PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Chesnut 28U-243**

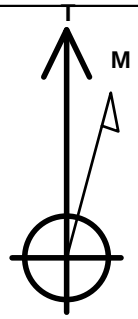
Surface Location: Chesnut 28U-HZ Pad Sec.28-T5N-R64W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4620.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1381411.34	3265145.21	40.376470	-104.548300	

RKB - 15' WELL @ 4635.0ft (RKB - 15')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 380'FNL & 850'FEL, SEC. 28	1.0	0.0	0.0	Point
BHL 2130'FNL & 382'FEL, SEC.33	6691.0	-7023.9	493.3	Point



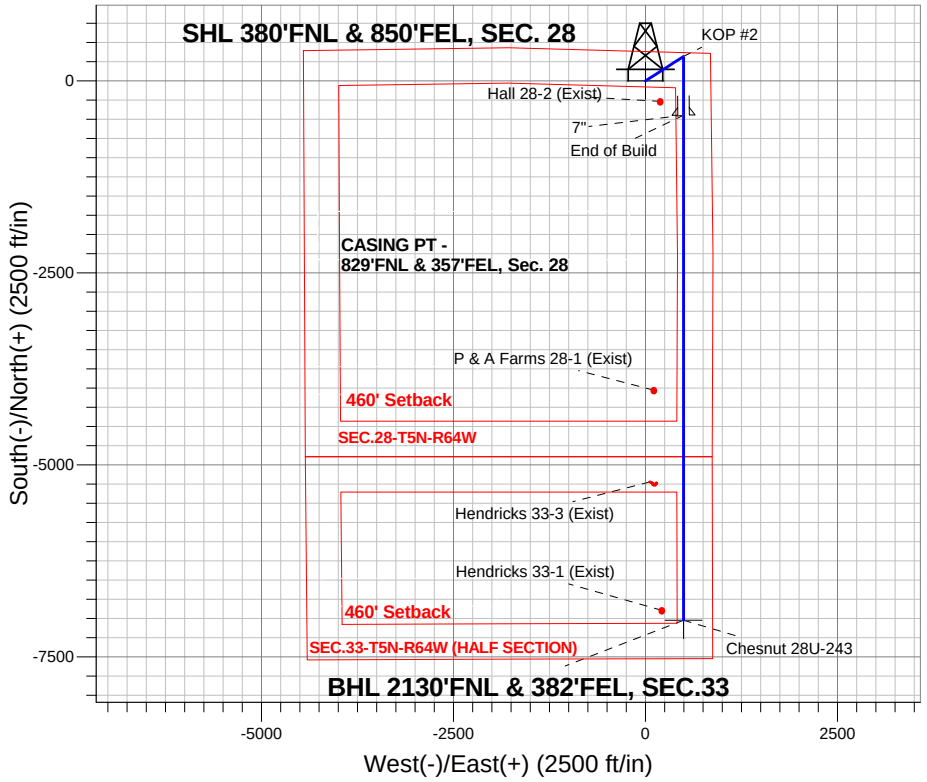
Azimuths to True North
Magnetic North: 8.31°

Magnetic Field
Strength: 52800.2snT
Dip Angle: 66.95°
Date: 9/16/2014
Model: IGRF2010

Chesnut 28U-HZ Pad Sec.28-T5N-R64W
Chesnut 28U-243
Plan #2 (9-16-14)

ANNOTATIONS

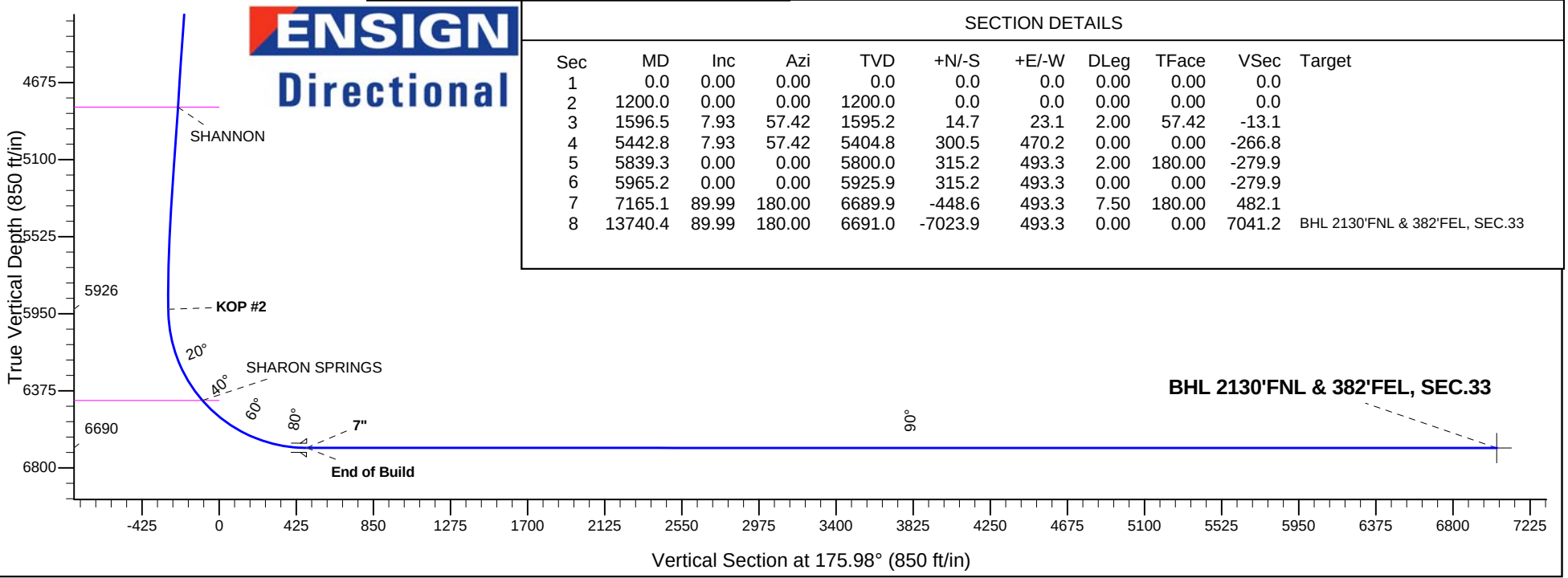
TVD	MD	Annotation
1200.0	1200.0	KOP #1
5925.9	5965.2	KOP #2
6689.9	7165.1	End of Build



ENSIGN Directional

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1200.0	0.00	0.00	1200.0	0.0	0.0	0.00	0.00	0.0	
3	1596.5	7.93	57.42	1595.2	14.7	23.1	2.00	57.42	-13.1	
4	5442.8	7.93	57.42	5404.8	300.5	470.2	0.00	0.00	-266.8	
5	5839.3	0.00	0.00	5800.0	315.2	493.3	2.00	180.00	-279.9	
6	5965.2	0.00	0.00	5925.9	315.2	493.3	0.00	0.00	-279.9	
7	7165.1	89.99	180.00	6689.9	-448.6	493.3	7.50	180.00	482.1	
8	13740.4	89.99	180.00	6691.0	-7023.9	493.3	0.00	0.00	7041.2	BHL 2130'FNL & 382'FEL, SEC.33



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.28-T5N-R64W
Chesnut 28U-HZ Pad Sec.28-T5N-R64W
Chesnut 28U-243

Wellbore #1

Plan: Plan #2 (9-16-14)

Standard Planning Report

16 September, 2014

Database:	landmark	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
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 28U-243	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (9-16-14)		

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 28U-243

Well Position	**+N/-S**	-3.7 ft	**Northing:**	1,381,411.34 ft	**Latitude:**	40.376470
	+E/-W	89.2 ft	**Easting:**	3,265,145.21 ft	**Longitude:**	-104.548300
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 #2 (9-16-14)

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	175.98

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	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,596.5	7.93	57.42	1,595.2	14.7	23.1	2.00	2.00	0.00	57.42	
5,442.8	7.93	57.42	5,404.8	300.5	470.2	0.00	0.00	0.00	0.00	
5,839.3	0.00	0.00	5,800.0	315.2	493.3	2.00	-2.00	0.00	180.00	
5,965.2	0.00	0.00	5,925.9	315.2	493.3	0.00	0.00	0.00	0.00	
7,165.1	89.99	180.00	6,689.9	-448.6	493.3	7.50	7.50	0.00	180.00	
13,740.4	89.99	180.00	6,691.0	-7,023.9	493.3	0.00	0.00	0.00	0.00	BHL 2130'FNL & 38

