00	6,780.9	-4,186.4	-295.4	4,195.1	0.00	0.00	0.00
11,100.0	90.22	180.00	6,780.5	-4,286.4	-295.4	4,295.0	0.00	0.00	0.00
11,200.0	90.22	180.00	6,780.2	-4,386.4	-295.4	4,395.0	0.00	0.00	0.00
11,300.0	90.22	180.00	6,779.8	-4,486.4	-295.4	4,494.9	0.00	0.00	0.00
11,400.0	90.22	180.00	6,779.4	-4,586.4	-295.4	4,594.8	0.00	0.00	0.00
11,500.0	90.22	180.00	6,779.0	-4,686.4	-295.4	4,694.7	0.00	0.00	0.00
11,600.0	90.22	180.00	6,778.6	-4,786.4	-295.4	4,794.6	0.00	0.00	0.00
11,700.0	90.22	180.00	6,778.2	-4,886.4	-295.4	4,894.5	0.00	0.00	0.00
11,800.0	90.22	180.00	6,777.9	-4,986.4	-295.4	4,994.4	0.00	0.00	0.00
11,900.0	90.22	180.00	6,777.5	-5,086.4	-295.4	5,094.3	0.00	0.00	0.00
12,000.0	90.22	180.00	6,777.1	-5,186.4	-295.4	5,194.2	0.00	0.00	0.00
12,100.0	90.22	180.00	6,776.7	-5,286.4	-295.4	5,294.2	0.00	0.00	0.00
12,200.0	90.22	180.00	6,776.3	-5,386.4	-295.4	5,394.1	0.00	0.00	0.00
12,300.0	90.22	180.00	6,775.9	-5,486.4	-295.4	5,494.0	0.00	0.00	0.00
12,400.0	90.22	180.00	6,775.5	-5,586.4	-295.4	5,593.9	0.00	0.00	0.00
12,500.0	90.22	180.00	6,775.2	-5,686.4	-295.4	5,693.8	0.00	0.00	0.00
12,600.0	90.22	180.00	6,774.8	-5,786.4	-295.4	5,793.7	0.00	0.00	0.00
12,700.0	90.22	180.00	6,774.4	-5,886.4	-295.4	5,893.6	0.00	0.00	0.00
12,800.0	90.22	180.00	6,774.0	-5,986.4	-295.4	5,993.5	0.00	0.00	0.00
12,900.0	90.22	180.00	6,773.6	-6,086.4	-295.4	6,093.4	0.00	0.00	0.00
13,000.0	90.22	180.00	6,773.2	-6,186.4	-295.4	6,193.4	0.00	0.00	0.00
13,100.0	90.22	180.00	6,772.9	-6,286.4	-295.4	6,293.3	0.00	0.00	0.00
13,200.0	90.22	180.00	6,772.5	-6,386.4	-295.4	6,393.2	0.00	0.00	0.00
13,300.0	90.22	180.00	6,772.1	-6,486.4	-295.4	6,493.1	0.00	0.00	0.00
13,400.0	90.22	180.00	6,771.7	-6,586.4	-295.4	6,593.0	0.00	0.00	0.00
13,500.0	90.22	180.00	6,771.3	-6,686.4	-295.4	6,692.9	0.00	0.00	0.00
13,600.0	90.22	180.00	6,770.9	-6,786.4	-295.4	6,792.8	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Chesnut 28R-403
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4635.0ft (RKB - 15')
Project:	SEC.28-T5N-R64W	MD Reference:	WELL @ 4635.0ft (RKB - 15')
Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	North Reference:	True
Well:	Chesnut 28R-403	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (2-13-14)		

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)
13,700.0	90.22	180.00	6,770.6	-6,886.4	-295.4	6,892.7	0.00	0.00	0.00
13,800.0	90.22	180.00	6,770.2	-6,986.4	-295.4	6,992.6	0.00	0.00	0.00
13,844.8	90.22	180.00	6,770.0	-7,031.2	-295.4	7,037.4	0.00	0.00	0.00
BHL 2133'FNL & 1260'FEL, SEC. 33									

Targets

Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
BHL 2133'FNL & 1260'FEL, SEC. 33	- plan hits target center - Point	0.00	0.00	6,770.0	-7,031.2	-295.4	1,374,380.40	3,264,836.07	40.357180	-104.549680
SHL 380'FNL & 940' FEL, SEC. 33	- plan hits target center - Point	0.00	0.00	1.0	0.0	0.0	1,381,414.04	3,265,056.03	40.376480	-104.548620

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,167.0	6,780.9	7"	7	7-1/2

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,433.0	3,417.0	PARKMAN		0.00	
4,145.2	4,124.0	SUSSEX		0.00	
4,835.8	4,810.0	SHANNON		0.00	
6,476.1	6,428.0	SHARON SPRINGS		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates	Comment
1,000.0	1,000.0	+N/-S (ft) 0.0 +E/-W (ft) 0.0	KOP #1
6,047.0	6,021.1	330.0 -295.4	KOP #2
7,365.4	6,794.9	-551.8 -295.4	End of Build



Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.28-T5N-R64W

Chesnut 28U-HZ Pad Sec.28-T5N-R64W

Chesnut 28R-403

Wellbore #1

Plan #1 (2-13-14)

Anticollision Report

13 February, 2014



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 28R-403
Project:	SEC.28-T5N-R64W	TVD Reference:	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	MD Reference:	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 28R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-13-14)	Offset TVD Reference:	Offset Datum

Reference	Plan #1 (2-13-14)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	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 2/13/2014			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	13,844.8	Plan #1 (2-13-14) (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Chesnut 28U-HZ Pad Sec.28-T5N-R64W						
Chesnut 28R-323 - Wellbore #1 - Plan #1 (2-13-14)	1,000.0	1,000.0	28.1	23.8	6.580	CC, ES
Chesnut 28R-323 - Wellbore #1 - Plan #1 (2-13-14)	13,844.8	13,818.3	380.4	112.2	1.419	Level 3, SF
Chesnut 28R-423 - Wellbore #1 - Plan #1 (2-13-14)	1,000.0	1,000.0	58.6	54.4	13.727	CC, ES
Chesnut 28R-423 - Wellbore #1 - Plan #1 (2-13-14)	13,844.8	13,845.8	696.6	422.5	2.541	SF
Chesnut 28U-243 - Wellbore #1 - Plan #1 (2-13-14)	1,000.0	1,000.0	89.2	85.0	20.895	CC, ES
Chesnut 28U-243 - Wellbore #1 - Plan #1 (2-13-14)	13,844.8	13,755.1	798.2	525.4	2.926	SF
Chesnut 28U-403 - Wellbore #1 - Plan #1 (2-13-14)	1,000.0	999.0	119.9	115.6	28.082	CC, ES
Chesnut 28U-403 - Wellbore #1 - Plan #1 (2-13-14)	1,200.0	1,191.4	130.5	125.4	25.471	SF
Existing Wells - Chesnut Pads - Sec.28-T5N-R64W						
Hall 28-2 (Exist) - Wellbore #1 - Wellbore #1	1,000.0	980.0	390.2	368.5	17.954	CC
Hall 28-2 (Exist) - Wellbore #1 - Wellbore #1	1,100.0	1,080.0	392.0	368.0	16.372	ES
Hall 28-2 (Exist) - Wellbore #1 - Wellbore #1	7,100.0	6,751.0	574.2	422.8	3.792	SF
Hall 28-5 (Exist) - Wellbore #1 - Wellbore #1	7,556.7	6,779.1	228.4	71.3	1.453	Level 3, CC, ES, SF
Hendricks 33-3 (Exist) - Wellbore #1 - Wellbore #1	12,059.6	6,784.9	526.7	287.9	2.206	CC, ES
Hendricks 33-3 (Exist) - Wellbore #1 - Wellbore #1	12,100.0	6,784.7	528.3	288.7	2.205	SF
P & A Farms 28-2 (Exist) - Wellbore #1 - Wellbore #1	9,749.9	6,784.7	144.9	-50.3	0.742	Level 1, CC, ES, SF

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28R-323 - Wellbore #1 - Plan #1 (2-13-14)											
Survey Program: 0-MWD											
Reference											
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)
0.0	0.0	0.0	0.0	0.0	0.0	97.46	-3.6	27.9	28.1	27.9	0.22
100.0	100.0	100.0	100.0	0.1	0.1	97.46	-3.6	27.9	28.1	27.4	0.67
200.0	200.0	200.0	200.0	0.3	0.3	97.46	-3.6	27.9	28.1	27.0	1.12
300.0	300.0	300.0	300.0	0.6	0.6	97.46	-3.6	27.9	28.1	26.5	1.57
400.0	400.0	400.0	400.0	0.8	0.8	97.46	-3.6	27.9	28.1	26.1	2.02
500.0	500.0	500.0	500.0	1.0	1.0	97.46	-3.6	27.9	28.1	25.6	2.47
600.0	600.0	600.0	600.0	1.2	1.2	97.46	-3.6	27.9	28.1	25.2	2.92
700.0	700.0	700.0	700.0	1.5	1.5	97.46	-3.6	27.9	28.1	24.7	3.37
800.0	800.0	800.0	800.0	1.7	1.7	97.46	-3.6	27.9	28.1	24.3	3.82
900.0	900.0	900.0	900.0	1.9	1.9	97.46	-3.6	27.9	28.1		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 28R-403
Project:	SEC.28-T5N-R64W	TVD Reference:	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	MD Reference:	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 28R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-13-14)	Offset TVD Reference:	Offset Datum

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28R-323 - Wellbore #1 - Plan #1 (2-13-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	97.46		-3.6	27.9	28.1	23.8	4.27	6.580 CC, ES	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	141.49		-3.6	27.9	29.4	24.7	4.72	6.244	
1,200.0	1,199.8	1,199.8	1,199.8	2.6	2.6	146.99		-3.6	27.9	33.7	28.5	5.16	6.537	
1,300.0	1,299.5	1,299.5	1,299.5	2.8	2.8	153.52		-3.6	27.9	41.3	35.7	5.59	7.384	
1,345.6	1,344.7	1,344.7	1,344.7	2.9	2.9	156.33		-3.6	27.9	45.9	40.1	5.79	7.935	
1,400.0	1,398.8	1,398.8	1,398.8	3.1	3.0	159.23		-3.6	27.9	52.0	46.0	6.03	8.624	
1,500.0	1,498.0	1,498.0	1,498.0	3.3	3.3	163.08		-3.6	27.9	63.4	56.9	6.48	9.791	
1,600.0	1,597.3	1,597.3	1,597.3	3.6	3.5	165.76		-3.6	27.9	75.0	68.1	6.92	10.833	
1,700.0	1,696.6	1,696.6	1,696.6	3.9	3.7	167.71		-3.6	27.9	86.7	79.4	7.37	11.762	
1,800.0	1,795.9	1,795.9	1,795.9	4.1	3.9	169.20		-3.6	27.9	98.5	90.7	7.82	12.590	
1,900.0	1,895.1	1,895.1	1,895.1	4.4	4.1	170.37		-3.6	27.9	110.4	102.1	8.28	13.333	
2,000.0	1,994.4	1,994.4	1,994.4	4.7	4.4	171.32		-3.6	27.9	122.2	113.5	8.73	14.002	
2,100.0	2,093.7	2,096.0	2,096.0	5.0	4.6	171.52		-2.1	28.1	133.3	124.1	9.19	14.509	
2,200.0	2,193.0	2,198.1	2,198.0	5.3	4.8	170.45		3.1	28.8	142.6	132.9	9.65	14.775	
2,300.0	2,292.2	2,300.2	2,299.6	5.6	5.1	168.30		11.9	30.1	150.2	140.0	10.12	14.842	
2,400.0	2,391.5	2,399.7	2,398.6	5.9	5.3	165.87		22.1	31.6	157.2	146.6	10.59	14.841	
2,500.0	2,490.8	2,499.3	2,497.6	6.2	5.5	163.65		32.3	33.0	164.5	153.4	11.07	14.852	
2,600.0	2,590.0	2,598.8	2,596.6	6.5	5.8	161.62		42.5	34.5	172.0	160.4	11.56	14.870	
2,700.0	2,689.3	2,698.3	2,695.6	6.8	6.0	159.76		52.7	36.0	179.7	167.6	12.06	14.893	
2,800.0	2,788.6	2,797.9	2,794.7	7.1	6.3	158.06		62.9	37.4	187.5	175.0	12.57	14.919	
2,900.0	2,887.9	2,897.4	2,893.7	7.4	6.5	156.49		73.1	38.9	195.6	182.5	13.08	14.948	
3,000.0	2,987.1	2,997.0	2,992.7	7.7	6.8	155.05		83.3	40.4	203.7	190.1	13.60	14.977	
3,100.0	3,086.4	3,096.5	3,091.7	8.0	7.0	153.71		93.5	41.8	212.0	197.9	14.13	15.007	
3,200.0	3,185.7	3,196.0	3,190.7	8.4	7.3	152.48		103.7	43.3	220.4	205.7	14.66	15.037	
3,300.0	3,285.0	3,295.6	3,289.7	8.7	7.5	151.34		113.9	44.8	228.8	213.7	15.19	15.067	
3,400.0	3,384.2	3,395.1	3,388.7	9.0	7.8	150.28		124.1	46.3	237.4	221.7	15.73	15.097	
3,500.0	3,483.5	3,494.7	3,487.7	9.3	8.1	149.30		134.3	47.7	246.0	229.8	16.27	15.126	
3,600.0	3,582.8	3,594.2	3,586.7	9.6	8.3	148.38		144.5	49.2	254.7	237.9	16.81	15.154	
3,700.0	3,682.1	3,693.7	3,685.7	9.9	8.6	147.52		154.7	50.7	263.5	246.2	17.36	15.181	
3,800.0	3,781.3	3,793.3	3,784.7	10.2	8.9	146.72		164.9	52.1	272.3	254.4	17.91	15.208	
3,900.0	3,880.6	3,892.8	3,883.7	10.5	9.2	145.97		175.1	53.6	281.2	262.7	18.46	15.234	
4,000.0	3,979.9	3,992.4	3,982.7	10.8	9.4	145.27		185.3	55.1	290.1	271.1	19.01	15.259	
4,100.0	4,079.1	4,091.9	4,081.7	11.2	9.7	144.60		195.5	56.5	299.1	279.5	19.57	15.284	
4,200.0	4,178.4	4,191.4	4,180.7	11.5	10.0	143.98		205.7	58.0	308.1	287.9	20.13	15.307	
4,300.0	4,277.7	4,291.0	4,279.7	11.8	10.3	143.39		215.9	59.5	317.1	296.4	20.68	15.330	
4,400.0	4,377.0	4,390.5	4,378.7	12.1	10.5	142.83		226.1	60.9	326.1	304.9	21.24	15.353	
4,500.0	4,476.2	4,490.1	4,477.7	12.4	10.8	142.31		236.3	62.4	335.2	313.4	21.80	15.374	
4,600.0	4,575.5	4,589.6	4,576.7	12.7	11.1	141.81		246.5	63.9	344.3	322.0	22.37	15.395	
4,680.4	4,655.3	4,669.6	4,656.3	13.0	11.3	141.42		254.7	65.1	351.7	328.9	22.82	15.411	
4,700.0	4,674.8	4,689.1	4,675.8	13.0	11.4	141.35		256.7	65.3	353.4	330.5	22.93	15.413	
4,800.0	4,774.3	4,788.8	4,774.9	13.3	11.6	140.75		267.0	66.8	360.7	337.3	23.46	15.376	
4,900.0	4,874.1	4,888.5	4,874.0	13.4	11.9	139.79		277.2	68.3	365.4	341.4	23.97	15.241	
5,000.0	4,974.1	4,988.1	4,973.1	13.6	12.2	138.48		287.4	69.8	367.5	343.1	24.47	15.019	
5,025.9	5,000.0	5,013.8	4,998.7	13.6	12.3	96.24		290.0	70.1	367.7	343.1	24.60	14.949	
5,100.0	5,074.1	5,087.5	5,072.0	13.8	12.5	95.05		297.6	71.2	368.1	343.1	24.98	14.733	
5,200.0	5,174.1	5,187.0	5,170.9	13.9	12.8	93.46		307.8	72.7	368.8	343.3	25.51	14.454	
5,300.0	5,274.1	5,287.4	5,270.9	14.1	13.0	91.97		317.3	74.1	369.7	343.7	26.02	14.209	
5,400.0	5,374.1	5,388.8	5,372.0	14.3	13.2	91.00		323.5	75.0	370.4	344.0	26.45	14.006	
5,500.0	5,474.1	5,490.4	5,473.6	14.5	13.4	90.58		326.2	75.3	370.8	343.9	26.83	13.818	
5,600.0	5,574.1	5,590.9	5,574.1	14.7	13.6	90.56		326.4	75.4	370.8	343.6	27.20	13.631	
5,700.0	5,674.1	5,690.9	5,674.1	14.9	13.8	90.56		326.4	75.4	370.8	343.2	27.59	13.437	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 28R-403
Project:	SEC.28-T5N-R64W	TVD Reference:	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	MD Reference:	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 28R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-13-14)	Offset TVD Reference:	Offset Datum