Database:	landmark	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
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 28U-243	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (9-16-14)		

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
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP #1									
1,300.0	2.00	57.42	1,300.0	0.9	1.5	-0.8	2.00	2.00	0.00
1,400.0	4.00	57.42	1,399.8	3.8	5.9	-3.3	2.00	2.00	0.00
1,500.0	6.00	57.42	1,499.5	8.4	13.2	-7.5	2.00	2.00	0.00
1,596.5	7.93	57.42	1,595.2	14.7	23.1	-13.1	2.00	2.00	0.00
1,600.0	7.93	57.42	1,598.7	15.0	23.5	-13.3	0.00	0.00	0.00
1,700.0	7.93	57.42	1,697.7	22.4	35.1	-19.9	0.00	0.00	0.00
1,800.0	7.93	57.42	1,796.8	29.9	46.7	-26.5	0.00	0.00	0.00
1,900.0	7.93	57.42	1,895.8	37.3	58.4	-33.1	0.00	0.00	0.00
2,000.0	7.93	57.42	1,994.9	44.7	70.0	-39.7	0.00	0.00	0.00
2,100.0	7.93	57.42	2,093.9	52.1	81.6	-46.3	0.00	0.00	0.00
2,200.0	7.93	57.42	2,193.0	59.6	93.2	-52.9	0.00	0.00	0.00
2,300.0	7.93	57.42	2,292.0	67.0	104.9	-59.5	0.00	0.00	0.00
2,400.0	7.93	57.42	2,391.1	74.4	116.5	-66.1	0.00	0.00	0.00
2,500.0	7.93	57.42	2,490.1	81.9	128.1	-72.7	0.00	0.00	0.00
2,600.0	7.93	57.42	2,589.1	89.3	139.7	-79.3	0.00	0.00	0.00
2,700.0	7.93	57.42	2,688.2	96.7	151.4	-85.9	0.00	0.00	0.00
2,800.0	7.93	57.42	2,787.2	104.1	163.0	-92.5	0.00	0.00	0.00
2,900.0	7.93	57.42	2,886.3	111.6	174.6	-99.1	0.00	0.00	0.00
3,000.0	7.93	57.42	2,985.3	119.0	186.2	-105.7	0.00	0.00	0.00
3,100.0	7.93	57.42	3,084.4	126.4	197.9	-112.3	0.00	0.00	0.00
3,200.0	7.93	57.42	3,183.4	133.9	209.5	-118.9	0.00	0.00	0.00
3,300.0	7.93	57.42	3,282.4	141.3	221.1	-125.4	0.00	0.00	0.00
3,400.0	7.93	57.42	3,381.5	148.7	232.7	-132.0	0.00	0.00	0.00
3,435.9	7.93	57.42	3,417.0	151.4	236.9	-134.4	0.00	0.00	0.00
PARKMAN									
3,500.0	7.93	57.42	3,480.5	156.1	244.4	-138.6	0.00	0.00	0.00
3,600.0	7.93	57.42	3,579.6	163.6	256.0	-145.2	0.00	0.00	0.00
3,700.0	7.93	57.42	3,678.6	171.0	267.6	-151.8	0.00	0.00	0.00
3,800.0	7.93	57.42	3,777.7	178.4	279.2	-158.4	0.00	0.00	0.00
3,900.0	7.93	57.42	3,876.7	185.9	290.9	-165.0	0.00	0.00	0.00
4,000.0	7.93	57.42	3,975.8	193.3	302.5	-171.6	0.00	0.00	0.00
4,100.0	7.93	57.42	4,074.8	200.7	314.1	-178.2	0.00	0.00	0.00
4,149.7	7.93	57.42	4,124.0	204.4	319.9	-181.5	0.00	0.00	0.00
SUSSEX									
4,200.0	7.93	57.42	4,173.8	208.1	325.7	-184.8	0.00	0.00	0.00
4,300.0	7.93	57.42	4,272.9	215.6	337.4	-191.4	0.00	0.00	0.00
4,400.0	7.93	57.42	4,371.9	223.0	349.0	-198.0	0.00	0.00	0.00
4,500.0	7.93	57.42	4,471.0	230.4	360.6	-204.6	0.00	0.00	0.00
4,600.0	7.93	57.42	4,570.0	237.8	372.2	-211.2	0.00	0.00	0.00

Database:	landmark	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
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 28U-243	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (9-16-14)		

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)
4,700.0	7.93	57.42	4,669.1	245.3	383.9	-217.8	0.00	0.00	0.00
4,800.0	7.93	57.42	4,768.1	252.7	395.5	-224.4	0.00	0.00	0.00
4,842.3	7.93	57.42	4,810.0	255.8	400.4	-227.2	0.00	0.00	0.00
SHANNON									
4,900.0	7.93	57.42	4,867.1	260.1	407.1	-231.0	0.00	0.00	0.00
5,000.0	7.93	57.42	4,966.2	267.6	418.7	-237.6	0.00	0.00	0.00
5,100.0	7.93	57.42	5,065.2	275.0	430.4	-244.2	0.00	0.00	0.00
5,200.0	7.93	57.42	5,164.3	282.4	442.0	-250.8	0.00	0.00	0.00
5,300.0	7.93	57.42	5,263.3	289.8	453.6	-257.4	0.00	0.00	0.00
5,400.0	7.93	57.42	5,362.4	297.3	465.2	-264.0	0.00	0.00	0.00
5,442.8	7.93	57.42	5,404.8	300.5	470.2	-266.8	0.00	0.00	0.00
5,500.0	6.79	57.42	5,461.5	304.4	476.4	-270.3	2.00	-2.00	0.00
5,600.0	4.79	57.42	5,561.0	309.8	484.9	-275.1	2.00	-2.00	0.00
5,700.0	2.79	57.42	5,660.8	313.4	490.4	-278.3	2.00	-2.00	0.00
5,800.0	0.79	57.42	5,760.7	315.1	493.1	-279.7	2.00	-2.00	0.00
5,839.3	0.00	0.00	5,800.0	315.2	493.3	-279.9	2.00	-2.00	0.00
5,900.0	0.00	0.00	5,860.7	315.2	493.3	-279.9	0.00	0.00	0.00
5,965.2	0.00	0.00	5,925.9	315.2	493.3	-279.9	0.00	0.00	0.00
KOP #2									
6,000.0	2.61	180.00	5,960.7	314.4	493.3	-279.1	7.50	7.50	0.00
6,100.0	10.11	180.00	6,060.0	303.3	493.3	-268.0	7.50	7.50	0.00
6,200.0	17.61	180.00	6,157.0	279.4	493.3	-244.2	7.50	7.50	0.00
6,300.0	25.11	180.00	6,250.1	243.0	493.3	-207.9	7.50	7.50	0.00
6,400.0	32.61	180.00	6,337.6	194.8	493.3	-159.7	7.50	7.50	0.00
6,500.0	40.11	180.00	6,418.1	135.5	493.3	-100.6	7.50	7.50	0.00
6,513.1	41.09	180.00	6,428.0	127.0	493.3	-92.2	7.50	7.50	0.00
SHARON SPRINGS									
6,600.0	47.61	180.00	6,490.1	66.3	493.3	-31.6	7.50	7.50	0.00
6,700.0	55.11	180.00	6,552.5	-11.8	493.3	46.3	7.50	7.50	0.00
6,800.0	62.61	180.00	6,604.2	-97.3	493.3	131.6	7.50	7.50	0.00
6,900.0	70.11	180.00	6,644.3	-188.8	493.3	222.9	7.50	7.50	0.00
7,000.0	77.61	180.00	6,672.1	-284.8	493.3	318.7	7.50	7.50	0.00
7,100.0	85.11	180.00	6,687.1	-383.6	493.3	417.2	7.50	7.50	0.00
7,165.1	89.99	180.00	6,689.9	-448.6	493.3	482.1	7.50	7.50	0.00
End of Build - 7"									
7,200.0	89.99	180.00	6,689.9	-483.5	493.3	516.9	0.00	0.00	0.00
7,300.0	89.99	180.00	6,689.9	-583.5	493.3	616.7	0.00	0.00	0.00
7,400.0	89.99	180.00	6,689.9	-683.5	493.3	716.4	0.00	0.00	0.00
7,500.0	89.99	180.00	6,689.9	-783.5	493.3	816.2	0.00	0.00	0.00
7,600.0	89.99	180.00	6,689.9	-883.5	493.3	915.9	0.00	0.00	0.00
7,700.0	89.99	180.00	6,689.9	-983.5	493.3	1,015.7	0.00	0.00	0.00
7,800.0	89.99	180.00	6,690.0	-1,083.5	493.3	1,115.4	0.00	0.00	0.00
7,900.0	89.99	180.00	6,690.0	-1,183.5	493.3	1,215.2	0.00	0.00	0.00
8,000.0	89.99	180.00	6,690.0	-1,283.5	493.3	1,314.9	0.00	0.00	0.00
8,100.0	89.99	180.00	6,690.0	-1,383.5	493.3	1,414.7	0.00	0.00	0.00
8,200.0	89.99	180.00	6,690.0	-1,483.5	493.3	1,514.4	0.00	0.00	0.00
8,300.0	89.99	180.00	6,690.1	-1,583.5	493.3	1,614.2	0.00	0.00	0.00
8,400.0	89.99	180.00	6,690.1	-1,683.5	493.3	1,714.0	0.00	0.00	0.00
8,500.0	89.99	180.00	6,690.1	-1,783.5	493.3	1,813.7	0.00	0.00	0.00
8,600.0	89.99	180.00	6,690.1	-1,883.5	493.3	1,913.5	0.00	0.00	0.00
8,700.0	89.99	180.00	6,690.1	-1,983.5	493.3	2,013.2	0.00	0.00	0.00
8,800.0	89.99	180.00	6,690.1	-2,083.5	493.3	2,113.0	0.00	0.00	0.00
8,900.0	89.99	180.00	6,690.2	-2,183.5	493.3	2,212.7	0.00	0.00	0.00