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28R-323 - Wellbore #1 - Plan #1 (2-13-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
5,800.0	5,774.1	5,790.9	5,774.1	15.0	14.0	90.56	326.4	75.4	370.8	342.8	27.99	13.247		
5,900.0	5,874.1	5,890.9	5,874.1	15.2	14.2	90.56	326.4	75.4	370.8	342.4	28.39	13.062		
6,000.0	5,974.1	5,990.9	5,974.1	15.4	14.4	90.56	326.4	75.4	370.8	342.0	28.79	12.881		
6,025.7	5,999.8	6,016.5	5,999.8	15.5	14.4	90.56	326.4	75.4	370.8	341.9	28.89	12.835		
6,047.0	6,021.1	6,037.8	6,021.1	15.5	14.5	90.58	326.2	75.4	370.8	341.8	28.97	12.799		
6,050.0	6,024.1	6,040.8	6,024.0	15.5	14.5	-89.41	326.2	75.4	370.8	341.8	28.98	12.795		
6,100.0	6,074.1	6,090.5	6,073.7	15.6	14.5	-89.29	323.6	75.4	370.8	341.7	29.11	12.738		
6,150.0	6,123.8	6,140.2	6,123.0	15.6	14.6	-89.16	317.7	75.4	370.8	341.6	29.19	12.701		
6,200.0	6,173.1	6,189.8	6,171.8	15.6	14.6	-89.05	308.7	75.4	370.8	341.6	29.24	12.681		
6,250.0	6,221.7	6,239.4	6,219.8	15.7	14.6	-88.93	296.5	75.4	370.8	341.6	29.26	12.675		
6,300.0	6,269.5	6,288.9	6,266.9	15.7	14.6	-88.82	281.3	75.4	370.8	341.6	29.24	12.682		
6,350.0	6,316.2	6,338.4	6,312.9	15.6	14.6	-88.71	263.1	75.4	370.9	341.6	29.21	12.697		
6,400.0	6,361.7	6,387.8	6,357.6	15.6	14.6	-88.61	241.9	75.4	370.9	341.7	29.16	12.719		
6,450.0	6,405.7	6,437.2	6,400.7	15.6	14.5	-88.52	217.9	75.4	370.9	341.8	29.11	12.742		
6,500.0	6,448.0	6,486.6	6,442.3	15.6	14.5	-88.43	191.2	75.4	370.9	341.8	29.06	12.763		
6,550.0	6,488.5	6,535.9	6,481.9	15.5	14.5	-88.35	161.9	75.4	370.9	341.9	29.03	12.776		
6,600.0	6,527.1	6,585.2	6,519.6	15.5	14.5	-88.28	130.2	75.4	370.9	341.9	29.03	12.776		
6,650.0	6,563.4	6,634.4	6,555.1	15.5	14.5	-88.21	96.0	75.4	370.9	341.9	29.08	12.758		
6,700.0	6,597.4	6,683.7	6,588.4	15.4	14.6	-88.15	59.7	75.4	371.0	341.8	29.17	12.718		
6,750.0	6,629.0	6,732.9	6,619.2	15.4	14.7	-88.10	21.4	75.4	371.0	341.6	29.32	12.651		
6,800.0	6,658.0	6,782.1	6,647.4	15.4	14.8	-88.06	-18.9	75.4	371.0	341.4	29.55	12.553		
6,850.0	6,684.2	6,831.3	6,673.1	15.4	14.9	-88.02	-60.9	75.4	371.0	341.1	29.86	12.424		
6,900.0	6,707.6	6,880.4	6,695.9	15.4	15.1	-87.99	-104.4	75.4	371.0	340.7	30.26	12.262		
6,950.0	6,728.0	6,929.6	6,715.9	15.6	15.4	-87.98	-149.3	75.4	371.0	340.3	30.74	12.068		
7,000.0	6,745.5	6,978.8	6,733.0	15.9	15.7	-87.97	-195.4	75.4	371.0	339.7	31.32	11.845		
7,050.0	6,759.8	7,027.9	6,747.1	16.2	16.0	-87.97	-242.5	75.4	371.0	339.0	31.99	11.596		
7,100.0	6,771.0	7,077.1	6,758.1	16.6	16.4	-87.97	-290.4	75.4	371.0	338.2	32.75	11.327		
7,150.0	6,778.9	7,126.2	6,766.0	17.1	16.8	-87.99	-338.9	75.4	371.0	337.4	33.60	11.041		
7,167.0	6,780.9	7,143.0	6,768.0	17.2	17.0	-88.00	-355.5	75.4	371.0	337.1	33.90	10.942		
7,169.3	6,781.1	7,145.2	6,768.2	17.3	17.0	-88.00	-357.7	75.4	371.0	337.0	33.95	10.929		
7,200.0	6,784.3	7,175.4	6,770.8	17.6	17.3	-87.90	-387.8	75.4	371.0	336.5	34.52	10.746		
7,241.0	6,788.6	7,215.5	6,772.3	18.0	17.7	-87.50	-427.9	75.4	371.1	335.8	35.32	10.506		
7,300.0	6,793.3	7,273.8	6,771.8	18.6	18.3	-86.70	-486.2	75.4	371.4	334.8	36.55	10.160		
7,365.4	6,794.9	7,339.2	6,771.0	19.4	19.1	-86.31	-551.5	75.4	371.5	333.5	38.04	9.766		
7,400.0	6,794.7	7,373.8	6,770.5	19.8	19.5	-86.26	-586.1	75.4	371.6	332.7	38.88	9.558		
7,500.0	6,794.4	7,473.8	6,769.2	21.1	20.8	-86.11	-686.1	75.4	371.6	330.2	41.43	8.970		
7,600.0	6,794.0	7,573.8	6,767.8	22.5	22.2	-85.97	-786.1	75.4	371.7	327.5	44.17	8.415		
7,700.0	6,793.6	7,673.8	6,766.5	23.9	23.6	-85.82	-886.1	75.4	371.8	324.7	47.06	7.900		
7,800.0	6,793.2	7,773.8	6,765.2	25.4	25.1	-85.68	-986.1	75.4	371.8	321.8	50.07	7.426		
7,900.0	6,792.8	7,873.8	6,763.9	27.0	26.7	-85.53	-1,086.1	75.4	371.9	318.7	53.19	6.992		
8,000.0	6,792.4	7,973.7	6,762.5	28.6	28.3	-85.39	-1,186.0	75.4	372.0	315.6	56.39	6.596		
8,100.0	6,792.1	8,073.7	6,761.2	30.2	30.0	-85.24	-1,286.0	75.4	372.0	312.4	59.67	6.235		
8,200.0	6,791.7	8,173.7	6,759.9	31.9	31.6	-85.10	-1,386.0	75.4	372.1	309.1	63.00	5.907		
8,300.0	6,791.3	8,273.7	6,758.6	33.6	33.3	-84.95	-1,486.0	75.4	372.2	305.8	66.39	5.607		
8,400.0	6,790.9	8,373.7	6,757.2	35.3	35.1	-84.81	-1,586.0	75.4	372.3	302.5	69.82	5.333		
8,500.0	6,790.5	8,473.7	6,755.9	37.0	36.8	-84.67	-1,686.0	75.4	372.4	299.1	73.28	5.082		
8,600.0	6,790.1	8,573.7	6,754.6	38.8	38.6	-84.52	-1,786.0	75.4	372.5	295.7	76.78	4.851		
8,700.0	6,789.8	8,673.7	6,753.3	40.5	40.4	-84.38	-1,886.0	75.4	372.6	292.3	80.30	4.640		
8,800.0	6,789.4	8,773.7	6,751.9	42.3	42.2	-84.23	-1,985.9	75.4	372.7	288.8	83.85	4.445		
8,900.0	6,789.0	8,873.7	6,750.6	44.1	44.0	-84.09	-2,085.9	75.4	372.8	285.3	87.41	4.264		
9,000.0	6,788.6	8,973.7	6,749.3	45.9	45.8	-83.94	-2,185.9	75.4	372.8	281.9	91.00	4.097		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 28R-403
Project:	SEC.28-T5N-R64W	TVD Reference:	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	MD Reference:	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 28R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-13-14)	Offset TVD Reference:	Offset Datum

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28R-323 - Wellbore #1 - Plan #1 (2-13-14)												Offset Site Error: 0.0 ft	
Survey Program: 0-MWD												Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
9,100.0	6,788.2	9,073.7	6,747.9	47.7	47.6	-83.80	-2,285.9	75.4	373.0	278.4	94.59	3.943	
9,200.0	6,787.8	9,173.7	6,746.6	49.6	49.4	-83.66	-2,385.9	75.4	373.1	274.8	98.21	3.799	
9,300.0	6,787.5	9,273.7	6,745.3	51.4	51.2	-83.51	-2,485.9	75.4	373.2	271.3	101.83	3.665	
9,400.0	6,787.1	9,373.7	6,744.0	53.2	53.1	-83.37	-2,585.9	75.4	373.3	267.8	105.46	3.539	
9,500.0	6,786.7	9,473.7	6,742.6	55.1	54.9	-83.23	-2,685.8	75.4	373.4	264.3	109.11	3.422	
9,600.0	6,786.3	9,573.7	6,741.3	56.9	56.8	-83.08	-2,785.8	75.4	373.5	260.7	112.75	3.312	
9,700.0	6,785.9	9,673.7	6,740.0	58.8	58.6	-82.94	-2,885.8	75.4	373.6	257.2	116.41	3.209	
9,800.0	6,785.5	9,773.7	6,738.7	60.6	60.5	-82.80	-2,985.8	75.4	373.7	253.6	120.07	3.112	
9,900.0	6,785.1	9,873.7	6,737.3	62.5	62.4	-82.65	-3,085.8	75.4	373.8	250.1	123.74	3.021	
10,000.0	6,784.8	9,973.7	6,736.0	64.3	64.2	-82.51	-3,185.8	75.4	374.0	246.6	127.41	2.935	
10,100.0	6,784.4	10,073.7	6,734.7	66.2	66.1	-82.37	-3,285.8	75.4	374.1	243.0	131.08	2.854	
10,200.0	6,784.0	10,173.6	6,733.4	68.1	68.0	-82.22	-3,385.8	75.4	374.2	239.5	134.76	2.777	
10,300.0	6,783.6	10,273.6	6,732.0	69.9	69.8	-82.08	-3,485.7	75.4	374.3	235.9	138.44	2.704	
10,400.0	6,783.2	10,373.6	6,730.7	71.8	71.7	-81.94	-3,585.7	75.4	374.5	232.4	142.12	2.635	
10,500.0	6,782.8	10,473.6	6,729.4	73.7	73.6	-81.79	-3,685.7	75.4	374.6	228.8	145.80	2.569	
10,600.0	6,782.5	10,573.6	6,728.1	75.6	75.5	-81.65	-3,785.7	75.4	374.7	225.3	149.49	2.507	
10,700.0	6,782.1	10,673.6	6,726.7	77.4	77.4	-81.51	-3,885.7	75.4	374.9	221.7	153.17	2.447	
10,800.0	6,781.7	10,773.6	6,725.4	79.3	79.3	-81.37	-3,985.7	75.4	375.0	218.2	156.86	2.391	
10,900.0	6,781.3	10,873.6	6,724.1	81.2	81.1	-81.22	-4,085.7	75.4	375.2	214.6	160.54	2.337	
11,000.0	6,780.9	10,973.6	6,722.7	83.1	83.0	-81.08	-4,185.6	75.4	375.3	211.1	164.23	2.285	
11,100.0	6,780.5	11,073.6	6,721.4	85.0	84.9	-80.94	-4,285.6	75.4	375.5	207.5	167.91	2.236	
11,200.0	6,780.2	11,173.6	6,720.1	86.9	86.8	-80.80	-4,385.6	75.4	375.6	204.0	171.60	2.189	
11,300.0	6,779.8	11,273.6	6,718.8	88.8	88.7	-80.66	-4,485.6	75.4	375.8	200.5	175.28	2.144	
11,400.0	6,779.4	11,373.6	6,717.4	90.7	90.6	-80.51	-4,585.6	75.4	375.9	197.0	178.96	2.101	
11,500.0	6,779.0	11,473.6	6,716.1	92.6	92.5	-80.37	-4,685.6	75.4	376.1	193.4	182.64	2.059	
11,600.0	6,778.6	11,573.6	6,714.8	94.4	94.4	-80.23	-4,785.6	75.4	376.2	189.9	186.32	2.019	
11,700.0	6,778.2	11,673.6	6,713.5	96.3	96.3	-80.09	-4,885.6	75.4	376.4	186.4	190.00	1.981	
11,800.0	6,777.9	11,773.6	6,712.1	98.2	98.2	-79.95	-4,985.5	75.4	376.6	182.9	193.67	1.944	
11,900.0	6,777.5	11,873.6	6,710.8	100.1	100.1	-79.81	-5,085.5	75.4	376.7	179.4	197.35	1.909	
12,000.0	6,777.1	11,973.6	6,709.5	102.0	102.0	-79.67	-5,185.5	75.4	376.9	175.9	201.02	1.875	
12,100.0	6,776.7	12,073.6	6,708.2	103.9	103.9	-79.53	-5,285.5	75.4	377.1	172.4	204.69	1.842	
12,200.0	6,776.3	12,173.6	6,706.8	105.8	105.8	-79.39	-5,385.5	75.4	377.2	168.9	208.36	1.811	
12,300.0	6,775.9	12,273.6	6,705.5	107.7	107.7	-79.24	-5,485.5	75.4	377.4	165.4	212.02	1.780	
12,400.0	6,775.5	12,373.6	6,704.2	109.6	109.6	-79.10	-5,585.5	75.4	377.6	161.9	215.68	1.751	
12,500.0	6,775.2	12,473.5	6,702.9	111.5	111.5	-78.96	-5,685.4	75.4	377.8	158.4	219.34	1.722	
12,600.0	6,774.8	12,573.5	6,701.5	113.4	113.4	-78.82	-5,785.4	75.4	377.9	155.0	223.00	1.695	
12,700.0	6,774.4	12,673.5	6,700.2	115.3	115.3	-78.68	-5,885.4	75.4	378.1	151.5	226.65	1.668	
12,800.0	6,774.0	12,773.5	6,698.9	117.2	117.2	-78.54	-5,985.4	75.4	378.3	148.0	230.30	1.643	
12,900.0	6,773.6	12,873.5	6,697.5	119.1	119.1	-78.40	-6,085.4	75.4	378.5	144.6	233.95	1.618	
13,000.0	6,773.2	12,973.5	6,696.2	121.1	121.0	-78.26	-6,185.4	75.4	378.7	141.1	237.59	1.594	
13,100.0	6,772.9	13,073.5	6,694.9	123.0	122.9	-78.12	-6,285.4	75.4	378.9	137.7	241.23	1.571	
13,200.0	6,772.5	13,173.5	6,693.6	124.9	124.8	-77.99	-6,385.4	75.4	379.1	134.2	244.87	1.548	
13,300.0	6,772.1	13,273.5	6,692.2	126.8	126.7	-77.85	-6,485.3	75.4	379.3	130.8	248.50	1.526	
13,400.0	6,771.7	13,373.5	6,690.9	128.7	128.6	-77.71	-6,585.3	75.4	379.5	127.4	252.13	1.505	
13,500.0	6,771.3	13,473.5	6,689.6	130.6	130.6	-77.57	-6,685.3	75.4	379.7	123.9	255.76	1.485 Level 3	
13,600.0	6,770.9	13,573.5	6,688.3	132.5	132.5	-77.43	-6,785.3	75.4	379.9	120.5	259.38	1.465 Level 3	
13,700.0	6,770.6	13,673.5	6,686.9	134.4	134.4	-77.29	-6,885.3	75.4	380.1	117.1	263.00	1.445 Level 3	
13,800.0	6,770.2	13,773.5	6,685.6	136.3	136.3	-77.15	-6,985.3	75.4	380.3	113.7	266.61	1.426 Level 3	
13,844.8	6,770.0	13,818.3	6,685.0	137.2	137.1	-77.09	-7,030.0	75.4	380.4	112.2	268.16	1.419 Level 3, SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 28R-403
Project:	SEC.28-T5N-R64W	TVD Reference:	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	MD Reference:	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 28R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-13-14)	Offset TVD Reference:	Offset Datum

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28R-423 - Wellbore #1 - Plan #1 (2-13-14)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	93.56	-3.6	58.5	58.6				
100.0	100.0	100.0	100.0	0.1	0.1	93.56	-3.6	58.5	58.6	58.4	0.22	260.819	
200.0	200.0	200.0	200.0	0.3	0.3	93.56	-3.6	58.5	58.6	57.9	0.67	86.940	
300.0	300.0	300.0	300.0	0.6	0.6	93.56	-3.6	58.5	58.6	57.5	1.12	52.164	
400.0	400.0	400.0	400.0	0.8	0.8	93.56	-3.6	58.5	58.6	57.0	1.57	37.260	
500.0	500.0	500.0	500.0	1.0	1.0	93.56	-3.6	58.5	58.6	56.6	2.02	28.980	
600.0	600.0	600.0	600.0	1.2	1.2	93.56	-3.6	58.5	58.6	56.2	2.47	23.711	
700.0	700.0	700.0	700.0	1.5	1.5	93.56	-3.6	58.5	58.6	55.7	2.92	20.063	
800.0	800.0	800.0	800.0	1.7	1.7	93.56	-3.6	58.5	58.6	55.3	3.37	17.388	
900.0	900.0	900.0	900.0	1.9	1.9	93.56	-3.6	58.5	58.6	54.8	3.82	15.342	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	93.56	-3.6	58.5	58.6	54.4	4.27	13.727 CC, ES	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	136.55	-3.6	58.5	59.9	55.2	4.72	12.698	
1,200.0	1,199.8	1,199.8	1,199.8	2.6	2.6	139.73	-3.6	58.5	63.8	58.6	5.16	12.371	
1,300.0	1,299.5	1,299.5	1,299.5	2.8	2.8	144.22	-3.6	58.5	70.7	65.1	5.59	12.631	
1,345.6	1,344.7	1,344.7	1,344.7	2.9	2.9	146.46	-3.6	58.5	74.9	69.1	5.79	12.926	
1,400.0	1,398.8	1,398.8	1,398.8	3.1	3.0	149.03	-3.6	58.5	80.4	74.4	6.04	13.326	
1,500.0	1,498.0	1,498.0	1,498.0	3.3	3.3	152.93	-3.6	58.5	91.0	84.5	6.48	14.032	
1,600.0	1,597.3	1,596.0	1,596.0	3.6	3.5	155.13	-2.5	59.7	102.5	95.5	6.93	14.790	
1,700.0	1,696.6	1,693.8	1,693.6	3.9	3.7	155.32	0.9	63.2	115.3	108.0	7.37	15.639	
1,800.0	1,795.9	1,791.1	1,790.6	4.1	3.9	154.11	6.6	69.2	129.5	121.7	7.83	16.540	
1,900.0	1,895.1	1,889.0	1,887.9	4.4	4.1	152.10	14.3	77.1	144.9	136.6	8.30	17.461	
2,000.0	1,994.4	1,987.6	1,985.8	4.7	4.4	150.37	22.2	85.4	160.7	151.9	8.78	18.294	
2,100.0	2,093.7	2,086.3	2,083.8	5.0	4.6	148.94	30.2	93.6	176.5	167.2	9.27	19.036	
2,200.0	2,193.0	2,184.9	2,181.8	5.3	4.9	147.75	38.1	101.9	192.4	182.6	9.77	19.699	
2,300.0	2,292.2	2,283.6	2,279.8	5.6	5.1	146.74	46.1	110.1	208.4	198.1	10.27	20.292	
2,400.0	2,391.5	2,382.2	2,377.8	5.9	5.4	145.88	54.0	118.4	224.4	213.7	10.78	20.827	
2,500.0	2,490.8	2,480.9	2,475.8	6.2	5.7	145.13	62.0	126.7	240.5	229.2	11.29	21.309	
2,600.0	2,590.0	2,579.5	2,573.7	6.5	5.9	144.47	69.9	134.9	256.6	244.8	11.80	21.745	
2,700.0	2,689.3	2,678.2	2,671.7	6.8	6.2	143.90	77.9	143.2	272.8	260.5	12.32	22.141	
2,800.0	2,788.6	2,776.8	2,769.7	7.1	6.5	143.38	85.9	151.4	289.0	276.1	12.84	22.502	
2,900.0	2,887.9	2,875.5	2,867.7	7.4	6.8	142.93	93.8	159.7	305.2	291.8	13.37	22.833	
3,000.0	2,987.1	2,974.2	2,965.7	7.7	7.1	142.51	101.8	167.9	321.4	307.5	13.89	23.136	
3,100.0	3,086.4	3,072.8	3,063.7	8.0	7.4	142.14	109.7	176.2	337.6	323.2	14.42	23.415	
3,200.0	3,185.7	3,171.5	3,161.6	8.4	7.6	141.80	117.7	184.4	353.8	338.9	14.95	23.673	
3,300.0	3,285.0	3,270.1	3,259.6	8.7	7.9	141.49	125.6	192.7	370.1	354.6	15.48	23.911	
3,400.0	3,384.2	3,368.8	3,357.6	9.0	8.2	141.21	133.6	201.0	386.4	370.3	16.01	24.132	
3,500.0	3,483.5	3,467.4	3,455.6	9.3	8.5	140.95	141.5	209.2	402.6	386.1	16.54	24.338	
3,600.0	3,582.8	3,566.1	3,553.6	9.6	8.8	140.71	149.5	217.5	418.9	401.8	17.08	24.529	
3,700.0	3,682.1	3,664.7	3,651.6	9.9	9.1	140.49	157.4	225.7	435.2	417.6	17.61	24.708	
3,800.0	3,781.3	3,763.4	3,749.5	10.2	9.4	140.28	165.4	234.0	451.5	433.3	18.15	24.876	
3,900.0	3,880.6	3,862.0	3,847.5	10.5	9.7	140.09	173.3	242.2	467.8	449.1	18.69	25.033	
4,000.0	3,979.9	3,960.7	3,945.5	10.8	10.0	139.91	181.3	250.5	484.1	464.8	19.22	25.180	
4,100.0	4,079.1	4,059.3	4,043.5	11.2	10.3	139.74	189.2	258.8	500.4	480.6	19.76	25.319	
4,200.0	4,178.4	4,158.0	4,141.5	11.5	10.6	139.59	197.2	267.0	516.7	496.4	20.30	25.450	
4,300.0	4,277.7	4,256.6	4,239.5	11.8	10.9	139.44	205.1	275.3	533.0	512.1	20.84	25.573	
4,400.0	4,377.0	4,355.3	4,337.4	12.1	11.2	139.30	213.1	283.5	549.3	527.9	21.38	25.690	
4,500.0	4,476.2	4,453.9	4,435.4	12.4	11.5	139.17	221.0	291.8	565.6	543.7	21.92	25.800	
4,600.0	4,575.5	4,552.6	4,533.4	12.7	11.8	139.05	229.0	300.0	581.9	559.5	22.46	25.905	
4,680.4	4,655.3	4,631.9	4,612.1	13.0	12.0	138.96	235.4	306.7	595.0	572.1	22.90	25.985	
4,700.0	4,674.8	4,651.2	4,631.4	13.0	12.1	138.97	237.0	308.3	598.2	575.2	23.01	26.000	
4,800.0	4,774.3	4,750.1	4,729.6	13.3	12.4	138.90	244.9	316.6	612.7	589.2	23.52	26.052	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 28R-403
Project:	SEC.28-T5N-R64W	TVD Reference:	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	MD Reference:	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 28R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-13-14)	Offset TVD Reference:	Offset Datum

Offset Design		Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28R-423 - Wellbore #1 - Plan #1 (2-13-14)											Offset Site Error:		0.0 ft
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor			
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
4,900.0	4,874.1	4,849.3	4,828.1	13.4	12.7	138.60	252.9	324.9	624.7	600.6	24.00	26.024			
5,000.0	4,974.1	4,948.6	4,926.7	13.6	13.0	138.07	260.9	333.2	634.0	609.6	24.46	25.924			
5,025.9	5,000.0	4,974.3	4,952.3	13.6	13.0	96.06	263.0	335.3	636.1	611.5	24.57	25.886			
5,100.0	5,074.1	5,047.9	5,025.4	13.8	13.3	95.48	268.9	341.5	641.7	616.8	24.91	25.760			
5,200.0	5,174.1	5,147.2	5,124.0	13.9	13.6	94.70	276.9	349.8	649.3	623.9	25.38	25.584			
5,300.0	5,274.1	5,246.6	5,222.7	14.1	13.9	93.94	284.9	358.1	657.1	631.2	25.85	25.420			
5,400.0	5,374.1	5,345.9	5,321.3	14.3	14.2	93.20	292.9	366.4	665.0	638.6	26.32	25.268			
5,500.0	5,474.1	5,445.2	5,420.0	14.5	14.5	92.48	301.0	374.7	672.9	646.2	26.78	25.126			
5,600.0	5,574.1	5,544.5	5,518.6	14.7	14.8	91.78	309.0	383.0	681.0	653.8	27.25	24.995			
5,700.0	5,674.1	5,654.2	5,627.7	14.9	15.1	91.05	317.4	391.8	688.8	661.1	27.70	24.865			
5,800.0	5,774.1	5,774.7	5,747.7	15.0	15.3	90.53	323.5	398.2	694.1	666.0	28.14	24.670			
5,900.0	5,874.1	5,895.6	5,868.6	15.2	15.5	90.31	326.2	401.0	696.4	667.9	28.55	24.396			
6,000.0	5,974.1	6,001.1	5,974.1	15.4	15.7	90.30	326.4	401.1	696.5	667.6	28.93	24.078			
6,047.0	6,021.1	6,048.1	6,021.1	15.5	15.8	90.30	326.4	401.1	696.5	667.4	29.11	23.925			
6,050.0	6,024.1	6,051.1	6,024.1	15.5	15.8	-89.70	326.4	401.1	696.5	667.4	29.12	23.916			
6,100.0	6,074.1	6,100.8	6,073.8	15.6	15.9	-89.72	324.8	401.1	696.5	667.2	29.27	23.795			
6,150.0	6,123.8	6,150.6	6,123.4	15.6	15.9	-89.74	320.0	401.1	696.5	667.1	29.37	23.716			
6,200.0	6,173.1	6,200.4	6,172.5	15.6	15.9	-89.76	311.9	401.1	696.5	667.1	29.43	23.670			
6,250.0	6,221.7	6,250.3	6,221.1	15.7	16.0	-89.79	300.7	401.1	696.5	667.1	29.45	23.652			
6,300.0	6,269.5	6,300.1	6,268.8	15.7	16.0	-89.81	286.3	401.1	696.5	667.1	29.44	23.658			
6,350.0	6,316.2	6,350.0	6,315.5	15.6	15.9	-89.84	268.8	401.1	696.5	667.1	29.41	23.683			
6,374.4	6,338.5	6,374.3	6,337.8	15.6	15.9	-89.85	259.3	401.1	696.5	667.1	29.39	23.702			
6,400.0	6,361.7	6,399.8	6,360.9	15.6	15.9	-89.86	248.4	401.1	696.5	667.2	29.36	23.721			
6,450.0	6,405.7	6,449.7	6,405.0	15.6	15.9	-89.89	225.0	401.1	696.5	667.2	29.31	23.765			
6,500.0	6,448.0	6,499.7	6,447.4	15.6	15.9	-89.92	198.7	401.1	696.5	667.3	29.26	23.805			
6,550.0	6,488.5	6,549.6	6,488.1	15.5	15.8	-89.94	169.8	401.1	696.5	667.3	29.22	23.834			
6,600.0	6,527.1	6,599.6	6,526.8	15.5	15.8	-89.97	138.2	401.1	696.5	667.3	29.22	23.841			
6,625.5	6,545.9	6,625.1	6,545.8	15.5	15.8	-89.98	121.1	401.1	696.5	667.3	29.23	23.828			
6,650.0	6,563.4	6,649.5	6,563.4	15.5	15.7	-90.00	104.1	401.1	696.5	667.3	29.25	23.816			
6,700.0	6,597.4	6,699.6	6,597.7	15.4	15.7	-90.03	67.7	401.1	696.5	667.2	29.33	23.751			
6,750.0	6,629.0	6,749.6	6,629.5	15.4	15.7	-90.05	29.1	401.1	696.5	667.0	29.47	23.636			
6,800.0	6,658.0	6,799.6	6,658.8	15.4	15.7	-90.08	-11.5	401.1	696.5	666.8	29.68	23.465			
6,850.0	6,684.2	6,849.7	6,685.3	15.4	15.7	-90.11	-53.9	401.1	696.5	666.5	29.98	23.234			
6,900.0	6,707.6	6,899.8	6,709.0	15.4	15.8	-90.13	-98.0	401.1	696.5	666.2	30.36	22.941			
6,950.0	6,728.0	6,949.9	6,729.8	15.6	15.9	-90.16	-143.6	401.1	696.5	665.7	30.84	22.587			
7,000.0	6,745.5	7,000.1	6,747.6	15.9	16.1	-90.18	-190.5	401.1	696.5	665.1	31.41	22.176			
7,050.0	6,759.8	7,050.2	6,762.2	16.2	16.5	-90.21	-238.4	401.1	696.5	664.4	32.07	21.716			
7,100.0	6,771.0	7,100.4	6,773.7	16.6	16.8	-90.23	-287.3	401.1	696.5	663.7	32.83	21.214			
7,150.0	6,778.9	7,150.6	6,782.0	17.1	17.3	-90.25	-336.8	401.1	696.5	662.8	33.68	20.682			
7,167.0	6,780.9	7,167.7	6,784.0	17.2	17.4	-90.26	-353.7	401.1	696.5	662.5	33.99	20.495			
7,200.0	6,784.3	7,200.7	6,787.5	17.6	17.7	-90.26	-386.6	401.1	696.5	661.9	34.61	20.128			
7,241.0	6,788.6	7,241.7	6,791.8	18.0	18.2	-90.26	-427.4	401.1	696.5	661.1	35.42	19.662			
7,300.0	6,793.3	7,300.8	6,796.6	18.6	18.8	-90.28	-486.3	401.1	696.5	659.8	36.69	18.986			
7,365.4	6,794.9	7,366.4	6,798.5	19.4	19.5	-90.30	-551.9	401.1	696.5	658.3	38.19	18.239			
7,400.0	6,794.7	7,401.0	6,798.4	19.8	20.0	-90.30	-586.5	401.1	696.5	657.5	39.02	17.850			
7,500.0	6,794.4	7,501.0	6,798.0	21.1	21.2	-90.30	-686.5	401.1	696.5	654.9	41.57	16.754			
7,600.0	6,794.0	7,601.0	6,797.7	22.5	22.6	-90.31	-786.5	401.1	696.5	652.2	44.31	15.718			
7,700.0	6,793.6	7,701.0	6,797.4	23.9	24.0	-90.31	-886.5	401.1	696.5	649.3	47.21	14.755			
7,800.0	6,793.2	7,801.0	6,797.0	25.4	25.5	-90.32	-986.5	401.1	696.5	646.3	50.23	13.867			
7,900.0	6,792.8	7,901.0	6,796.7	27.0	27.1	-90.32	-1,086.5	401.1	696.5	643.2	53.35	13.055			
8,000.0	6,792.4	8,001.0	6,796.4	28.6	28.6	-90.32	-1,186.5	401.1	696.5	640.0	56.57	12.313			