Database:	landmark	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
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 28U-243	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (9-16-14)		

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)
9,000.0	89.99	180.00	6,690.2	-2,283.5	493.3	2,312.5	0.00	0.00	0.00
9,100.0	89.99	180.00	6,690.2	-2,383.5	493.3	2,412.2	0.00	0.00	0.00
9,200.0	89.99	180.00	6,690.2	-2,483.5	493.3	2,512.0	0.00	0.00	0.00
9,300.0	89.99	180.00	6,690.2	-2,583.5	493.3	2,611.7	0.00	0.00	0.00
9,400.0	89.99	180.00	6,690.2	-2,683.5	493.3	2,711.5	0.00	0.00	0.00
9,500.0	89.99	180.00	6,690.3	-2,783.5	493.3	2,811.2	0.00	0.00	0.00
9,600.0	89.99	180.00	6,690.3	-2,883.5	493.3	2,911.0	0.00	0.00	0.00
9,700.0	89.99	180.00	6,690.3	-2,983.5	493.3	3,010.8	0.00	0.00	0.00
9,800.0	89.99	180.00	6,690.3	-3,083.5	493.3	3,110.5	0.00	0.00	0.00
9,900.0	89.99	180.00	6,690.3	-3,183.5	493.3	3,210.3	0.00	0.00	0.00
10,000.0	89.99	180.00	6,690.3	-3,283.5	493.3	3,310.0	0.00	0.00	0.00
10,100.0	89.99	180.00	6,690.4	-3,383.5	493.3	3,409.8	0.00	0.00	0.00
10,200.0	89.99	180.00	6,690.4	-3,483.5	493.3	3,509.5	0.00	0.00	0.00
10,300.0	89.99	180.00	6,690.4	-3,583.5	493.3	3,609.3	0.00	0.00	0.00
10,400.0	89.99	180.00	6,690.4	-3,683.5	493.3	3,709.0	0.00	0.00	0.00
10,500.0	89.99	180.00	6,690.4	-3,783.5	493.3	3,808.8	0.00	0.00	0.00
10,600.0	89.99	180.00	6,690.5	-3,883.5	493.3	3,908.5	0.00	0.00	0.00
10,700.0	89.99	180.00	6,690.5	-3,983.5	493.3	4,008.3	0.00	0.00	0.00
10,800.0	89.99	180.00	6,690.5	-4,083.5	493.3	4,108.1	0.00	0.00	0.00
10,900.0	89.99	180.00	6,690.5	-4,183.5	493.3	4,207.8	0.00	0.00	0.00
11,000.0	89.99	180.00	6,690.5	-4,283.5	493.3	4,307.6	0.00	0.00	0.00
11,100.0	89.99	180.00	6,690.5	-4,383.5	493.3	4,407.3	0.00	0.00	0.00
11,200.0	89.99	180.00	6,690.6	-4,483.5	493.3	4,507.1	0.00	0.00	0.00
11,300.0	89.99	180.00	6,690.6	-4,583.5	493.3	4,606.8	0.00	0.00	0.00
11,400.0	89.99	180.00	6,690.6	-4,683.5	493.3	4,706.6	0.00	0.00	0.00
11,500.0	89.99	180.00	6,690.6	-4,783.5	493.3	4,806.3	0.00	0.00	0.00
11,600.0	89.99	180.00	6,690.6	-4,883.5	493.3	4,906.1	0.00	0.00	0.00
11,700.0	89.99	180.00	6,690.6	-4,983.5	493.3	5,005.8	0.00	0.00	0.00
11,800.0	89.99	180.00	6,690.7	-5,083.5	493.3	5,105.6	0.00	0.00	0.00
11,900.0	89.99	180.00	6,690.7	-5,183.5	493.3	5,205.4	0.00	0.00	0.00
12,000.0	89.99	180.00	6,690.7	-5,283.5	493.3	5,305.1	0.00	0.00	0.00
12,100.0	89.99	180.00	6,690.7	-5,383.5	493.3	5,404.9	0.00	0.00	0.00
12,200.0	89.99	180.00	6,690.7	-5,483.5	493.3	5,504.6	0.00	0.00	0.00
12,300.0	89.99	180.00	6,690.7	-5,583.5	493.3	5,604.4	0.00	0.00	0.00
12,400.0	89.99	180.00	6,690.8	-5,683.5	493.3	5,704.1	0.00	0.00	0.00
12,500.0	89.99	180.00	6,690.8	-5,783.5	493.3	5,803.9	0.00	0.00	0.00
12,600.0	89.99	180.00	6,690.8	-5,883.5	493.3	5,903.6	0.00	0.00	0.00
12,700.0	89.99	180.00	6,690.8	-5,983.5	493.3	6,003.4	0.00	0.00	0.00
12,800.0	89.99	180.00	6,690.8	-6,083.5	493.3	6,103.1	0.00	0.00	0.00
12,900.0	89.99	180.00	6,690.9	-6,183.5	493.3	6,202.9	0.00	0.00	0.00
13,000.0	89.99	180.00	6,690.9	-6,283.5	493.3	6,302.7	0.00	0.00	0.00
13,100.0	89.99	180.00	6,690.9	-6,383.5	493.3	6,402.4	0.00	0.00	0.00
13,200.0	89.99	180.00	6,690.9	-6,483.5	493.3	6,502.2	0.00	0.00	0.00
13,300.0	89.99	180.00	6,690.9	-6,583.5	493.3	6,601.9	0.00	0.00	0.00
13,400.0	89.99	180.00	6,690.9	-6,683.5	493.3	6,701.7	0.00	0.00	0.00
13,500.0	89.99	180.00	6,691.0	-6,783.5	493.3	6,801.4	0.00	0.00	0.00
13,600.0	89.99	180.00	6,691.0	-6,883.5	493.3	6,901.2	0.00	0.00	0.00
13,700.0	89.99	180.00	6,691.0	-6,983.5	493.3	7,000.9	0.00	0.00	0.00
13,740.4	89.99	180.00	6,691.0	-7,023.9	493.3	7,041.2	0.00	0.00	0.00

Database:	landmark	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
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 28U-243	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (9-16-14)		

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
BHL 2130'FNL & 382' - plan hits target - Point	0.00	0.00	6,691.0	-7,023.9	493.3	1,374,393.46	3,265,713.84	40.357190	-104.546530
SHL 380'FNL & 850'F - plan hits target - Point	0.00	0.00	1.0	0.0	0.0	1,381,411.35	3,265,145.21	40.376470	-104.548300

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,165.1	6,689.9	7"	7	7-1/2

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,435.9	3,417.0	PARKMAN		0.00	
4,149.7	4,124.0	SUSSEX		0.00	
4,842.3	4,810.0	SHANNON		0.00	
6,513.1	6,428.0	SHARON SPRINGS		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
1,200.0	1,200.0	0.0	0.0	KOP #1
5,965.2	5,925.9	14.7	23.1	KOP #2
7,165.1	6,689.9	300.5	470.2	End of Build

ENSIGN Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.28-T5N-R64W
Chesnut 28U-HZ Pad Sec.28-T5N-R64W
Chesnut 28U-243

Wellbore #1
Plan #2 (9-16-14)

Anticollision Report

16 September, 2014

PDC ENERGY
Growing E&P Value

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
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 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #2 (9-16-14)	**Offset TVD Reference:**	Offset Datum

Reference Plan #2 (9-16-14)

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.0ft	**Error Surface:**	Elliptical Conic
Warning Levels Evaluated at:	2.00 **Sigma**		

Survey Tool Program **Date** 9/16/2014

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	13,740.4	Plan #2 (9-16-14) (Wellbore #1)	MWD	MWD - Standard

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Chesnut 28U-HZ Pad Sec.28-T5N-R64W						
Chesnut 28R-323 - Wellbore #1 - Plan #1 (2-13-14)	1,200.0	1,200.0	61.3	56.1	11.857	CC, ES
Chesnut 28R-323 - Wellbore #1 - Plan #1 (2-13-14)	13,741.3	13,816.6	507.1	233.3	1.852	SF
Chesnut 28R-403 - Wellbore #1 - Plan #1 (2-13-14)	1,000.0	1,000.0	89.2	85.0	20.895	CC, ES
Chesnut 28R-403 - Wellbore #1 - Plan #1 (2-13-14)	13,741.3	13,842.4	881.4	608.4	3.229	SF
Chesnut 28R-423 - Wellbore #1 - Plan #1 (2-13-14)	1,200.0	1,200.0	30.6	25.5	5.928	CC
Chesnut 28R-423 - Wellbore #1 - Plan #1 (2-13-14)	13,741.3	13,843.4	200.7	-52.0	0.794	Level 1, ES, SF
Chesnut 28U-403 - Wellbore #1 - Plan #1 (2-13-14)	1,000.0	999.0	30.6	26.4	7.180	CC
Chesnut 28U-403 - Wellbore #1 - Plan #1 (2-13-14)	13,741.3	13,871.7	201.0	-48.6	0.805	Level 1, ES, SF
Existing Wells - Chesnut Pads - Sec.28-T5N-R64W						
Hall 28-1 (Exist) - Wellbore #1 - Wellbore #1	8,002.5	6,670.0	607.5	444.3	3.723	CC, ES, SF
Hall 28-2 (Exist) - Wellbore #1 - Wellbore #1	6,984.4	6,648.5	303.8	154.7	2.037	CC, ES, SF
Hendricks 33-1 (Exist) - Wellbore #1 - Wellbore #1	13,612.9	6,714.0	281.5	12.8	1.048	Level 2, CC, ES, SF
Hendricks 33-3 (Exist) - Wellbore #1 - Wellbore #1	11,939.8	6,675.6	441.3	325.8	3.820	CC, ES
Hendricks 33-3 (Exist) - Wellbore #1 - Wellbore #1	12,000.0	6,675.7	445.4	328.7	3.818	SF
P & A Farms 28-1 (Exist) - Wellbore #1 - Wellbore #1	10,745.7	6,708.5	387.4	173.4	1.810	CC, ES, SF
P & A Farms 28-2 (Exist) - Wellbore #1 - Wellbore #1	9,649.2	6,689.3	732.9	539.8	3.796	CC, ES
P & A Farms 28-2 (Exist) - Wellbore #1 - Wellbore #1	9,700.0	6,689.3	734.7	540.7	3.786	SF