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 28R-403
Project:	SEC.28-T5N-R64W	TVD Reference:	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	MD Reference:	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 28R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-13-14)	Offset TVD Reference:	Offset Datum

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28R-423 - Wellbore #1 - Plan #1 (2-13-14)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)					
8,100.0	6,792.1	8,101.0	6,796.1	30.2	30.3	-90.33	-1,286.5	401.1	696.5	636.7	59.86	11.636	
8,200.0	6,791.7	8,201.0	6,795.7	31.9	31.9	-90.33	-1,386.5	401.1	696.5	633.3	63.21	11.019	
8,300.0	6,791.3	8,301.0	6,795.4	33.6	33.6	-90.34	-1,486.5	401.1	696.5	629.9	66.61	10.456	
8,400.0	6,790.9	8,401.0	6,795.1	35.3	35.3	-90.34	-1,586.5	401.1	696.5	626.5	70.06	9.941	
8,500.0	6,790.5	8,501.0	6,794.7	37.0	37.1	-90.35	-1,686.5	401.1	696.5	623.0	73.55	9.470	
8,600.0	6,790.1	8,601.0	6,794.4	38.8	38.8	-90.35	-1,786.5	401.1	696.5	619.5	77.07	9.037	
8,700.0	6,789.8	8,701.0	6,794.1	40.5	40.6	-90.35	-1,886.4	401.1	696.5	615.9	80.62	8.639	
8,800.0	6,789.4	8,801.0	6,793.7	42.3	42.4	-90.36	-1,986.4	401.1	696.5	612.3	84.20	8.272	
8,900.0	6,789.0	8,901.0	6,793.4	44.1	44.1	-90.36	-2,086.4	401.1	696.5	608.7	87.80	7.933	
9,000.0	6,788.6	9,001.0	6,793.1	45.9	45.9	-90.37	-2,186.4	401.1	696.5	605.1	91.42	7.619	
9,100.0	6,788.2	9,101.0	6,792.7	47.7	47.7	-90.37	-2,286.4	401.1	696.5	601.5	95.05	7.328	
9,200.0	6,787.8	9,201.0	6,792.4	49.6	49.6	-90.38	-2,386.4	401.1	696.5	597.8	98.71	7.057	
9,300.0	6,787.5	9,301.0	6,792.1	51.4	51.4	-90.38	-2,486.4	401.1	696.5	594.2	102.37	6.804	
9,400.0	6,787.1	9,401.0	6,791.7	53.2	53.2	-90.38	-2,586.4	401.1	696.5	590.5	106.05	6.568	
9,500.0	6,786.7	9,501.0	6,791.4	55.1	55.1	-90.39	-2,686.4	401.1	696.5	586.8	109.74	6.347	
9,600.0	6,786.3	9,601.0	6,791.1	56.9	56.9	-90.39	-2,786.4	401.1	696.5	583.1	113.44	6.140	
9,700.0	6,785.9	9,701.0	6,790.7	58.8	58.8	-90.40	-2,886.4	401.1	696.5	579.4	117.15	5.946	
9,800.0	6,785.5	9,801.0	6,790.4	60.6	60.6	-90.40	-2,986.4	401.1	696.5	575.7	120.86	5.763	
9,900.0	6,785.1	9,901.0	6,790.1	62.5	62.5	-90.41	-3,086.4	401.1	696.5	571.9	124.59	5.591	
10,000.0	6,784.8	10,001.0	6,789.7	64.3	64.3	-90.41	-3,186.4	401.1	696.5	568.2	128.32	5.428	
10,100.0	6,784.4	10,101.0	6,789.4	66.2	66.2	-90.41	-3,286.4	401.1	696.5	564.5	132.06	5.275	
10,200.0	6,784.0	10,201.0	6,789.1	68.1	68.1	-90.42	-3,386.4	401.1	696.5	560.7	135.80	5.129	
10,300.0	6,783.6	10,301.0	6,788.8	69.9	69.9	-90.42	-3,486.4	401.1	696.5	557.0	139.55	4.991	
10,400.0	6,783.2	10,401.0	6,788.4	71.8	71.8	-90.43	-3,586.4	401.1	696.5	553.2	143.30	4.861	
10,500.0	6,782.8	10,501.0	6,788.1	73.7	73.7	-90.43	-3,686.4	401.1	696.5	549.5	147.06	4.736	
10,600.0	6,782.5	10,601.0	6,787.8	75.6	75.5	-90.44	-3,786.4	401.1	696.5	545.7	150.82	4.618	
10,700.0	6,782.1	10,701.0	6,787.4	77.4	77.4	-90.44	-3,886.4	401.1	696.5	542.0	154.59	4.506	
10,800.0	6,781.7	10,801.0	6,787.1	79.3	79.3	-90.44	-3,986.4	401.1	696.5	538.2	158.36	4.398	
10,900.0	6,781.3	10,901.0	6,786.8	81.2	81.2	-90.45	-4,086.4	401.1	696.5	534.4	162.13	4.296	
11,000.0	6,780.9	11,001.0	6,786.4	83.1	83.1	-90.45	-4,186.4	401.1	696.5	530.6	165.91	4.198	
11,100.0	6,780.5	11,101.0	6,786.1	85.0	85.0	-90.46	-4,286.4	401.1	696.5	526.9	169.69	4.105	
11,200.0	6,780.2	11,201.0	6,785.8	86.9	86.8	-90.46	-4,386.4	401.1	696.5	523.1	173.47	4.015	
11,300.0	6,779.8	11,301.0	6,785.4	88.8	88.7	-90.47	-4,486.4	401.1	696.5	519.3	177.26	3.930	
11,400.0	6,779.4	11,401.0	6,785.1	90.7	90.6	-90.47	-4,586.4	401.1	696.5	515.5	181.04	3.847	
11,500.0	6,779.0	11,501.0	6,784.8	92.6	92.5	-90.47	-4,686.4	401.1	696.5	511.7	184.83	3.769	
11,600.0	6,778.6	11,601.0	6,784.4	94.4	94.4	-90.48	-4,786.4	401.1	696.5	507.9	188.62	3.693	
11,700.0	6,778.2	11,701.0	6,784.1	96.3	96.3	-90.48	-4,886.4	401.1	696.5	504.1	192.42	3.620	
11,800.0	6,777.9	11,801.0	6,783.8	98.2	98.2	-90.49	-4,986.4	401.1	696.5	500.3	196.21	3.550	
11,900.0	6,777.5	11,901.0	6,783.4	100.1	100.1	-90.49	-5,086.4	401.1	696.6	496.5	200.01	3.483	
12,000.0	6,777.1	12,001.0	6,783.1	102.0	102.0	-90.50	-5,186.4	401.1	696.6	492.7	203.81	3.418	
12,100.0	6,776.7	12,101.0	6,782.8	103.9	103.9	-90.50	-5,286.4	401.1	696.6	488.9	207.61	3.355	
12,200.0	6,776.3	12,201.0	6,782.5	105.8	105.8	-90.50	-5,386.4	401.1	696.6	485.1	211.41	3.295	
12,300.0	6,775.9	12,301.0	6,782.1	107.7	107.7	-90.51	-5,486.4	401.1	696.6	481.3	215.21	3.237	
12,400.0	6,775.5	12,401.0	6,781.8	109.6	109.6	-90.51	-5,586.4	401.1	696.6	477.5	219.02	3.180	
12,500.0	6,775.2	12,501.0	6,781.5	111.5	111.5	-90.52	-5,686.4	401.1	696.6	473.7	222.82	3.126	
12,600.0	6,774.8	12,601.0	6,781.1	113.4	113.4	-90.52	-5,786.4	401.1	696.6	469.9	226.63	3.074	
12,700.0	6,774.4	12,701.0	6,780.8	115.3	115.3	-90.53	-5,886.4	401.1	696.6	466.1	230.44	3.023	
12,800.0	6,774.0	12,801.0	6,780.5	117.2	117.2	-90.53	-5,986.4	401.1	696.6	462.3	234.25	2.974	
12,900.0	6,773.6	12,901.0	6,780.1	119.1	119.1	-90.54	-6,086.4	401.1	696.6	458.5	238.06	2.926	
13,000.0	6,773.2	13,001.0	6,779.8	121.1	121.0	-90.54	-6,186.4	401.1	696.6	454.7	241.87	2.880	
13,100.0	6,772.9	13,101.0	6,779.5	123.0	122.9	-90.54	-6,286.4	401.1	696.6	450.9	245.68	2.835	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 28R-403
Project:	SEC.28-T5N-R64W	TVD Reference:	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	MD Reference:	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 28R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-13-14)	Offset TVD Reference:	Offset Datum

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28R-423 - Wellbore #1 - Plan #1 (2-13-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
13,200.0	6,772.5	13,201.0	6,779.1	124.9	124.8	-90.55	-6,386.4	401.1	696.6	447.1	249.49	2.792		
13,300.0	6,772.1	13,301.0	6,778.8	126.8	126.7	-90.55	-6,486.4	401.1	696.6	443.3	253.31	2.750		
13,400.0	6,771.7	13,401.0	6,778.5	128.7	128.6	-90.56	-6,586.4	401.1	696.6	439.4	257.12	2.709		
13,500.0	6,771.3	13,501.0	6,778.1	130.6	130.5	-90.56	-6,686.4	401.1	696.6	435.6	260.94	2.669		
13,600.0	6,770.9	13,601.0	6,777.8	132.5	132.4	-90.57	-6,786.4	401.1	696.6	431.8	264.75	2.631		
13,700.0	6,770.6	13,701.0	6,777.5	134.4	134.4	-90.57	-6,886.4	401.1	696.6	428.0	268.57	2.594		
13,800.0	6,770.2	13,801.0	6,777.1	136.3	136.3	-90.57	-6,986.4	401.1	696.6	424.2	272.39	2.557		
13,844.8	6,770.0	13,845.8	6,777.0	137.2	137.1	-90.58	-7,031.2	401.1	696.6	422.5	274.10	2.541 SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 28R-403
Project:	SEC.28-T5N-R64W	TVD Reference:	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	MD Reference:	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 28R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-13-14)	Offset TVD Reference:	Offset Datum

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28U-243 - Wellbore #1 - Plan #1 (2-13-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	92.34	-3.6	89.2	89.2					
100.0	100.0	100.0	100.0	0.1	0.1	92.34	-3.6	89.2	89.2	89.0	0.22	397.002		
200.0	200.0	200.0	200.0	0.3	0.3	92.34	-3.6	89.2	89.2	88.6	0.67	132.334		
300.0	300.0	300.0	300.0	0.6	0.6	92.34	-3.6	89.2	89.2	88.1	1.12	79.400		
400.0	400.0	400.0	400.0	0.8	0.8	92.34	-3.6	89.2	89.2	87.7	1.57	56.715		
500.0	500.0	500.0	500.0	1.0	1.0	92.34	-3.6	89.2	89.2	87.2	2.02	44.111		
600.0	600.0	600.0	600.0	1.2	1.2	92.34	-3.6	89.2	89.2	86.8	2.47	36.091		
700.0	700.0	700.0	700.0	1.5	1.5	92.34	-3.6	89.2	89.2	86.3	2.92	30.539		
800.0	800.0	800.0	800.0	1.7	1.7	92.34	-3.6	89.2	89.2	85.9	3.37	26.467		
900.0	900.0	900.0	900.0	1.9	1.9	92.34	-3.6	89.2	89.2	85.4	3.82	23.353		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	92.34	-3.6	89.2	89.2	85.0	4.27	20.895 CC, ES		
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	134.95	-3.6	89.2	90.5	85.7	4.72	19.183		
1,200.0	1,199.8	1,199.8	1,199.8	2.6	2.6	137.15	-3.6	89.2	94.2	89.1	5.16	18.275		
1,300.0	1,299.5	1,297.1	1,297.1	2.8	2.8	139.66	-2.6	90.4	101.9	96.4	5.59	18.247		
1,345.6	1,344.7	1,341.2	1,341.2	2.9	2.9	140.60	-1.5	91.9	107.2	101.4	5.78	18.531		
1,400.0	1,398.8	1,393.8	1,393.7	3.1	3.0	141.48	0.5	94.3	114.4	108.4	6.02	18.993		
1,500.0	1,498.0	1,490.0	1,489.5	3.3	3.2	141.97	5.6	100.6	129.4	122.9	6.47	19.995		
1,600.0	1,597.3	1,585.5	1,584.4	3.6	3.5	141.40	12.6	109.3	146.5	139.6	6.93	21.142		
1,700.0	1,696.6	1,681.5	1,679.2	3.9	3.7	140.15	21.5	120.4	165.7	158.3	7.41	22.371		
1,800.0	1,795.9	1,779.4	1,776.0	4.1	4.0	138.99	31.1	132.2	185.4	177.5	7.90	23.476		
1,900.0	1,895.1	1,877.4	1,872.8	4.4	4.3	138.06	40.6	144.1	205.2	196.8	8.40	24.431		
2,000.0	1,994.4	1,975.4	1,969.6	4.7	4.6	137.28	50.1	155.9	225.0	216.1	8.91	25.259		
2,100.0	2,093.7	2,073.4	2,066.4	5.0	4.9	136.64	59.6	167.7	244.8	235.4	9.42	25.977		
2,200.0	2,193.0	2,171.3	2,163.2	5.3	5.2	136.09	69.2	179.6	264.7	254.7	9.95	26.612		
2,300.0	2,292.2	2,269.3	2,260.0	5.6	5.5	135.61	78.7	191.4	284.6	274.1	10.47	27.170		
2,400.0	2,391.5	2,367.3	2,356.8	5.9	5.8	135.20	88.2	203.2	304.5	293.5	11.01	27.666		
2,500.0	2,490.8	2,465.3	2,453.6	6.2	6.1	134.84	97.7	215.0	324.4	312.9	11.54	28.108		
2,600.0	2,590.0	2,563.3	2,550.4	6.5	6.5	134.52	107.3	226.9	344.3	332.3	12.08	28.504		
2,700.0	2,689.3	2,661.2	2,647.2	6.8	6.8	134.24	116.8	238.7	364.3	351.7	12.62	28.861		
2,800.0	2,788.6	2,759.2	2,744.0	7.1	7.1	133.98	126.3	250.5	384.2	371.1	13.17	29.183		
2,900.0	2,887.9	2,857.2	2,840.8	7.4	7.5	133.75	135.8	262.3	404.2	390.5	13.71	29.476		
3,000.0	2,987.1	2,955.2	2,937.5	7.7	7.8	133.55	145.4	274.2	424.1	409.9	14.26	29.743		
3,100.0	3,086.4	3,053.1	3,034.3	8.0	8.2	133.36	154.9	286.0	444.1	429.3	14.81	29.987		
3,200.0	3,185.7	3,151.1	3,131.1	8.4	8.5	133.18	164.4	297.8	464.1	448.7	15.36	30.211		
3,300.0	3,285.0	3,249.1	3,227.9	8.7	8.8	133.03	173.9	309.6	484.0	468.1	15.91	30.417		
3,400.0	3,384.2	3,347.1	3,324.7	9.0	9.2	132.88	183.5	321.5	504.0	487.5	16.47	30.608		
3,500.0	3,483.5	3,445.0	3,421.5	9.3	9.5	132.75	193.0	333.3	524.0	507.0	17.02	30.784		
3,600.0	3,582.8	3,543.0	3,518.3	9.6	9.9	132.62	202.5	345.1	544.0	526.4	17.58	30.947		
3,700.0	3,682.1	3,641.0	3,615.1	9.9	10.2	132.50	212.0	356.9	564.0	545.8	18.13	31.099		
3,800.0	3,781.3	3,739.0	3,711.9	10.2	10.6	132.40	221.6	368.8	583.9	565.3	18.69	31.241		
3,900.0	3,880.6	3,837.0	3,808.7	10.5	10.9	132.29	231.1	380.6	603.9	584.7	19.25	31.373		
4,000.0	3,979.9	3,934.9	3,905.5	10.8	11.3	132.20	240.6	392.4	623.9	604.1	19.81	31.497		
4,100.0	4,079.1	4,032.9	4,002.3	11.2	11.6	132.11	250.1	404.2	643.9	623.5	20.37	31.613		
4,200.0	4,178.4	4,130.9	4,099.1	11.5	12.0	132.03	259.7	416.1	663.9	643.0	20.93	31.722		
4,300.0	4,277.7	4,228.9	4,195.9	11.8	12.3	131.95	269.2	427.9	683.9	662.4	21.49	31.825		
4,400.0	4,377.0	4,326.8	4,292.6	12.1	12.7	131.88	278.7	439.7	703.9	681.8	22.05	31.922		
4,500.0	4,476.2	4,424.8	4,389.4	12.4	13.0	131.81	288.3	451.5	723.9	701.3	22.61	32.013		
4,600.0	4,575.5	4,522.8	4,486.2	12.7	13.4	131.74	297.8	463.4	743.9	720.7	23.17	32.100		
4,680.4	4,655.3	4,603.6	4,566.1	13.0	13.7	131.69	305.6	473.1	759.9	736.3	23.63	32.163		
4,700.0	4,674.8	4,627.9	4,590.1	13.0	13.7	131.73	307.9	475.9	763.7	740.0	23.74	32.167		
4,800.0	4,774.3	4,752.7	4,714.0	13.3	14.0	131.93	317.4	487.7	779.5	755.3	24.27	32.122		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 28R-403
Project:	SEC.28-T5N-R64W	TVD Reference:	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	MD Reference:	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 28R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-13-14)	Offset TVD Reference:	Offset Datum