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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-90.00	0.0	-61.3	61.3				
100.0	100.0	100.0	100.0	0.1	0.1	-90.00	0.0	-61.3	61.3	61.1	0.22	272.711	
200.0	200.0	200.0	200.0	0.3	0.3	-90.00	0.0	-61.3	61.3	60.6	0.67	90.904	
300.0	300.0	300.0	300.0	0.6	0.6	-90.00	0.0	-61.3	61.3	60.2	1.12	54.542	
400.0	400.0	400.0	400.0	0.8	0.8	-90.00	0.0	-61.3	61.3	59.7	1.57	38.959	
500.0	500.0	500.0	500.0	1.0	1.0	-90.00	0.0	-61.3	61.3	59.3	2.02	30.301	
600.0	600.0	600.0	600.0	1.2	1.2	-90.00	0.0	-61.3	61.3	58.8	2.47	24.792	
700.0	700.0	700.0	700.0	1.5	1.5	-90.00	0.0	-61.3	61.3	58.4	2.92	20.978	
800.0	800.0	800.0	800.0	1.7	1.7	-90.00	0.0	-61.3	61.3	57.9	3.37	18.181	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
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 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #2 (9-16-14)	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
900.0	900.0	900.0	900.0	1.9	1.9	-90.00	0.0	-61.3	61.3	57.5	3.82	16.042	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-90.00	0.0	-61.3	61.3	57.0	4.27	14.353	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-90.00	0.0	-61.3	61.3	56.6	4.72	12.986	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-90.00	0.0	-61.3	61.3	56.1	5.17	11.857	CC, ES
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	-148.27	0.0	-61.3	62.8	57.2	5.61	11.188	
1,400.0	1,399.8	1,399.8	1,399.8	3.0	3.0	-150.57	0.0	-61.3	67.3	61.2	6.04	11.133	
1,500.0	1,499.5	1,499.5	1,499.5	3.2	3.3	-153.77	0.0	-61.3	75.0	68.5	6.47	11.589	
1,600.0	1,598.7	1,598.7	1,598.7	3.5	3.5	-157.27	0.0	-61.3	86.1	79.2	6.90	12.486	
1,700.0	1,697.7	1,697.7	1,697.7	3.7	3.7	-160.35	0.0	-61.3	99.0	91.7	7.34	13.491	
1,800.0	1,796.8	1,796.8	1,796.8	4.0	3.9	-162.72	0.0	-61.3	112.1	104.3	7.78	14.404	
1,900.0	1,895.8	1,895.8	1,895.8	4.3	4.1	-164.59	0.0	-61.3	125.3	117.1	8.23	15.232	
2,000.0	1,994.9	1,994.9	1,994.9	4.6	4.4	-166.11	0.0	-61.3	138.7	130.0	8.68	15.983	
2,100.0	2,093.9	2,096.3	2,096.3	4.9	4.6	-166.84	1.6	-61.1	151.4	142.3	9.13	16.577	
2,200.0	2,193.0	2,198.3	2,198.1	5.2	4.8	-166.33	6.8	-60.3	162.5	152.9	9.59	16.939	
2,300.0	2,292.0	2,300.3	2,299.7	5.5	5.1	-164.80	15.6	-59.1	172.0	161.9	10.06	17.100	
2,400.0	2,391.1	2,399.7	2,398.7	5.8	5.3	-162.99	25.7	-57.6	180.9	170.4	10.53	17.181	
2,500.0	2,490.1	2,499.2	2,497.6	6.1	5.5	-161.35	35.9	-56.1	190.0	179.0	11.01	17.255	
2,600.0	2,589.1	2,598.6	2,596.5	6.4	5.8	-159.86	46.1	-54.7	199.3	187.8	11.50	17.323	
2,700.0	2,688.2	2,698.1	2,695.4	6.8	6.0	-158.51	56.3	-53.2	208.6	196.6	12.00	17.383	
2,800.0	2,787.2	2,797.5	2,794.3	7.1	6.3	-157.27	66.5	-51.7	218.1	205.6	12.51	17.438	
2,900.0	2,886.3	2,897.0	2,893.2	7.4	6.5	-156.13	76.7	-50.3	227.7	214.6	13.02	17.486	
3,000.0	2,985.3	2,996.4	2,992.1	7.7	6.8	-155.09	86.9	-48.8	237.3	223.8	13.54	17.530	
3,100.0	3,084.4	3,095.8	3,091.0	8.1	7.0	-154.12	97.1	-47.3	247.0	233.0	14.06	17.568	
3,200.0	3,183.4	3,195.3	3,189.9	8.4	7.3	-153.23	107.3	-45.9	256.8	242.2	14.59	17.603	
3,300.0	3,282.4	3,294.7	3,288.8	8.7	7.5	-152.41	117.5	-44.4	266.6	251.5	15.12	17.633	
3,400.0	3,381.5	3,394.2	3,387.7	9.0	7.8	-151.64	127.7	-42.9	276.5	260.9	15.66	17.661	
3,500.0	3,480.5	3,493.6	3,486.7	9.4	8.1	-150.93	137.9	-41.5	286.5	270.3	16.20	17.685	
3,600.0	3,579.6	3,593.1	3,585.6	9.7	8.3	-150.27	148.1	-40.0	296.4	279.7	16.74	17.706	
3,700.0	3,678.6	3,692.5	3,684.5	10.0	8.6	-149.64	158.2	-38.5	306.5	289.2	17.29	17.726	
3,800.0	3,777.7	3,792.0	3,783.4	10.4	8.9	-149.06	168.4	-37.1	316.5	298.7	17.84	17.743	
3,900.0	3,876.7	3,891.4	3,882.3	10.7	9.1	-148.52	178.6	-35.6	326.6	308.2	18.39	17.759	
4,000.0	3,975.8	3,990.8	3,981.2	11.0	9.4	-148.00	188.8	-34.1	336.7	317.7	18.94	17.773	
4,100.0	4,074.8	4,090.3	4,080.1	11.4	9.7	-147.52	199.0	-32.6	346.8	327.3	19.50	17.785	
4,200.0	4,173.8	4,189.7	4,179.0	11.7	10.0	-147.06	209.2	-31.2	357.0	336.9	20.06	17.797	
4,300.0	4,272.9	4,289.2	4,277.9	12.0	10.2	-146.63	219.4	-29.7	367.1	346.5	20.62	17.807	
4,400.0	4,371.9	4,388.6	4,376.8	12.4	10.5	-146.22	229.6	-28.2	377.3	356.1	21.18	17.816	
4,500.0	4,471.0	4,488.1	4,475.8	12.7	10.8	-145.84	239.8	-26.8	387.5	365.8	21.74	17.824	
4,600.0	4,570.0	4,587.5	4,574.7	13.0	11.1	-145.47	250.0	-25.3	397.8	375.5	22.31	17.832	
4,700.0	4,669.1	4,687.0	4,673.6	13.4	11.4	-145.12	260.2	-23.8	408.0	385.1	22.87	17.839	
4,800.0	4,768.1	4,786.4	4,772.5	13.7	11.6	-144.79	270.4	-22.4	418.3	394.8	23.44	17.845	
4,900.0	4,867.1	4,885.8	4,871.4	14.1	11.9	-144.48	280.5	-20.9	428.5	404.5	24.01	17.851	
5,000.0	4,966.2	4,985.3	4,970.3	14.4	12.2	-144.18	290.7	-19.4	438.8	414.2	24.58	17.856	
5,100.0	5,065.2	5,084.7	5,069.2	14.7	12.5	-143.89	300.9	-18.0	449.1	424.0	25.15	17.861	
5,200.0	5,164.3	5,184.2	5,168.1	15.1	12.8	-143.62	311.1	-16.5	459.4	433.7	25.72	17.865	
5,300.0	5,263.3	5,282.8	5,266.3	15.4	13.0	-143.44	320.5	-15.2	469.8	443.5	26.26	17.892	
5,400.0	5,362.4	5,380.9	5,364.2	15.7	13.2	-143.65	326.8	-14.3	480.4	453.7	26.72	17.979	
5,500.0	5,461.5	5,478.9	5,462.1	16.0	13.4	-144.28	329.7	-13.8	490.9	463.7	27.14	18.088	
5,600.0	5,561.0	5,577.7	5,561.0	16.3	13.6	-145.01	330.0	-13.8	499.1	471.6	27.50	18.150	
5,700.0	5,660.8	5,677.5	5,660.8	16.5	13.8	-145.50	330.0	-13.8	504.5	476.7	27.86	18.109	
5,800.0	5,760.7	5,777.5	5,760.7	16.6	14.0	-145.73	330.0	-13.8	507.1	478.9	28.21	17.977	
5,900.0	5,860.7	5,877.5	5,860.7	16.8	14.2	-88.33	330.0	-13.8	507.3	478.7	28.57	17.757	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
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 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #2 (9-16-14)	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,944.0	5,904.7	5,921.5	5,904.7	16.9	14.2	91.72	330.0	-13.8	507.3	478.6	28.74	17.652	
6,000.0	5,960.7	5,977.5	5,960.7	16.9	14.4	91.76	330.0	-13.8	507.3	478.4	28.96	17.520	
6,100.0	6,060.0	6,078.5	6,061.7	17.0	14.5	92.79	328.1	-13.8	507.7	478.4	29.28	17.337	
6,200.0	6,157.0	6,182.1	6,164.2	17.1	14.6	93.96	313.9	-13.8	508.3	478.9	29.44	17.268	
6,300.0	6,250.1	6,287.1	6,265.3	17.0	14.6	95.07	285.5	-13.8	509.1	479.7	29.44	17.292	
6,400.0	6,337.6	6,393.7	6,362.8	17.0	14.6	96.09	242.9	-13.8	510.0	480.6	29.35	17.377	
6,500.0	6,418.1	6,501.6	6,454.5	16.9	14.5	97.00	186.2	-13.8	510.9	481.7	29.24	17.473	
6,600.0	6,490.1	6,610.8	6,538.3	16.9	14.5	97.79	116.4	-13.8	511.8	482.6	29.23	17.510	
6,700.0	6,552.5	6,721.1	6,612.0	16.9	14.6	98.43	34.4	-13.8	512.6	483.2	29.44	17.413	
6,800.0	6,604.2	6,832.3	6,673.5	16.9	14.9	98.92	-58.1	-13.8	513.3	483.3	29.99	17.117	
6,900.0	6,644.3	6,944.1	6,721.3	17.2	15.5	99.24	-159.1	-13.8	513.8	482.8	30.96	16.594	
7,000.0	6,672.1	7,056.4	6,753.8	17.7	16.2	99.38	-266.4	-13.8	514.0	481.6	32.40	15.862	
7,100.0	6,687.1	7,168.7	6,770.3	18.4	17.2	99.35	-377.4	-13.8	513.9	479.6	34.29	14.988	
7,200.0	6,689.9	7,275.9	6,771.8	19.4	18.3	99.18	-484.6	-13.8	513.7	477.2	36.47	14.086	
7,300.0	6,689.9	7,375.9	6,770.5	20.5	19.5	99.03	-584.6	-13.8	513.5	474.7	38.79	13.235	
7,400.0	6,689.9	7,475.9	6,769.1	21.7	20.8	98.88	-684.6	-13.8	513.2	471.9	41.34	12.416	
7,500.0	6,689.9	7,575.9	6,767.8	23.0	22.2	98.73	-784.6	-13.8	513.0	469.0	44.07	11.642	
7,600.0	6,689.9	7,675.9	6,766.5	24.4	23.6	98.59	-884.5	-13.8	512.8	465.9	46.95	10.924	
7,700.0	6,689.9	7,775.9	6,765.2	25.9	25.2	98.44	-984.5	-13.8	512.6	462.7	49.96	10.262	
7,800.0	6,690.0	7,875.8	6,763.8	27.4	26.7	98.29	-1,084.5	-13.8	512.4	459.4	53.07	9.656	
7,900.0	6,690.0	7,975.8	6,762.5	29.0	28.3	98.14	-1,184.5	-13.8	512.3	456.0	56.27	9.104	
8,000.0	6,690.0	8,075.8	6,761.2	30.6	30.0	97.99	-1,284.5	-13.8	512.1	452.5	59.55	8.599	
8,100.0	6,690.0	8,175.8	6,759.9	32.2	31.7	97.84	-1,384.5	-13.8	511.9	449.0	62.89	8.140	
8,200.0	6,690.0	8,275.8	6,758.5	33.9	33.4	97.69	-1,484.4	-13.8	511.7	445.4	66.28	7.720	
8,300.0	6,690.1	8,375.8	6,757.2	35.6	35.1	97.54	-1,584.4	-13.8	511.5	441.8	69.72	7.337	
8,400.0	6,690.1	8,475.8	6,755.9	37.3	36.9	97.39	-1,684.4	-13.8	511.3	438.1	73.20	6.986	
8,500.0	6,690.1	8,575.8	6,754.6	39.0	38.6	97.25	-1,784.4	-13.8	511.2	434.5	76.71	6.663	
8,600.0	6,690.1	8,675.8	6,753.2	40.8	40.4	97.10	-1,884.4	-13.8	511.0	430.7	80.26	6.367	
8,700.0	6,690.1	8,775.8	6,751.9	42.5	42.2	96.95	-1,984.4	-13.8	510.8	427.0	83.83	6.094	
8,800.0	6,690.1	8,875.8	6,750.6	44.3	44.0	96.80	-2,084.3	-13.8	510.7	423.3	87.42	5.841	
8,900.0	6,690.2	8,975.7	6,749.2	46.1	45.8	96.65	-2,184.3	-13.8	510.5	419.5	91.04	5.608	
9,000.0	6,690.2	9,075.7	6,747.9	47.9	47.6	96.50	-2,284.3	-13.8	510.4	415.7	94.68	5.391	
9,100.0	6,690.2	9,175.7	6,746.6	49.7	49.5	96.35	-2,384.3	-13.8	510.2	411.9	98.33	5.189	
9,200.0	6,690.2	9,275.7	6,745.3	51.5	51.3	96.20	-2,484.3	-13.8	510.1	408.1	102.00	5.001	
9,300.0	6,690.2	9,375.7	6,743.9	53.3	53.1	96.05	-2,584.2	-13.8	509.9	404.3	105.68	4.825	
9,400.0	6,690.2	9,475.7	6,742.6	55.2	55.0	95.90	-2,684.2	-13.8	509.8	400.4	109.37	4.661	
9,500.0	6,690.3	9,575.7	6,741.3	57.0	56.8	95.75	-2,784.2	-13.8	509.7	396.6	113.07	4.507	
9,600.0	6,690.3	9,675.7	6,740.0	58.9	58.7	95.60	-2,884.2	-13.8	509.5	392.7	116.79	4.363	
9,700.0	6,690.3	9,775.7	6,738.6	60.7	60.5	95.45	-2,984.2	-13.8	509.4	388.9	120.51	4.227	
9,800.0	6,690.3	9,875.7	6,737.3	62.5	62.4	95.30	-3,084.2	-13.8	509.3	385.0	124.24	4.099	
9,900.0	6,690.3	9,975.7	6,736.0	64.4	64.3	95.14	-3,184.1	-13.8	509.1	381.2	127.98	3.978	
10,000.0	6,690.3	10,075.6	6,734.7	66.3	66.1	94.99	-3,284.1	-13.8	509.0	377.3	131.73	3.864	
10,100.0	6,690.4	10,175.6	6,733.3	68.1	68.0	94.84	-3,384.1	-13.8	508.9	373.4	135.48	3.756	
10,200.0	6,690.4	10,275.6	6,732.0	70.0	69.9	94.69	-3,484.1	-13.8	508.8	369.6	139.24	3.654	
10,300.0	6,690.4	10,375.6	6,730.7	71.9	71.8	94.54	-3,584.1	-13.8	508.7	365.7	143.00	3.557	
10,400.0	6,690.4	10,475.6	6,729.4	73.7	73.6	94.39	-3,684.0	-13.8	508.6	361.8	146.77	3.465	
10,500.0	6,690.4	10,575.6	6,728.0	75.6	75.5	94.24	-3,784.0	-13.8	508.5	357.9	150.55	3.378	
10,600.0	6,690.5	10,675.6	6,726.7	77.5	77.4	94.09	-3,884.0	-13.8	508.4	354.1	154.32	3.294	
10,700.0	6,690.5	10,775.6	6,725.4	79.4	79.3	93.94	-3,984.0	-13.8	508.3	350.2	158.11	3.215	
10,800.0	6,690.5	10,875.6	6,724.0	81.2	81.2	93.79	-4,084.0	-13.8	508.2	346.3	161.89	3.139	
10,900.0	6,690.5	10,975.6	6,722.7	83.1	83.1	93.64	-4,184.0	-13.8	508.1	342.4	165.68	3.067	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
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 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #2 (9-16-14)	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
11,000.0	6,690.5	11,075.6	6,721.4	85.0	85.0	93.48	-4,283.9	-13.8	508.0	338.6	169.47	2.998	
11,100.0	6,690.5	11,175.5	6,720.1	86.9	86.8	93.33	-4,383.9	-13.8	508.0	334.7	173.27	2.932	
11,200.0	6,690.6	11,275.5	6,718.7	88.8	88.7	93.18	-4,483.9	-13.8	507.9	330.8	177.07	2.868	
11,300.0	6,690.6	11,375.5	6,717.4	90.7	90.6	93.03	-4,583.9	-13.8	507.8	326.9	180.86	2.808	
11,400.0	6,690.6	11,475.5	6,716.1	92.5	92.5	92.88	-4,683.9	-13.8	507.7	323.1	184.67	2.749	
11,500.0	6,690.6	11,575.5	6,714.8	94.4	94.4	92.73	-4,783.9	-13.8	507.7	319.2	188.47	2.694	
11,600.0	6,690.6	11,675.5	6,713.4	96.3	96.3	92.58	-4,883.8	-13.8	507.6	315.3	192.28	2.640	
11,700.0	6,690.6	11,775.5	6,712.1	98.2	98.2	92.42	-4,983.8	-13.8	507.5	311.5	196.08	2.588	
11,800.0	6,690.7	11,875.5	6,710.8	100.1	100.1	92.27	-5,083.8	-13.8	507.5	307.6	199.89	2.539	
11,900.0	6,690.7	11,975.5	6,709.5	102.0	102.0	92.12	-5,183.8	-13.8	507.4	303.7	203.70	2.491	
12,000.0	6,690.7	12,075.5	6,708.1	103.9	103.9	91.97	-5,283.8	-13.8	507.4	299.9	207.51	2.445	
12,100.0	6,690.7	12,175.5	6,706.8	105.8	105.8	91.82	-5,383.7	-13.8	507.3	296.0	211.32	2.401	
12,200.0	6,690.7	12,275.5	6,705.5	107.7	107.7	91.67	-5,483.7	-13.8	507.3	292.2	215.13	2.358	
12,300.0	6,690.7	12,375.4	6,704.2	109.6	109.6	91.51	-5,583.7	-13.8	507.3	288.3	218.94	2.317	