Offset Design		Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28U-243 - Wellbore #1 - Plan #1 (2-13-14)											Offset Site Error:		0.0 ft
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor			
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
4,900.0	4,874.1	4,879.0	4,839.9	13.4	14.3	132.04	323.5	495.4	789.7	764.9	24.74	31.922			
5,000.0	4,974.1	5,006.2	4,967.0	13.6	14.5	132.09	326.2	498.7	794.1	768.9	25.15	31.579			
5,025.9	5,000.0	5,039.2	5,000.0	13.6	14.6	90.26	326.4	498.9	794.3	769.0	25.24	31.467			
5,100.0	5,074.1	5,113.3	5,074.1	13.8	14.7	90.26	326.4	498.9	794.3	768.8	25.50	31.151			
5,200.0	5,174.1	5,213.3	5,174.1	13.9	14.9	90.26	326.4	498.9	794.3	768.4	25.87	30.700			
5,300.0	5,274.1	5,313.3	5,274.1	14.1	15.0	90.26	326.4	498.9	794.3	768.0	26.25	30.259			
5,400.0	5,374.1	5,413.3	5,374.1	14.3	15.2	90.26	326.4	498.9	794.3	767.6	26.63	29.829			
5,500.0	5,474.1	5,513.3	5,474.1	14.5	15.4	90.26	326.4	498.9	794.3	767.3	27.01	29.408			
5,600.0	5,574.1	5,613.3	5,574.1	14.7	15.5	90.26	326.4	498.9	794.3	766.9	27.39	28.996			
5,700.0	5,674.1	5,713.3	5,674.1	14.9	15.7	90.26	326.4	498.9	794.3	766.5	27.78	28.594			
5,800.0	5,774.1	5,813.3	5,774.1	15.0	15.9	90.26	326.4	498.9	794.3	766.1	28.16	28.201			
5,900.0	5,874.1	5,913.3	5,874.1	15.2	16.0	90.26	326.4	498.9	794.3	765.7	28.55	27.817			
5,943.3	5,917.4	5,956.7	5,917.4	15.3	16.1	90.26	326.4	498.9	794.3	765.5	28.72	27.653			
6,000.0	5,974.1	6,013.0	5,973.8	15.4	16.2	90.37	324.9	498.9	794.3	765.4	28.92	27.461			
6,047.0	6,021.1	6,059.4	6,019.9	15.5	16.2	90.68	320.5	498.9	794.3	765.2	29.07	27.327			
6,050.0	6,024.1	6,062.3	6,022.8	15.5	16.2	-89.29	320.2	498.9	794.3	765.2	29.07	27.320			
6,100.0	6,074.1	6,111.1	6,071.0	15.6	16.3	-88.85	312.4	498.9	794.4	765.2	29.18	27.227			
6,150.0	6,123.8	6,159.5	6,118.2	15.6	16.3	-88.42	301.7	498.9	794.6	765.3	29.24	27.173			
6,200.0	6,173.1	6,207.6	6,164.4	15.6	16.3	-88.00	288.2	498.9	794.7	765.5	29.27	27.154			
6,250.0	6,221.7	6,255.4	6,209.2	15.7	16.3	-87.59	271.9	498.9	795.0	765.7	29.27	27.164			
6,300.0	6,269.5	6,302.8	6,252.7	15.7	16.3	-87.18	252.9	498.9	795.2	766.0	29.24	27.200			
6,350.0	6,316.2	6,350.0	6,294.7	15.6	16.2	-86.79	231.4	498.9	795.5	766.3	29.19	27.252			
6,400.0	6,361.7	6,396.7	6,334.9	15.6	16.2	-86.42	207.7	498.9	795.8	766.7	29.14	27.315			
6,450.0	6,405.7	6,443.2	6,373.4	15.6	16.2	-86.06	181.6	498.9	796.2	767.1	29.08	27.379			
6,500.0	6,448.0	6,489.5	6,410.1	15.6	16.1	-85.71	153.3	498.9	796.5	767.5	29.03	27.435			
6,550.0	6,488.5	6,535.6	6,444.8	15.5	16.1	-85.39	123.1	498.9	796.9	767.9	29.01	27.472			
6,600.0	6,527.1	6,581.4	6,477.5	15.5	16.0	-85.08	91.0	498.9	797.2	768.2	29.01	27.481			
6,650.0	6,563.4	6,627.0	6,508.1	15.5	16.0	-84.79	57.1	498.9	797.6	768.5	29.05	27.451			
6,700.0	6,597.4	6,672.5	6,536.4	15.4	16.0	-84.52	21.6	498.9	797.9	768.8	29.15	27.374			
6,750.0	6,629.0	6,717.7	6,562.5	15.4	16.0	-84.28	-15.3	498.9	798.3	768.9	29.30	27.241			
6,800.0	6,658.0	6,762.8	6,586.4	15.4	16.0	-84.06	-53.6	498.9	798.6	769.0	29.53	27.045			
6,850.0	6,684.2	6,807.8	6,607.8	15.4	16.0	-83.86	-93.1	498.9	798.9	769.0	29.83	26.783			
6,900.0	6,707.6	6,852.6	6,626.8	15.4	16.1	-83.68	-133.7	498.9	799.1	768.9	30.21	26.455			
6,950.0	6,728.0	6,900.0	6,644.3	15.6	16.3	-83.52	-177.8	498.9	799.4	768.7	30.69	26.048			
7,000.0	6,745.5	6,942.0	6,657.5	15.9	16.5	-83.41	-217.7	498.9	799.6	768.3	31.23	25.601			
7,050.0	6,759.8	6,986.6	6,669.1	16.2	16.7	-83.31	-260.7	498.9	799.7	767.8	31.87	25.090			
7,100.0	6,771.0	7,031.1	6,678.1	16.6	17.1	-83.23	-304.3	498.9	799.8	767.2	32.60	24.535			
7,150.0	6,778.9	7,075.6	6,684.6	17.1	17.4	-83.18	-348.3	498.9	799.9	766.5	33.41	23.946			
7,167.0	6,780.9	7,090.7	6,686.2	17.2	17.6	-83.17	-363.3	498.9	799.9	766.2	33.69	23.741			
7,200.0	6,784.3	7,120.1	6,688.5	17.6	17.8	-83.12	-392.5	498.9	800.0	765.8	34.28	23.339			
7,241.0	6,788.6	7,156.4	6,689.8	18.0	18.2	-82.94	-428.8	498.9	800.4	765.3	35.03	22.846			
7,300.0	6,793.3	7,214.0	6,689.9	18.6	18.8	-82.59	-486.5	498.9	801.0	764.7	36.26	22.087			
7,365.4	6,794.9	7,279.4	6,689.9	19.4	19.6	-82.47	-551.9	498.9	801.2	763.4	37.76	21.219			
7,400.0	6,794.7	7,314.0	6,689.9	19.8	20.0	-82.48	-586.5	498.9	801.2	762.6	38.58	20.765			
7,500.0	6,794.4	7,414.0	6,689.9	21.1	21.2	-82.51	-686.5	498.9	801.1	760.0	41.12	19.480			
7,600.0	6,794.0	7,514.0	6,689.9	22.5	22.6	-82.54	-786.5	498.9	801.0	757.2	43.85	18.267			
7,700.0	6,793.6	7,614.0	6,689.9	23.9	24.0	-82.56	-886.5	498.9	801.0	754.3	46.73	17.140			
7,800.0	6,793.2	7,714.0	6,689.9	25.4	25.5	-82.59	-986.5	498.9	800.9	751.2	49.74	16.102			
7,900.0	6,792.8	7,814.0	6,690.0	27.0	27.0	-82.62	-1,086.5	498.9	800.9	748.0	52.85	15.153			
8,000.0	6,792.4	7,914.0	6,690.0	28.6	28.6	-82.65	-1,186.5	498.9	800.8	744.8	56.05	14.287			
8,100.0	6,792.1	8,014.0	6,690.0	30.2	30.2	-82.68	-1,286.5	498.9	800.8	741.5	59.33	13.498			

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 28R-403
Project:	SEC.28-T5N-R64W	TVD Reference:	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	MD Reference:	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 28R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-13-14)	Offset TVD Reference:	Offset Datum

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28U-243 - Wellbore #1 - Plan #1 (2-13-14)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,200.0	6,791.7	8,114.0	6,690.0	31.9	31.9	-82.71	-1,386.5	498.9	800.7	738.1	62.66	12.779	
8,300.0	6,791.3	8,214.0	6,690.0	33.6	33.6	-82.73	-1,486.5	498.9	800.7	734.6	66.05	12.123	
8,400.0	6,790.9	8,314.0	6,690.1	35.3	35.3	-82.76	-1,586.5	498.9	800.6	731.2	69.48	11.523	
8,500.0	6,790.5	8,414.0	6,690.1	37.0	37.0	-82.79	-1,686.5	498.9	800.6	727.6	72.95	10.974	
8,600.0	6,790.1	8,514.0	6,690.1	38.8	38.8	-82.82	-1,786.5	498.9	800.5	724.1	76.46	10.470	
8,700.0	6,789.8	8,614.0	6,690.1	40.5	40.5	-82.85	-1,886.5	498.9	800.5	720.5	79.99	10.007	
8,800.0	6,789.4	8,714.0	6,690.1	42.3	42.3	-82.88	-1,986.5	498.9	800.4	716.9	83.55	9.580	
8,900.0	6,789.0	8,814.0	6,690.1	44.1	44.1	-82.91	-2,086.5	498.9	800.4	713.3	87.14	9.186	
9,000.0	6,788.6	8,914.0	6,690.2	45.9	45.9	-82.93	-2,186.5	498.9	800.3	709.6	90.74	8.820	
9,100.0	6,788.2	9,014.0	6,690.2	47.7	47.7	-82.96	-2,286.5	498.9	800.3	705.9	94.36	8.481	
9,200.0	6,787.8	9,114.0	6,690.2	49.6	49.5	-82.99	-2,386.5	498.9	800.2	702.2	97.99	8.166	
9,300.0	6,787.5	9,214.0	6,690.2	51.4	51.3	-83.02	-2,486.4	498.9	800.2	698.5	101.64	7.873	
9,400.0	6,787.1	9,314.0	6,690.2	53.2	53.2	-83.05	-2,586.4	498.9	800.1	694.8	105.30	7.598	
9,500.0	6,786.7	9,414.0	6,690.2	55.1	55.0	-83.08	-2,686.4	498.9	800.1	691.1	108.98	7.342	
9,600.0	6,786.3	9,514.0	6,690.3	56.9	56.8	-83.11	-2,786.4	498.9	800.0	687.4	112.66	7.101	
9,700.0	6,785.9	9,614.0	6,690.3	58.8	58.7	-83.13	-2,886.4	498.9	800.0	683.6	116.36	6.875	
9,800.0	6,785.5	9,714.0	6,690.3	60.6	60.5	-83.16	-2,986.4	498.9	800.0	679.9	120.06	6.663	
9,900.0	6,785.1	9,814.0	6,690.3	62.5	62.4	-83.19	-3,086.4	498.9	799.9	676.1	123.77	6.463	
10,000.0	6,784.8	9,914.0	6,690.3	64.3	64.3	-83.22	-3,186.4	498.9	799.9	672.4	127.48	6.274	
10,100.0	6,784.4	10,014.0	6,690.3	66.2	66.1	-83.25	-3,286.4	498.9	799.8	668.6	131.21	6.096	
10,200.0	6,784.0	10,114.0	6,690.4	68.1	68.0	-83.28	-3,386.4	498.9	799.8	664.8	134.94	5.927	
10,300.0	6,783.6	10,214.0	6,690.4	69.9	69.9	-83.31	-3,486.4	498.9	799.7	661.0	138.67	5.767	
10,400.0	6,783.2	10,314.0	6,690.4	71.8	71.7	-83.33	-3,586.4	498.9	799.7	657.3	142.41	5.615	
10,500.0	6,782.8	10,414.0	6,690.4	73.7	73.6	-83.36	-3,686.4	498.9	799.6	653.5	146.16	5.471	
10,600.0	6,782.5	10,514.0	6,690.4	75.6	75.5	-83.39	-3,786.4	498.9	799.6	649.7	149.90	5.334	
10,700.0	6,782.1	10,614.0	6,690.5	77.4	77.4	-83.42	-3,886.4	498.9	799.5	645.9	153.66	5.203	
10,800.0	6,781.7	10,714.0	6,690.5	79.3	79.2	-83.45	-3,986.4	498.9	799.5	642.1	157.42	5.079	
10,900.0	6,781.3	10,814.0	6,690.5	81.2	81.1	-83.48	-4,086.4	498.8	799.4	638.3	161.18	4.960	
11,000.0	6,780.9	10,914.0	6,690.5	83.1	83.0	-83.51	-4,186.4	498.8	799.4	634.5	164.94	4.847	
11,100.0	6,780.5	11,014.0	6,690.5	85.0	84.9	-83.53	-4,286.4	498.8	799.3	630.6	168.71	4.738	
11,200.0	6,780.2	11,114.0	6,690.5	86.9	86.8	-83.56	-4,386.4	498.8	799.3	626.8	172.48	4.634	
11,300.0	6,779.8	11,214.0	6,690.6	88.8	88.7	-83.59	-4,486.4	498.8	799.3	623.0	176.25	4.535	
11,400.0	6,779.4	11,314.0	6,690.6	90.7	90.6	-83.62	-4,586.4	498.8	799.2	619.2	180.03	4.439	
11,500.0	6,779.0	11,414.0	6,690.6	92.6	92.5	-83.65	-4,686.4	498.8	799.2	615.4	183.81	4.348	
11,600.0	6,778.6	11,514.0	6,690.6	94.4	94.3	-83.68	-4,786.4	498.8	799.1	611.5	187.59	4.260	
11,700.0	6,778.2	11,614.0	6,690.6	96.3	96.2	-83.71	-4,886.4	498.8	799.1	607.7	191.37	4.176	
11,800.0	6,777.9	11,714.0	6,690.6	98.2	98.1	-83.73	-4,986.4	498.8	799.0	603.9	195.16	4.094	
11,900.0	6,777.5	11,814.0	6,690.7	100.1	100.0	-83.76	-5,086.4	498.8	799.0	600.0	198.95	4.016	
12,000.0	6,777.1	11,914.0	6,690.7	102.0	101.9	-83.79	-5,186.4	498.8	798.9	596.2	202.73	3.941	
12,100.0	6,776.7	12,014.0	6,690.7	103.9	103.8	-83.82	-5,286.4	498.8	798.9	592.4	206.53	3.868	
12,200.0	6,776.3	12,114.0	6,690.7	105.8	105.7	-83.85	-5,386.4	498.8	798.9	588.5	210.32	3.798	
12,300.0	6,775.9	12,214.0	6,690.7	107.7	107.6	-83.88	-5,486.4	498.8	798.8	584.7	214.11	3.731	
12,400.0	6,775.5	12,314.0	6,690.7	109.6	109.5	-83.91	-5,586.4	498.8	798.8	580.9	217.91	3.666	
12,500.0	6,775.2	12,414.0	6,690.8	111.5	111.4	-83.93	-5,686.4	498.8	798.7	577.0	221.71	3.603	
12,600.0	6,774.8	12,514.0	6,690.8	113.4	113.3	-83.96	-5,786.4	498.8	798.7	573.2	225.51	3.542	
12,700.0	6,774.4	12,614.0	6,690.8	115.3	115.2	-83.99	-5,886.4	498.8	798.7	569.3	229.31	3.483	
12,800.0	6,774.0	12,714.0	6,690.8	117.2	117.1	-84.02	-5,986.4	498.8	798.6	565.5	233.11	3.426	
12,900.0	6,773.6	12,814.0	6,690.8	119.1	119.0	-84.05	-6,086.4	498.8	798.6	561.7	236.92	3.371	
13,000.0	6,773.2	12,913.9	6,690.9	121.1	120.9	-84.08	-6,186.4	498.8	798.5	557.8	240.72	3.317	
13,100.0	6,772.9	13,013.9	6,690.9	123.0	122.8	-84.11	-6,286.4	498.8	798.5	554.0	244.53	3.265	
13,200.0	6,772.5	13,113.9	6,690.9	124.9	124.7	-84.14	-6,386.4	498.8	798.4	550.1	248.33	3.215	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 28R-403
Project:	SEC.28-T5N-R64W	TVD Reference:	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	MD Reference:	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 28R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-13-14)	Offset TVD Reference:	Offset Datum

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28U-243 - Wellbore #1 - Plan #1 (2-13-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
13,300.0	6,772.1	13,213.9	6,690.9	126.8	126.7	-84.16	-6,486.4	498.8	798.4	546.3	252.14	3.166		
13,400.0	6,771.7	13,313.9	6,690.9	128.7	128.6	-84.19	-6,586.4	498.8	798.4	542.4	255.95	3.119		
13,500.0	6,771.3	13,413.9	6,690.9	130.6	130.5	-84.22	-6,686.4	498.8	798.3	538.6	259.76	3.073		
13,600.0	6,770.9	13,513.9	6,691.0	132.5	132.4	-84.25	-6,786.4	498.8	798.3	534.7	263.57	3.029		
13,700.0	6,770.6	13,613.9	6,691.0	134.4	134.3	-84.28	-6,886.4	498.8	798.2	530.9	267.39	2.985		
13,800.0	6,770.2	13,713.9	6,691.0	136.3	136.2	-84.31	-6,986.4	498.8	798.2	527.0	271.20	2.943		
13,835.6	6,770.0	13,749.5	6,691.0	137.0	136.9	-84.32	-7,022.0	498.8	798.2	525.6	272.56	2.929		
13,844.8	6,770.0	13,755.1	6,691.0	137.2	137.0	-84.32	-7,027.5	498.8	798.2	525.4	272.84	2.926 SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 28R-403
Project:	SEC.28-T5N-R64W	TVD Reference:	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	MD Reference:	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 28R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-13-14)	Offset TVD Reference:	Offset Datum

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28U-403 - Wellbore #1 - Plan #1 (2-13-14)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	91.74	-3.6	119.8	119.9				
100.0	100.0	99.0	99.0	0.1	0.1	91.74	-3.6	119.8	119.9	119.6	0.22	535.947	
200.0	200.0	199.0	199.0	0.3	0.3	91.74	-3.6	119.8	119.9	119.2	0.67	178.352	
300.0	300.0	299.0	299.0	0.6	0.6	91.74	-3.6	119.8	119.9	118.7	1.12	106.868	
400.0	400.0	399.0	399.0	0.8	0.8	91.74	-3.6	119.8	119.9	118.3	1.57	76.291	
500.0	500.0	499.0	499.0	1.0	1.0	91.74	-3.6	119.8	119.9	117.8	2.02	59.318	
600.0	600.0	599.0	599.0	1.2	1.2	91.74	-3.6	119.8	119.9	117.4	2.47	48.523	
700.0	700.0	699.0	699.0	1.5	1.5	91.74	-3.6	119.8	119.9	116.9	2.92	41.053	
800.0	800.0	799.0	799.0	1.7	1.7	91.74	-3.6	119.8	119.9	116.5	3.37	35.575	
900.0	900.0	899.0	899.0	1.9	1.9	91.74	-3.6	119.8	119.9	116.0	3.82	31.387	
1,000.0	1,000.0	999.0	999.0	2.1	2.1	91.74	-3.6	119.8	119.9	115.6	4.27	28.082 CC, ES	
1,100.0	1,100.0	1,095.4	1,095.4	2.4	2.3	133.75	-2.9	121.2	122.5	117.8	4.70	26.072	
1,200.0	1,199.8	1,191.4	1,191.3	2.6	2.6	134.20	-0.7	125.5	130.5	125.4	5.12	25.471 SF	
1,300.0	1,299.5	1,286.6	1,286.1	2.8	2.8	134.83	2.9	132.5	143.8	138.3	5.55	25.897	
1,345.6	1,344.7	1,329.5	1,328.8	2.9	2.9	135.14	5.0	136.7	151.6	145.9	5.75	26.360	
1,400.0	1,398.8	1,380.6	1,379.4	3.1	3.0	135.53	7.9	142.3	162.0	156.1	5.99	27.032	
1,500.0	1,498.0	1,474.1	1,471.9	3.3	3.2	135.75	14.2	154.6	183.3	176.8	6.45	28.405	
1,600.0	1,597.3	1,571.6	1,568.1	3.6	3.5	135.74	21.4	168.6	205.5	198.6	6.92	29.689	
1,700.0	1,696.6	1,669.0	1,664.3	3.9	3.8	135.73	28.5	182.5	227.8	220.4	7.40	30.773	
1,800.0	1,795.9	1,766.5	1,760.6	4.1	4.1	135.72	35.7	196.5	250.1	242.2	7.89	31.688	
1,900.0	1,895.1	1,864.0	1,856.8	4.4	4.4	135.72	42.8	210.5	272.4	264.0	8.39	32.463	
2,000.0	1,994.4	1,961.5	1,953.0	4.7	4.8	135.71	50.0	224.4	294.6	285.7	8.89	33.129	
2,100.0	2,093.7	2,059.0	2,049.2	5.0	5.1	135.71	57.1	238.4	316.9	307.5	9.40	33.705	
2,200.0	2,193.0	2,156.5	2,145.4	5.3	5.4	135.70	64.3	252.4	339.2	329.3	9.92	34.205	
2,300.0	2,292.2	2,254.0	2,241.6	5.6	5.8	135.70	71.5	266.3	361.5	351.0	10.43	34.642	
2,400.0	2,391.5	2,351.5	2,337.9	5.9	6.1	135.70	78.6	280.3	383.7	372.8	10.96	35.027	
2,500.0	2,490.8	2,448.9	2,434.1	6.2	6.5	135.70	85.8	294.3	406.0	394.5	11.48	35.369	
2,600.0	2,590.0	2,546.4	2,530.3	6.5	6.8	135.69	92.9	308.2	428.3	416.3	12.01	35.672	
2,700.0	2,689.3	2,643.9	2,626.5	6.8	7.2	135.69	100.1	322.2	450.6	438.0	12.53	35.944	
2,800.0	2,788.6	2,741.4	2,722.7	7.1	7.5	135.69	107.3	336.2	472.8	459.8	13.07	36.188	
2,900.0	2,887.9	2,838.9	2,818.9	7.4	7.9	135.69	114.4	350.1	495.1	481.5	13.60	36.409	
3,000.0	2,987.1	2,936.4	2,915.2	7.7	8.2	135.69	121.6	364.1	517.4	503.2	14.13	36.609	
3,100.0	3,086.4	3,033.9	3,011.4	8.0	8.6	135.68	128.7	378.0	539.7	525.0	14.67	36.791	
3,200.0	3,185.7	3,131.4	3,107.6	8.4	8.9	135.68	135.9	392.0	561.9	546.7	15.21	36.957	
3,300.0	3,285.0	3,228.8	3,203.8	8.7	9.3	135.68	143.0	406.0	584.2	568.5	15.74	37.109	
3,400.0	3,384.2	3,326.3	3,300.0	9.0	9.6	135.68	150.2	419.9	606.5	590.2	16.28	37.248	
3,500.0	3,483.5	3,423.8	3,396.2	9.3	10.0	135.68	157.4	433.9	628.8	611.9	16.82	37.377	
3,600.0	3,582.8	3,521.3	3,492.5	9.6	10.4	135.68	164.5	447.9	651.0	633.7	17.36	37.496	
3,700.0	3,682.1	3,618.8	3,588.7	9.9	10.7	135.68	171.7	461.8	673.3	655.4	17.90	37.606	
3,800.0	3,781.3	3,716.3	3,684.9	10.2	11.1	135.68	178.8	475.8	695.6	677.1	18.45	37.708	
3,900.0	3,880.6	3,813.8	3,781.1	10.5	11.4	135.68	186.0	489.8	717.9	698.9	18.99	37.804	
4,000.0	3,979.9	3,911.3	3,877.3	10.8	11.8	135.68	193.1	503.7	740.1	720.6	19.53	37.892	
4,100.0	4,079.1	4,008.7	3,973.5	11.2	12.2	135.68	200.3	517.7	762.4	742.3	20.08	37.975	
4,200.0	4,178.4	4,106.2	4,069.8	11.5	12.5	135.68	207.5	531.7	784.7	764.1	20.62	38.053	
4,300.0	4,277.7	4,203.7	4,166.0	11.8	12.9	135.67	214.6	545.6	807.0	785.8	21.17	38.125	
4,400.0	4,377.0	4,301.2	4,262.2	12.1	13.3	135.67	221.8	559.6	829.2	807.5	21.71	38.193	
4,500.0	4,476.2	4,398.7	4,358.4	12.4	13.6	135.67	228.9	573.5	851.5	829.2	22.26	38.258	
4,600.0	4,575.5	4,496.2	4,454.6	12.7	14.0	135.67	236.1	587.5	873.8	851.0	22.80	38.318	
4,680.4	4,655.3	4,574.5	4,531.9	13.0	14.3	135.67	241.8	598.7	891.7	868.4	23.24	38.364	
4,700.0	4,674.8	4,593.7	4,550.8	13.0	14.3	135.73	243.3	601.5	896.0	872.7	23.36	38.363	
4,800.0	4,774.3	4,691.5	4,647.4	13.3	14.7	135.92	250.4	615.5	916.6	892.7	23.89	38.370	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 28R-403
Project:	SEC.28-T5N-R64W	TVD Reference:	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	MD Reference:	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 28R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-13-14)	Offset TVD Reference:	Offset Datum

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28U-403 - Wellbore #1 - Plan #1 (2-13-14)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference	Offset	Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,900.0	4,874.1	4,789.8	4,744.4	13.4	15.1	135.92	257.7	629.6	934.7	910.3	24.39	38.328	
5,000.0	4,974.1	4,888.3	4,841.6	13.6	15.4	135.74	264.9	643.7	950.4	925.5	24.85	38.242	
5,025.9	5,000.0	4,913.9	4,866.9	13.6	15.5	93.84	266.8	647.3	954.1	929.1	24.97	38.214	
5,100.0	5,074.1	4,987.0	4,939.1	13.8	15.8	93.47	272.1	657.8	964.3	939.0	25.29	38.126	
5,200.0	5,174.1	5,085.7	5,036.5	13.9	16.2	93.00	279.4	672.0	978.3	952.5	25.75	37.992	
5,300.0	5,274.1	5,184.4	5,133.9	14.1	16.5	92.53	286.6	686.1	992.3	966.1	26.21	37.865	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 28R-403
Project:	SEC.28-T5N-R64W	TVD Reference:	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	MD Reference:	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 28R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-13-14)	Offset TVD Reference:	Offset Datum