12,400.0	6,690.8	12,475.4	6,702.8	111.5	111.5	91.36	-5,683.7	-13.8	507.2	284.5	222.76	2.277	
12,500.0	6,690.8	12,575.4	6,701.5	113.4	113.4	91.21	-5,783.7	-13.8	507.2	280.6	226.57	2.239	
12,600.0	6,690.8	12,675.4	6,700.2	115.3	115.3	91.06	-5,883.7	-13.8	507.2	276.8	230.38	2.201	
12,700.0	6,690.8	12,775.4	6,698.8	117.2	117.2	90.91	-5,983.6	-13.8	507.2	273.0	234.20	2.166	
12,800.0	6,690.8	12,875.4	6,697.5	119.1	119.1	90.76	-6,083.6	-13.8	507.1	269.1	238.01	2.131	
12,900.0	6,690.9	12,975.4	6,696.2	121.0	121.1	90.60	-6,183.6	-13.8	507.1	265.3	241.82	2.097	
13,000.0	6,690.9	13,075.4	6,694.9	122.9	123.0	90.45	-6,283.6	-13.8	507.1	261.5	245.64	2.064	
13,100.0	6,690.9	13,175.4	6,693.5	124.8	124.9	90.30	-6,383.6	-13.8	507.1	257.7	249.45	2.033	
13,200.0	6,690.9	13,275.4	6,692.2	126.7	126.8	90.15	-6,483.5	-13.8	507.1	253.8	253.26	2.002	
13,297.5	6,690.9	13,372.9	6,690.9	128.6	128.6	90.00	-6,581.1	-13.8	507.1	250.1	256.98	1.973	
13,300.0	6,690.9	13,375.4	6,690.9	128.6	128.7	90.00	-6,583.5	-13.8	507.1	250.0	257.07	1.973	
13,400.0	6,690.9	13,475.3	6,689.6	130.5	130.6	89.84	-6,683.5	-13.8	507.1	246.2	260.88	1.944	
13,500.0	6,691.0	13,575.3	6,688.2	132.4	132.5	89.69	-6,783.5	-13.8	507.1	242.4	264.69	1.916	
13,600.0	6,691.0	13,675.3	6,686.9	134.3	134.4	89.54	-6,883.5	-13.8	507.1	238.6	268.50	1.889	
13,700.0	6,691.0	13,775.3	6,685.6	136.2	136.3	89.39	-6,983.5	-13.8	507.1	234.8	272.31	1.862	
13,741.3	6,691.0	13,816.6	6,685.0	137.0	137.0	89.33	-7,024.8	-13.8	507.1	233.3	273.81	1.852	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
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 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #2 (9-16-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28R-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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-87.66	3.6	-89.2	89.2				
100.0	100.0	100.0	100.0	0.1	0.1	-87.66	3.6	-89.2	89.2	89.0	0.22	397.002	
200.0	200.0	200.0	200.0	0.3	0.3	-87.66	3.6	-89.2	89.2	88.6	0.67	132.334	
300.0	300.0	300.0	300.0	0.6	0.6	-87.66	3.6	-89.2	89.2	88.1	1.12	79.400	
400.0	400.0	400.0	400.0	0.8	0.8	-87.66	3.6	-89.2	89.2	87.7	1.57	56.715	
500.0	500.0	500.0	500.0	1.0	1.0	-87.66	3.6	-89.2	89.2	87.2	2.02	44.111	
600.0	600.0	600.0	600.0	1.2	1.2	-87.66	3.6	-89.2	89.2	86.8	2.47	36.091	
700.0	700.0	700.0	700.0	1.5	1.5	-87.66	3.6	-89.2	89.2	86.3	2.92	30.539	
800.0	800.0	800.0	800.0	1.7	1.7	-87.66	3.6	-89.2	89.2	85.9	3.37	26.467	
900.0	900.0	900.0	900.0	1.9	1.9	-87.66	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	-87.66	3.6	-89.2	89.2	85.0	4.27	20.895	CC, ES
1,100.0	1,100.0	1,097.8	1,097.8	2.4	2.4	-86.90	4.9	-90.3	90.4	85.7	4.71	19.191	
1,200.0	1,200.0	1,195.4	1,195.3	2.6	2.6	-84.75	8.6	-93.6	94.1	89.0	5.15	18.263	
1,300.0	1,300.0	1,292.6	1,292.0	2.8	2.8	-139.48	14.8	-99.1	101.8	96.2	5.59	18.223	
1,400.0	1,399.8	1,390.2	1,389.0	3.0	3.0	-137.31	23.2	-106.6	114.7	108.6	6.03	19.028	
1,500.0	1,499.5	1,488.9	1,487.0	3.2	3.3	-136.42	32.0	-114.5	130.5	124.0	6.47	20.181	
1,600.0	1,598.7	1,587.2	1,584.6	3.5	3.5	-136.60	40.8	-122.4	148.9	141.9	6.91	21.528	
1,700.0	1,697.7	1,685.2	1,681.9	3.7	3.8	-137.31	49.6	-130.3	168.4	161.0	7.38	22.810	
1,800.0	1,796.8	1,783.3	1,779.3	4.0	4.1	-137.88	58.4	-138.2	187.9	180.1	7.86	23.908	
1,900.0	1,895.8	1,881.3	1,876.6	4.3	4.4	-138.34	67.2	-146.0	207.5	199.1	8.35	24.854	
2,000.0	1,994.9	1,979.4	1,974.0	4.6	4.7	-138.72	76.0	-153.9	227.0	218.2	8.84	25.677	
2,100.0	2,093.9	2,077.5	2,071.3	4.9	4.9	-139.04	84.8	-161.8	246.6	237.3	9.34	26.396	
2,200.0	2,193.0	2,175.5	2,168.6	5.2	5.2	-139.31	93.6	-169.6	266.2	256.3	9.85	27.028	
2,300.0	2,292.0	2,273.6	2,266.0	5.5	5.5	-139.55	102.4	-177.5	285.8	275.4	10.36	27.586	
2,400.0	2,391.1	2,371.6	2,363.3	5.8	5.8	-139.75	111.1	-185.4	305.4	294.5	10.87	28.083	
2,500.0	2,490.1	2,469.7	2,460.7	6.1	6.1	-139.93	119.9	-193.3	325.0	313.6	11.39	28.527	
2,600.0	2,589.1	2,567.7	2,558.0	6.4	6.4	-140.09	128.7	-201.1	344.5	332.6	11.91	28.926	
2,700.0	2,688.2	2,665.8	2,655.4	6.8	6.7	-140.23	137.5	-209.0	364.1	351.7	12.43	29.286	
2,800.0	2,787.2	2,763.9	2,752.7	7.1	7.0	-140.36	146.3	-216.9	383.7	370.8	12.96	29.612	
2,900.0	2,886.3	2,861.9	2,850.1	7.4	7.3	-140.48	155.1	-224.7	403.3	389.9	13.49	29.908	
3,000.0	2,985.3	2,960.0	2,947.4	7.7	7.6	-140.58	163.9	-232.6	422.9	408.9	14.01	30.178	
3,100.0	3,084.4	3,058.0	3,044.7	8.1	7.9	-140.68	172.7	-240.5	442.5	428.0	14.55	30.426	
3,200.0	3,183.4	3,156.1	3,142.1	8.4	8.2	-140.76	181.5	-248.3	462.2	447.1	15.08	30.654	
3,300.0	3,282.4	3,254.1	3,239.4	8.7	8.5	-140.85	190.3	-256.2	481.8	466.1	15.61	30.864	
3,400.0	3,381.5	3,352.2	3,336.8	9.0	8.8	-140.92	199.1	-264.1	501.4	485.2	16.14	31.057	
3,500.0	3,480.5	3,450.3	3,434.1	9.4	9.1	-140.99	207.8	-272.0	521.0	504.3	16.68	31.237	
3,600.0	3,579.6	3,548.3	3,531.5	9.7	9.4	-141.05	216.6	-279.8	540.6	523.4	17.21	31.404	
3,700.0	3,678.6	3,646.4	3,628.8	10.0	9.7	-141.11	225.4	-287.7	560.2	542.4	17.75	31.559	
3,800.0	3,777.7	3,744.4	3,726.2	10.4	10.0	-141.17	234.2	-295.6	579.8	561.5	18.29	31.704	
3,900.0	3,876.7	3,842.5	3,823.5	10.7	10.4	-141.22	243.0	-303.4	599.4	580.6	18.83	31.839	
4,000.0	3,975.8	3,940.5	3,920.8	11.0	10.7	-141.27	251.8	-311.3	619.0	599.6	19.36	31.966	
4,100.0	4,074.8	4,038.6	4,018.2	11.4	11.0	-141.31	260.6	-319.2	638.6	618.7	19.90	32.086	
4,200.0	4,173.8	4,136.7	4,115.5	11.7	11.3	-141.35	269.4	-327.0	658.2	637.8	20.44	32.198	
4,300.0	4,272.9	4,234.7	4,212.9	12.0	11.6	-141.39	278.2	-334.9	677.8	656.9	20.98	32.303	
4,400.0	4,371.9	4,332.8	4,310.2	12.4	11.9	-141.43	287.0	-342.8	697.5	675.9	21.52	32.402	
4,500.0	4,471.0	4,430.8	4,407.6	12.7	12.2	-141.47	295.8	-350.6	717.1	695.0	22.07	32.496	
4,600.0	4,570.0	4,528.9	4,504.9	13.0	12.5	-141.50	304.6	-358.5	736.7	714.1	22.61	32.585	
4,700.0	4,669.1	4,626.9	4,602.3	13.4	12.8	-141.53	313.3	-366.4	756.3	733.1	23.15	32.669	
4,800.0	4,768.1	4,736.1	4,710.7	13.7	13.1	-141.59	322.7	-374.8	775.6	751.9	23.69	32.735	