Offset Design		Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - Hall 28-2 (Exist) - Wellbore #1 - Wellbore #1											Offset Site Error:	0.0 ft
Survey Program: 7600-UNKNOWN													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	0.0	0.0	0.0	0.0	134.44	-273.2	278.6	390.7					
100.0	100.0	80.0	80.0	0.1	1.6	134.44	-273.2	278.6	390.2	388.5	1.71	227.864		
200.0	200.0	180.0	180.0	0.3	3.6	134.44	-273.2	278.6	390.2	386.3	3.94	99.111		
300.0	300.0	280.0	280.0	0.6	5.6	134.44	-273.2	278.6	390.2	384.1	6.16	63.328		
400.0	400.0	380.0	380.0	0.8	7.6	134.44	-273.2	278.6	390.2	381.8	8.39	46.529		
500.0	500.0	480.0	480.0	1.0	9.6	134.44	-273.2	278.6	390.2	379.6	10.61	36.774		
600.0	600.0	580.0	580.0	1.2	11.6	134.44	-273.2	278.6	390.2	377.4	12.84	30.401		
700.0	700.0	680.0	680.0	1.5	13.6	134.44	-273.2	278.6	390.2	375.2	15.06	25.910		
800.0	800.0	780.0	780.0	1.7	15.6	134.44	-273.2	278.6	390.2	372.9	17.29	22.575		
900.0	900.0	880.0	880.0	1.9	17.6	134.44	-273.2	278.6	390.2	370.7	19.51	20.001		
1,000.0	1,000.0	980.0	980.0	2.1	19.6	134.44	-273.2	278.6	390.2	368.5	21.74	17.954 CC		
1,100.0	1,100.0	1,080.0	1,080.0	2.4	21.6	176.29	-273.2	278.6	392.0	368.0	23.94	16.372 ES		
1,200.0	1,199.8	1,179.8	1,179.8	2.6	23.6	176.33	-273.2	278.6	397.2	371.1	26.11	15.212		
1,300.0	1,299.5	1,279.5	1,279.5	2.8	25.6	176.40	-273.2	278.6	405.9	377.7	28.24	14.376		
1,345.6	1,344.7	1,324.7	1,324.7	2.9	26.5	176.44	-273.2	278.6	411.0	381.8	29.19	14.083		
1,400.0	1,398.8	1,378.8	1,378.8	3.1	27.6	176.49	-273.2	278.6	417.5	387.2	30.38	13.744		
1,500.0	1,498.0	1,478.0	1,478.0	3.3	29.6	176.59	-273.2	278.6	429.6	397.0	32.58	13.186		
1,600.0	1,597.3	1,577.3	1,577.3	3.6	31.5	176.68	-273.2	278.6	441.6	406.8	34.77	12.698		
1,700.0	1,696.6	1,676.6	1,676.6	3.9	33.5	176.77	-273.2	278.6	453.6	416.6	36.97	12.267		
1,800.0	1,795.9	1,775.9	1,775.9	4.1	35.5	176.85	-273.2	278.6	465.6	426.4	39.18	11.885		
1,900.0	1,895.1	1,875.1	1,875.1	4.4	37.5	176.93	-273.2	278.6	477.6	436.2	41.38	11.543		
2,000.0	1,994.4	1,974.4	1,974.4	4.7	39.5	177.01	-273.2	278.6	489.6	446.0	43.58	11.235		
2,100.0	2,093.7	2,073.7	2,073.7	5.0	41.5	177.08	-273.2	278.6	501.6	455.9	45.79	10.956		
2,200.0	2,193.0	2,173.0	2,173.0	5.3	43.5	177.15	-273.2	278.6	513.7	465.7	47.99	10.703		
2,300.0	2,292.2	2,272.2	2,272.2	5.6	45.4	177.21	-273.2	278.6	525.7	475.5	50.20	10.472		
2,400.0	2,391.5	2,371.5	2,371.5	5.9	47.4	177.28	-273.2	278.6	537.7	485.3	52.40	10.261		
2,500.0	2,490.8	2,470.8	2,470.8	6.2	49.4	177.34	-273.2	278.6	549.7	495.1	54.61	10.066		
2,600.0	2,590.0	2,570.0	2,570.0	6.5	51.4	177.39	-273.2	278.6	561.7	504.9	56.82	9.887		
2,700.0	2,689.3	2,669.3	2,669.3	6.8	53.4	177.45	-273.2	278.6	573.8	514.7	59.02	9.721		
2,800.0	2,788.6	2,768.6	2,768.6	7.1	55.4	177.50	-273.2	278.6	585.8	524.6	61.23	9.567		
2,900.0	2,887.9	2,867.9	2,867.9	7.4	57.4	177.55	-273.2	278.6	597.8	534.4	63.44	9.423		
3,000.0	2,987.1	2,967.1	2,967.1	7.7	59.3	177.60	-273.2	278.6	609.8	544.2	65.65	9.289		
3,100.0	3,086.4	3,066.4	3,066.4	8.0	61.3	177.65	-273.2	278.6	621.9	554.0	67.86	9.164		
3,200.0	3,185.7	3,165.7	3,165.7	8.4	63.3	177.69	-273.2	278.6	633.9	563.8	70.07	9.047		
3,300.0	3,285.0	3,265.0	3,265.0	8.7	65.3	177.73	-273.2	278.6	645.9	573.6	72.27	8.937		
3,400.0	3,384.2	3,364.2	3,364.2	9.0	67.3	177.77	-273.2	278.6	657.9	583.4	74.48	8.833		
3,500.0	3,483.5	3,463.5	3,463.5	9.3	69.3	177.81	-273.2	278.6	669.9	593.3	76.69	8.736		
3,600.0	3,582.8	3,562.8	3,562.8	9.6	71.3	177.85	-273.2	278.6	682.0	603.1	78.90	8.643		
3,700.0	3,682.1	3,662.1	3,662.1	9.9	73.2	177.89	-273.2	278.6	694.0	612.9	81.11	8.556		
3,800.0	3,781.3	3,761.3	3,761.3	10.2	75.2	177.93	-273.2	278.6	706.0	622.7	83.32	8.474		
3,900.0	3,880.6	3,860.6	3,860.6	10.5	77.2	177.96	-273.2	278.6	718.0	632.5	85.53	8.395		
4,000.0	3,979.9	3,959.9	3,959.9	10.8	79.2	177.99	-273.2	278.6	730.1	642.3	87.74	8.321		
4,100.0	4,079.1	4,059.1	4,059.1	11.2	81.2	178.03	-273.2	278.6	742.1	652.1	89.95	8.250		
4,200.0	4,178.4	4,158.4	4,158.4	11.5	83.2	178.06	-273.2	278.6	754.1	662.0	92.16	8.183		
4,300.0	4,277.7	4,257.7	4,257.7	11.8	85.2	178.09	-273.2	278.6	766.1	671.8	94.37	8.119		
4,400.0	4,377.0	4,357.0	4,357.0	12.1	87.1	178.12	-273.2	278.6	778.2	681.6	96.58	8.057		
4,500.0	4,476.2	4,456.2	4,456.2	12.4	89.1	178.15	-273.2	278.6	790.2	691.4	98.79	7.999		
4,600.0	4,575.5	4,555.5	4,555.5	12.7	91.1	178.17	-273.2	278.6	802.2	701.2	101.00	7.943		
4,680.4	4,655.3	4,635.3	4,635.3	13.0	92.7	178.20	-273.2	278.6	811.9	709.1	102.78	7.900		
4,700.0	4,674.8	4,654.8	4,654.8	13.0	93.1	178.20	-273.2	278.6	814.2	710.9	103.28	7.883		
4,800.0	4,774.3	4,754.3	4,754.3	13.3	95.1	178.23	-273.2	278.6	823.8	718.0	105.76	7.789		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 28R-403
Project:	SEC.28-T5N-R64W	TVD Reference:	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	MD Reference:	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 28R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-13-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - Hall 28-2 (Exist) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7600-UNKNOWN													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
4,900.0	4,874.1	4,854.1	4,854.1	13.4	97.1	178.25	-273.2	278.6	829.9	721.8	108.13	7.676		
5,000.0	4,974.1	4,954.1	4,954.1	13.6	99.1	178.25	-273.2	278.6	832.6	722.2	110.37	7.544		
5,025.9	5,000.0	4,980.0	4,980.0	13.6	99.6	136.42	-273.2	278.6	832.7	721.8	110.92	7.507		
5,100.0	5,074.1	5,054.1	5,054.1	13.8	101.1	136.42	-273.2	278.6	832.7	720.1	112.55	7.399		
5,200.0	5,174.1	5,154.1	5,154.1	13.9	103.1	136.42	-273.2	278.6	832.7	717.9	114.76	7.256		
5,300.0	5,274.1	5,254.1	5,254.1	14.1	105.1	136.42	-273.2	278.6	832.7	715.7	116.97	7.119		
5,400.0	5,374.1	5,354.1	5,354.1	14.3	107.1	136.42	-273.2	278.6	832.7	713.5	119.18	6.987		
5,500.0	5,474.1	5,454.1	5,454.1	14.5	109.1	136.42	-273.2	278.6	832.7	711.3	121.39	6.859		
5,600.0	5,574.1	5,554.1	5,554.1	14.7	111.1	136.42	-273.2	278.6	832.7	709.1	123.61	6.737		
5,700.0	5,674.1	5,654.1	5,654.1	14.9	113.1	136.42	-273.2	278.6	832.7	706.9	125.82	6.618		
5,800.0	5,774.1	5,754.1	5,754.1	15.0	115.1	136.42	-273.2	278.6	832.7	704.7	128.04	6.504		
5,900.0	5,874.1	5,854.1	5,854.1	15.2	117.1	136.42	-273.2	278.6	832.7	702.4	130.25	6.393		
6,000.0	5,974.1	5,954.1	5,954.1	15.4	119.1	136.42	-273.2	278.6	832.7	700.2	132.46	6.286		
6,047.0	6,021.1	6,001.1	6,001.1	15.5	120.0	136.42	-273.2	278.6	832.7	699.2	133.51	6.237		
6,050.0	6,024.1	6,004.1	6,004.1	15.5	120.1	-43.58	-273.2	278.6	832.7	699.1	133.57	6.234		
6,100.0	6,074.1	6,054.1	6,054.1	15.6	121.1	-43.74	-273.2	278.6	831.4	696.9	134.44	6.184		
6,150.0	6,123.8	6,103.8	6,103.8	15.6	122.1	-44.17	-273.2	278.6	827.7	692.7	135.02	6.130		
6,200.0	6,173.1	6,153.1	6,153.1	15.6	123.1	-44.89	-273.2	278.6	821.7	686.4	135.32	6.072		
6,250.0	6,221.7	6,201.7	6,201.7	15.7	124.0	-45.90	-273.2	278.6	813.5	678.1	135.39	6.008		
6,300.0	6,269.5	6,249.5	6,249.5	15.7	125.0	-47.22	-273.2	278.6	803.1	667.8	135.30	5.936		
6,350.0	6,316.2	6,296.2	6,296.2	15.6	125.9	-48.85	-273.2	278.6	790.8	655.7	135.12	5.852		
6,400.0	6,361.7	6,341.7	6,341.7	15.6	126.8	-50.79	-273.2	278.6	776.6	641.6	134.99	5.753		
6,450.0	6,405.7	6,385.7	6,385.7	15.6	127.7	-53.07	-273.2	278.6	760.8	625.8	135.00	5.636		
6,500.0	6,448.0	6,428.0	6,428.0	15.6	128.6	-55.66	-273.2	278.6	743.7	608.4	135.29	5.497		
6,550.0	6,488.5	6,468.5	6,468.5	15.5	129.4	-58.57	-273.2	278.6	725.4	589.5	135.96	5.336		
6,600.0	6,527.1	6,507.1	6,507.1	15.5	130.1	-61.75	-273.2	278.6	706.4	569.3	137.04	5.155		
6,650.0	6,563.4	6,543.4	6,543.4	15.5	130.9	-65.15	-273.2	278.6	687.0	548.4	138.54	4.959		
6,700.0	6,597.4	6,577.4	6,577.4	15.4	131.5	-68.71	-273.2	278.6	667.5	527.2	140.36	4.756		
6,750.0	6,629.0	6,609.0	6,609.0	15.4	132.2	-72.33	-273.2	278.6	648.6	506.2	142.36	4.556		
6,800.0	6,658.0	6,638.0	6,638.0	15.4	132.8	-75.89	-273.2	278.6	630.7	486.3	144.36	4.369		
6,850.0	6,684.2	6,664.2	6,664.2	15.4	133.3	-79.29	-273.2	278.6	614.3	468.1	146.21	4.201		
6,900.0	6,707.6	6,687.6	6,687.6	15.4	133.8	-82.40	-273.2	278.6	600.0	452.2	147.79	4.060		
6,950.0	6,728.0	6,708.0	6,708.0	15.6	134.2	-85.14	-273.2	278.6	588.3	439.3	149.06	3.947		
7,000.0	6,745.5	6,725.5	6,725.5	15.9	134.5	-87.40	-273.2	278.6	579.9	429.8	150.03	3.865		
7,050.0	6,759.8	6,739.8	6,739.8	16.2	134.8	-89.13	-273.2	278.6	575.0	424.2	150.80	3.813		
7,085.1	6,768.0	6,748.0	6,748.0	16.5	135.0	-90.00	-273.2	278.6	574.0	422.8	151.25	3.795		
7,100.0	6,771.0	6,751.0	6,751.0	16.6	135.0	-90.28	-273.2	278.6	574.2	422.8	151.43	3.792 SF		
7,150.0	6,778.9	6,758.9	6,758.9	17.1	135.2	-90.81	-273.2	278.6	577.6	425.6	152.01	3.800		
7,167.0	6,780.9	6,760.9	6,760.9	17.2	135.2	-90.84	-273.2	278.6	579.7	427.5	152.20	3.809		
7,200.0	6,784.3	6,764.3	6,764.3	17.6	135.3	-91.19	-273.2	278.6	585.2	432.6	152.57	3.835		
7,241.0	6,788.6	6,768.6	6,768.6	18.0	135.4	-91.61	-273.2	278.6	594.4	441.4	153.05	3.884		
7,300.0	6,793.3	6,773.3	6,773.3	18.6	135.5	-91.13	-273.2	278.6	612.4	458.6	153.80	3.982		
7,365.4	6,794.9	6,774.9	6,774.9	19.4	135.5	-89.89	-273.2	278.6	638.1	483.5	154.59	4.128		
7,400.0	6,794.7	6,774.7	6,774.7	19.8	135.5	-89.88	-273.2	278.6	653.9	498.9	155.01	4.219		
7,500.0	6,794.4	6,774.4	6,774.4	21.1	135.5	-89.84	-273.2	278.6	707.3	551.0	156.28	4.526		
7,600.0	6,794.0	6,774.0	6,774.0	22.5	135.5	-89.80	-273.2	278.6	770.0	612.4	157.64	4.884		
7,700.0	6,793.6	6,773.6	6,773.6	23.9	135.5	-89.76	-273.2	278.6	840.0	680.9	159.08	5.280		
7,800.0	6,793.2	6,773.2	6,773.2	25.4	135.5	-89.73	-273.2	278.6	915.5	754.9	160.59	5.701		
7,900.0	6,792.8	6,772.8	6,772.8	27.0	135.5	-89.69	-273.2	278.6	995.4	833.3	162.14	6.139		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 28R-403
Project:	SEC.28-T5N-R64W	TVD Reference:	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	MD Reference:	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 28R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-13-14)	Offset TVD Reference:	Offset Datum

Offset Design		Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - Hall 28-5 (Exist) - Wellbore #1 - Wellbore #1											Offset Site Error:	0.0 ft
Survey Program: 7600-UNKNOWN													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
0.0	0.0	0.0	0.0	0.0	0.0	-144.82	-743.2	-523.8	909.4					
100.0	100.0	85.0	85.0	0.1	1.7	-144.82	-743.2	-523.8	909.2	907.4	1.81	501.625		
200.0	200.0	185.0	185.0	0.3	3.7	-144.82	-743.2	-523.8	909.2	905.2	4.04	225.206		
300.0	300.0	285.0	285.0	0.6	5.7	-144.82	-743.2	-523.8	909.2	903.0	6.26	145.196		
400.0	400.0	385.0	385.0	0.8	7.7	-144.82	-743.2	-523.8	909.2	900.7	8.49	107.134		
500.0	500.0	485.0	485.0	1.0	9.7	-144.82	-743.2	-523.8	909.2	898.5	10.71	84.883		
600.0	600.0	585.0	585.0	1.2	11.7	-144.82	-743.2	-523.8	909.2	896.3	12.94	70.285		
700.0	700.0	685.0	685.0	1.5	13.7	-144.82	-743.2	-523.8	909.2	894.1	15.16	59.971		
800.0	800.0	785.0	785.0	1.7	15.7	-144.82	-743.2	-523.8	909.2	891.8	17.39	52.297		
900.0	900.0	885.0	885.0	1.9	17.7	-144.82	-743.2	-523.8	909.2	889.6	19.61	46.364		
1,000.0	1,000.0	985.0	985.0	2.1	19.7	-144.82	-743.2	-523.8	909.2	887.4	21.84	41.640		
1,100.0	1,100.0	1,085.0	1,085.0	2.4	21.7	-103.09	-743.2	-523.8	909.6	885.6	24.06	37.813		
1,200.0	1,199.8	1,184.8	1,184.8	2.6	23.7	-103.39	-743.2	-523.8	910.8	884.6	26.27	34.669		
1,300.0	1,299.5	1,284.5	1,284.5	2.8	25.7	-103.88	-743.2	-523.8	912.9	884.4	28.49	32.042		
1,345.6	1,344.7	1,329.7	1,329.7	2.9	26.6	-104.16	-743.2	-523.8	914.1	884.6	29.50	30.985		
1,400.0	1,398.8	1,383.8	1,383.8	3.1	27.7	-104.56	-743.2	-523.8	915.8	885.1	30.72	29.812		
1,500.0	1,498.0	1,483.0	1,483.0	3.3	29.7	-105.28	-743.2	-523.8	918.9	885.9	32.96	27.879		
1,600.0	1,597.3	1,582.3	1,582.3	3.6	31.6	-105.99	-743.2	-523.8	922.2	886.9	35.21	26.190		
1,700.0	1,696.6	1,681.6	1,681.6	3.9	33.6	-106.70	-743.2	-523.8	925.6	888.1	37.47	24.704		
1,800.0	1,795.9	1,780.9	1,780.9	4.1	35.6	-107.41	-743.2	-523.8	929.1	889.4	39.73	23.388		
1,900.0	1,895.1	1,880.1	1,880.1	4.4	37.6	-108.11	-743.2	-523.8	932.8	890.8	41.99	22.215		
2,000.0	1,994.4	1,979.4	1,979.4	4.7	39.6	-108.81	-743.2	-523.8	936.7	892.4	44.26	21.163		
2,100.0	2,093.7	2,078.7	2,078.7	5.0	41.6	-109.50	-743.2	-523.8	940.6	894.1	46.53	20.217		
2,200.0	2,193.0	2,178.0	2,178.0	5.3	43.6	-110.18	-743.2	-523.8	944.7	895.9	48.80	19.360		
2,300.0	2,292.2	2,277.2	2,277.2	5.6	45.5	-110.86	-743.2	-523.8	949.0	897.9	51.07	18.582		
2,400.0	2,391.5	2,376.5	2,376.5	5.9	47.5	-111.53	-743.2	-523.8	953.4	900.0	53.34	17.873		
2,500.0	2,490.8	2,475.8	2,475.8	6.2	49.5	-112.19	-743.2	-523.8	957.9	902.3	55.61	17.224		
2,600.0	2,590.0	2,575.0	2,575.0	6.5	51.5	-112.85	-743.2	-523.8	962.5	904.6	57.88	16.628		
2,700.0	2,689.3	2,674.3	2,674.3	6.8	53.5	-113.51	-743.2	-523.8	967.3	907.1	60.16	16.079		
2,800.0	2,788.6	2,773.6	2,773.6	7.1	55.5	-114.15	-743.2	-523.8	972.2	909.7	62.43	15.573		
2,900.0	2,887.9	2,872.9	2,872.9	7.4	57.5	-114.79	-743.2	-523.8	977.2	912.5	64.70	15.103		
3,000.0	2,987.1	2,972.1	2,972.1	7.7	59.4	-115.43	-743.2	-523.8	982.3	915.3	66.97	14.668		
3,100.0	3,086.4	3,071.4	3,071.4	8.0	61.4	-116.05	-743.2	-523.8	987.6	918.3	69.24	14.263		
3,200.0	3,185.7	3,170.7	3,170.7	8.4	63.4	-116.67	-743.2	-523.8	992.9	921.4	71.51	13.886		
3,300.0	3,285.0	3,270.0	3,270.0	8.7	65.4	-117.29	-743.2	-523.8	998.4	924.7	73.78	13.533		
6,450.0	6,405.7	6,390.7	6,390.7	15.6	127.8	15.25	-743.2	-523.8	995.9	870.5	125.38	7.943		
6,500.0	6,448.0	6,433.0	6,433.0	15.6	128.7	16.29	-743.2	-523.8	970.1	848.2	121.90	7.958		
6,550.0	6,488.5	6,473.5	6,473.5	15.5	129.5	17.54	-743.2	-523.8	941.6	823.5	118.12	7.972		
6,600.0	6,527.1	6,512.1	6,512.1	15.5	130.2	19.07	-743.2	-523.8	910.7	796.6	114.19	7.976		
6,650.0	6,563.4	6,548.4	6,548.4	15.5	131.0	20.94	-743.2	-523.8	877.6	767.2	110.34	7.953		
6,700.0	6,597.4	6,582.4	6,582.4	15.4	131.6	23.23	-743.2	-523.8	842.3	735.4	106.90	7.879		
6,750.0	6,629.0	6,614.0	6,614.0	15.4	132.3	26.04	-743.2	-523.8	805.0	700.7	104.32	7.717		
6,800.0	6,658.0	6,643.0	6,643.0	15.4	132.9	29.49	-743.2	-523.8	766.0	662.8	103.20	7.423		
6,850.0	6,684.2	6,669.2	6,669.2	15.4	133.4	33.74	-743.2	-523.8	725.5	621.3	104.24	6.960		
6,900.0	6,707.6	6,692.6	6,692.6	15.4	133.9	38.93	-743.2	-523.8	683.7	575.7	108.02	6.330		
6,950.0	6,728.0	6,713.0	6,713.0	15.6	134.3	45.18	-743.2	-523.8	640.9	526.2	114.72	5.587		
7,000.0	6,745.5	6,730.5	6,730.5	15.9	134.6	52.48	-743.2	-523.8	597.4	473.6	123.74	4.828		
7,050.0	6,759.8	6,744.8	6,744.8	16.2	134.9	60.63	-743.2	-523.8	553.4	419.8	133.62	4.142		
7,100.0	6,771.0	6,756.0	6,756.0	16.6	135.1	69.13	-743.2	-523.8	509.4	367.0	142.45	3.576		
7,150.0	6,778.9	6,763.9	6,763.9	17.1	135.3	77.31	-743.2	-523.8	465.8	317.1	148.72	3.132		
7,167.0	6,780.9	6,765.9	6,765.9	17.2	135.3	79.90	-743.2	-523.8	451.2	301.0	150.18	3.004		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 28R-403
Project:	SEC.28-T5N-R64W	TVD Reference:	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	MD Reference:	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 28R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-13-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - Hall 28-5 (Exist) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 7600-UNKNOWN												Offset Well Error:	0.0 ft
Reference	Offset	Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,200.0	6,784.3	6,769.3	6,769.3	17.6	135.4	80.74	-743.2	-523.8	423.2	272.3	150.90	2.805	
7,241.0	6,788.6	6,773.6	6,773.6	18.0	135.5	81.78	-743.2	-523.8	389.5	237.7	151.79	2.566	
7,300.0	6,793.3	6,778.3	6,778.3	18.6	135.6	86.58	-743.2	-523.8	343.6	189.9	153.70	2.236	
7,365.4	6,794.9	6,779.9	6,779.9	19.4	135.6	90.18	-743.2	-523.8	298.0	143.3	154.69	1.926	
7,400.0	6,794.7	6,779.7	6,779.7	19.8	135.6	90.15	-743.2	-523.8	277.0	121.9	155.11	1.786	
7,500.0	6,794.4	6,779.4	6,779.4	21.1	135.6	90.05	-743.2	-523.8	235.4	79.0	156.38	1.505	
7,556.7	6,794.1	6,779.1	6,779.1	21.9	135.6	90.00	-743.2	-523.8	228.4	71.3	157.16	1.453	Level 3, CC, ES, SF
7,600.0	6,794.0	6,779.0	6,779.0	22.5	135.6	89.96	-743.2	-523.8	232.5	74.7	157.75	1.474	Level 3
7,700.0	6,793.6	6,778.6	6,778.6	23.9	135.6	89.86	-743.2	-523.8	269.6	110.4	159.19	1.694	
7,800.0	6,793.2	6,778.2	6,778.2	25.4	135.6	89.77	-743.2	-523.8	333.7	173.0	160.70	2.077	
7,900.0	6,792.8	6,777.8	6,777.8	27.0	135.6	89.67	-743.2	-523.8	412.3	250.1	162.26	2.541	
8,000.0	6,792.4	6,777.4	6,777.4	28.6	135.5	89.57	-743.2	-523.8	498.6	334.8	163.86	3.043	
8,100.0	6,792.1	6,777.1	6,777.1	30.2	135.5	89.48	-743.2	-523.8	589.3	423.8	165.49	3.561	
8,200.0	6,791.7	6,776.7	6,776.7	31.9	135.5	89.38	-743.2	-523.8	682.6	515.4	167.16	4.083	
8,300.0	6,791.3	6,776.3	6,776.3	33.6	135.5	89.28	-743.2	-523.8	777.6	608.7	168.86	4.605	
8,400.0	6,790.9	6,775.9	6,775.9	35.3	135.5	89.19	-743.2	-523.8	873.6	703.1	170.57	5.122	
8,500.0	6,790.5	6,775.5	6,775.5	37.0	135.5	89.09	-743.2	-523.8	970.5	798.2	172.31	5.632	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 28R-403
Project:	SEC.28-T5N-R64W	TVD Reference:	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	MD Reference:	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 28R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-13-14)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 7600-UNKNOWN												Offset Well Error:	0.0 ft
Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - Hendricks 33-3 (Exist) - Wellbore #1 - Wellbore #1													
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
11,300.0	6,779.8	6,787.8	6,787.8	88.8	135.8	-90.32	-5,246.1	231.3	924.4	700.0	224.42	4.119	
11,400.0	6,779.4	6,787.4	6,787.4	90.7	135.7	-90.28	-5,246.1	231.3	844.1	617.8	226.31	3.730	
11,500.0	6,779.0	6,787.0	6,787.0	92.6	135.7	-90.23	-5,246.1	231.3	768.5	540.3	228.20	3.368	
11,600.0	6,778.6	6,786.6	6,786.6	94.4	135.7	-90.19	-5,246.1	231.3	699.1	469.0	230.09	3.038	
11,700.0	6,778.2	6,786.2	6,786.2	96.3	135.7	-90.15	-5,246.1	231.3	637.8	405.8	231.97	2.749	
11,800.0	6,777.9	6,785.9	6,785.9	98.2	135.7	-90.11	-5,246.1	231.3	587.2	353.4	233.86	2.511	
11,900.0	6,777.5	6,785.5	6,785.5	100.1	135.7	-90.07	-5,246.1	231.3	550.4	314.6	235.76	2.335	
12,000.0	6,777.1	6,785.1	6,785.1	102.0	135.7	-90.02	-5,246.1	231.3	530.1	292.4	237.65	2.231	
12,059.6	6,776.9	6,784.9	6,784.9	103.2	135.7	-90.00	-5,246.1	231.3	526.7	287.9	238.77	2.206 CC, ES	
12,100.0	6,776.7	6,784.7	6,784.7	103.9	135.7	-89.98	-5,246.1	231.3	528.3	288.7	239.54	2.205 SF	
12,200.0	6,776.3	6,784.3	6,784.3	105.8	135.7	-89.94	-5,246.1	231.3	545.1	303.7	241.43	2.258	
12,300.0	6,775.9	6,783.9	6,783.9	107.7	135.7	-89.90	-5,246.1	231.3	579.0	335.6	243.32	2.379	
12,400.0	6,775.5	6,783.5	6,783.5	109.6	135.7	-89.86	-5,246.1	231.3	627.1	381.9	245.22	2.557	
12,500.0	6,775.2	6,783.2	6,783.2	111.5	135.7	-89.82	-5,246.1	231.3	686.5	439.4	247.11	2.778	
12,600.0	6,774.8	6,782.8	6,782.8	113.4	135.7	-89.77	-5,246.1	231.3	754.6	505.6	249.01	3.030	
12,700.0	6,774.4	6,782.4	6,782.4	115.3	135.6	-89.73	-5,246.1	231.3	829.1	578.2	250.90	3.305	
12,800.0	6,774.0	6,782.0	6,782.0	117.2	135.6	-89.69	-5,246.1	231.3	908.6	655.8	252.80	3.594	
12,900.0	6,773.6	6,781.6	6,781.6	119.1	135.6	-89.65	-5,246.1	231.3	991.8	737.1	254.69	3.894	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 28R-403
Project:	SEC.28-T5N-R64W	TVD Reference:	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	MD Reference:	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 28R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-13-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 7600-UNKNOWN													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
8,800.0	6,789.4	6,788.4	6,788.4	42.3	135.8	-91.44	-2,936.3	-150.5	960.9	783.0	177.87	5.402		
8,900.0	6,789.0	6,788.0	6,788.0	44.1	135.8	-91.29	-2,936.3	-150.5	862.2	682.5	179.67	4.799		
9,000.0	6,788.6	6,787.6	6,787.6	45.9	135.8	-91.14	-2,936.3	-150.5	763.8	582.3	181.48	4.209		
9,100.0	6,788.2	6,787.2	6,787.2	47.7	135.7	-90.99	-2,936.3	-150.5	665.9	482.6	183.29	3.633		
9,200.0	6,787.8	6,786.8	6,786.8	49.6	135.7	-90.83	-2,936.3	-150.5	568.7	383.6	185.12	3.072		
9,300.0	6,787.5	6,786.5	6,786.5	51.4	135.7	-90.68	-2,936.3	-150.5	472.7	285.7	186.95	2.528		
9,400.0	6,787.1	6,786.1	6,786.1	53.2	135.7	-90.53	-2,936.3	-150.5	378.7	190.0	188.78	2.006		
9,500.0	6,786.7	6,785.7	6,785.7	55.1	135.7	-90.38	-2,936.3	-150.5	288.9	98.3	190.62	1.516		
9,600.0	6,786.3	6,785.3	6,785.3	56.9	135.7	-90.23	-2,936.3	-150.5	208.5	16.1	192.46	1.083 Level 2		
9,700.0	6,785.9	6,784.9	6,784.9	58.8	135.7	-90.08	-2,936.3	-150.5	153.3	-41.0	194.31	0.789 Level 1		
9,749.9	6,785.7	6,784.7	6,784.7	59.7	135.7	-90.00	-2,936.3	-150.5	144.9	-50.3	195.23	0.742 Level 1, CC, ES, SF		
9,800.0	6,785.5	6,784.5	6,784.5	60.6	135.7	-89.92	-2,936.3	-150.5	153.3	-42.8	196.16	0.782 Level 1		
9,900.0	6,785.1	6,784.1	6,784.1	62.5	135.7	-89.77	-2,936.3	-150.5	208.6	10.6	198.01	1.054 Level 2		
10,000.0	6,784.8	6,783.8	6,783.8	64.3	135.7	-89.62	-2,936.3	-150.5	289.1	89.2	199.86	1.446 Level 3		
10,100.0	6,784.4	6,783.4	6,783.4	66.2	135.7	-89.47	-2,936.3	-150.5	378.9	177.2	201.71	1.878		
10,200.0	6,784.0	6,783.0	6,783.0	68.1	135.7	-89.32	-2,936.3	-150.5	472.8	269.3	203.57	2.323		
10,300.0	6,783.6	6,782.6	6,782.6	69.9	135.7	-89.17	-2,936.3	-150.5	568.9	363.4	205.43	2.769		
10,400.0	6,783.2	6,782.2	6,782.2	71.8	135.6	-89.01	-2,936.3	-150.5	666.0	458.8	207.29	3.213		
10,500.0	6,782.8	6,781.8	6,781.8	73.7	135.6	-88.86	-2,936.3	-150.5	764.0	554.8	209.15	3.653		
10,600.0	6,782.5	6,781.5	6,781.5	75.6	135.6	-88.71	-2,936.3	-150.5	862.4	651.3	211.01	4.087		
10,700.0	6,782.1	6,781.1	6,781.1	77.4	135.6	-88.56	-2,936.3	-150.5	961.1	748.2	212.87	4.515		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 28R-403
Project:	SEC.28-T5N-R64W	TVD Reference:	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	MD Reference:	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 28R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-13-14)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4635.0ft (RKB - 15')

Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Chesnut 28R-403

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.61°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 28R-403
Project:	SEC.28-T5N-R64W	TVD Reference:	WELL @ 4635.0ft (RKB - 15')
Reference Site:	Chesnut 28U-HZ Pad Sec.28-T5N-R64W	MD Reference:	WELL @ 4635.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chesnut 28R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (2-13-14)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4635.0ft (RKB - 15')

Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Chesnut 28R-403

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.61°