4,900.0	4,867.1	4,859.3	4,833.5	14.1	13.4	-141.88	330.0	-381.3	792.2	768.0	24.21	32.722	
5,000.0	4,966.2	4,983.4	4,957.5	14.4	13.6	-142.42	333.4	-384.3	805.8	781.1	24.70	32.621	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
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 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #2 (9-16-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28R-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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,065.2	5,091.1	5,065.2	14.7	13.8	-143.04	333.6	-384.6	817.0	791.9	25.16	32.478	
5,200.0	5,164.3	5,190.2	5,164.3	15.1	13.9	-143.61	333.6	-384.6	828.1	802.5	25.61	32.331	
5,300.0	5,263.3	5,289.2	5,263.3	15.4	14.1	-144.17	333.6	-384.6	839.3	813.2	26.07	32.192	
5,400.0	5,362.4	5,388.3	5,362.4	15.7	14.3	-144.71	333.6	-384.6	850.6	824.0	26.53	32.061	
5,500.0	5,461.5	5,487.4	5,461.5	16.0	14.5	-145.29	333.6	-384.6	861.4	834.4	27.00	31.901	
5,600.0	5,561.0	5,586.9	5,561.0	16.3	14.6	-145.76	333.6	-384.6	869.8	842.3	27.44	31.697	
5,700.0	5,660.8	5,686.7	5,660.8	16.5	14.8	-146.06	333.6	-384.6	875.2	847.4	27.85	31.431	
5,800.0	5,760.7	5,786.6	5,760.7	16.6	15.0	-146.21	333.6	-384.6	877.8	849.6	28.22	31.107	
5,900.0	5,860.7	5,886.6	5,860.7	16.8	15.2	-88.80	333.6	-384.6	878.0	849.5	28.58	30.718	
5,943.9	5,904.6	5,930.5	5,904.6	16.9	15.3	91.23	333.6	-384.6	878.1	849.3	28.75	30.540	
6,000.0	5,960.7	5,986.6	5,960.7	16.9	15.4	91.25	333.6	-384.6	878.1	849.1	28.96	30.317	
6,100.0	6,060.0	6,087.5	6,061.5	17.0	15.6	91.90	332.6	-384.6	878.3	849.1	29.25	30.034	
6,200.0	6,157.0	6,191.6	6,164.8	17.1	15.6	92.68	320.0	-384.6	878.8	849.5	29.36	29.928	
6,300.0	6,250.1	6,297.4	6,267.1	17.0	15.7	93.42	293.0	-384.6	879.4	850.1	29.35	29.965	
6,400.0	6,337.6	6,405.1	6,366.2	17.0	15.6	94.10	251.3	-384.6	880.1	850.9	29.25	30.087	
6,500.0	6,418.1	6,514.4	6,459.9	16.9	15.5	94.72	195.1	-384.6	880.9	851.7	29.16	30.207	
6,600.0	6,490.1	6,625.2	6,545.7	16.9	15.5	95.25	125.1	-384.6	881.6	852.4	29.18	30.212	
6,700.0	6,552.5	6,737.4	6,621.3	16.9	15.4	95.68	42.4	-384.6	882.2	852.8	29.42	29.982	
6,800.0	6,604.2	6,850.6	6,684.5	16.9	15.4	96.01	-51.4	-384.6	882.7	852.7	30.00	29.419	
6,900.0	6,644.3	6,964.6	6,733.4	17.2	15.7	96.22	-154.3	-384.6	883.0	852.0	31.01	28.477	
7,000.0	6,672.1	7,079.0	6,766.7	17.7	16.5	96.30	-263.7	-384.6	883.2	850.7	32.46	27.209	
7,079.2	6,685.0	7,169.4	6,781.1	18.2	17.3	96.28	-352.8	-384.6	883.2	849.2	33.91	26.041	
7,100.0	6,687.1	7,190.2	6,783.3	18.4	17.5	96.29	-373.5	-384.6	883.2	848.9	34.29	25.754	
7,200.0	6,689.9	7,294.7	6,793.0	19.4	18.6	96.70	-477.6	-384.6	883.9	847.5	36.38	24.296	
7,300.0	6,689.9	7,401.1	6,794.7	20.5	19.8	96.81	-583.9	-384.6	884.1	845.3	38.76	22.809	
7,400.0	6,689.9	7,501.1	6,794.4	21.7	21.1	96.79	-683.9	-384.6	884.1	842.8	41.30	21.406	
7,500.0	6,689.9	7,601.1	6,794.0	23.0	22.5	96.76	-783.9	-384.6	884.0	840.0	44.02	20.080	
7,600.0	6,689.9	7,701.1	6,793.6	24.4	23.9	96.73	-883.9	-384.6	884.0	837.1	46.90	18.847	
7,700.0	6,689.9	7,801.1	6,793.2	25.9	25.4	96.71	-983.9	-384.6	883.9	834.0	49.91	17.711	
7,800.0	6,690.0	7,901.1	6,792.8	27.4	27.0	96.68	-1,083.9	-384.6	883.9	830.8	53.02	16.671	
7,900.0	6,690.0	8,001.1	6,792.4	29.0	28.6	96.66	-1,183.9	-384.6	883.8	827.6	56.22	15.722	
8,000.0	6,690.0	8,101.1	6,792.1	30.6	30.2	96.63	-1,283.9	-384.6	883.8	824.3	59.49	14.856	
8,100.0	6,690.0	8,201.1	6,791.7	32.2	31.9	96.61	-1,383.9	-384.6	883.7	820.9	62.82	14.067	
8,200.0	6,690.0	8,301.1	6,791.3	33.9	33.6	96.58	-1,483.9	-384.6	883.7	817.5	66.21	13.347	
8,300.0	6,690.1	8,401.1	6,790.9	35.6	35.3	96.55	-1,583.9	-384.6	883.6	814.0	69.64	12.688	
8,400.0	6,690.1	8,501.1	6,790.5	37.3	37.0	96.53	-1,683.9	-384.6	883.6	810.5	73.11	12.085	
8,500.0	6,690.1	8,601.1	6,790.1	39.0	38.8	96.50	-1,783.9	-384.6	883.5	806.9	76.62	11.531	
8,600.0	6,690.1	8,701.1	6,789.8	40.8	40.6	96.48	-1,883.9	-384.6	883.5	803.3	80.16	11.022	
8,700.0	6,690.1	8,801.1	6,789.4	42.5	42.3	96.45	-1,983.9	-384.6	883.5	799.7	83.72	10.553	
8,800.0	6,690.1	8,901.1	6,789.0	44.3	44.1	96.42	-2,083.9	-384.6	883.4	796.1	87.30	10.119	
8,900.0	6,690.2	9,001.1	6,788.6	46.1	45.9	96.40	-2,183.9	-384.6	883.4	792.5	90.90	9.718	
9,000.0	6,690.2	9,101.1	6,788.2	47.9	47.8	96.37	-2,283.9	-384.6	883.3	788.8	94.52	9.345	
9,100.0	6,690.2	9,201.1	6,787.8	49.7	49.6	96.35	-2,383.9	-384.6	883.3	785.1	98.16	8.998	
9,200.0	6,690.2	9,301.1	6,787.4	51.5	51.4	96.32	-2,483.9	-384.6	883.2	781.4	101.81	8.675	
9,300.0	6,690.2	9,401.1	6,787.1	53.3	53.2	96.29	-2,583.9	-384.6	883.2	777.7	105.47	8.373	
9,400.0	6,690.2	9,501.1	6,786.7	55.2	55.1	96.27	-2,683.9	-384.6	883.1	774.0	109.15	8.091	
9,500.0	6,690.3	9,601.1	6,786.3	57.0	56.9	96.24	-2,783.9	-384.6	883.1	770.3	112.84	7.826	
9,600.0	6,690.3	9,701.1	6,785.9	58.9	58.8	96.22	-2,883.9	-384.6	883.1	766.5	116.53	7.578	
9,700.0	6,690.3	9,801.1	6,785.5	60.7	60.6	96.19	-2,983.9	-384.6	883.0	762.8	120.23	7.344	
9,800.0	6,690.3	9,901.1	6,785.1	62.5	62.5	96.17	-3,083.9	-384.6	883.0	759.0	123.94	7.124	
9,900.0	6,690.3	10,001.1	6,784.8	64.4	64.4	96.14	-3,183.9	-384.6	882.9	755.3	127.66	6.916	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
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 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #2 (9-16-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Chesnut 28U-HZ Pad Sec.28-T5N-R64W - Chesnut 28R-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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,000.0	6,690.3	10,101.1	6,784.4	66.3	66.2	96.11	-3,283.9	-384.6	882.9	751.5	131.39	6.720	
10,100.0	6,690.4	10,201.1	6,784.0	68.1	68.1	96.09	-3,383.9	-384.6	882.8	747.7	135.12	6.534	
10,200.0	6,690.4	10,301.1	6,783.6	70.0	70.0	96.06	-3,483.9	-384.6	882.8	743.9	138.86	6.358	
10,300.0	6,690.4	10,401.1	6,783.2	71.9	71.8	96.04	-3,583.9	-384.6	882.8	740.2	142.60	6.191	
10,400.0	6,690.4	10,501.1	6,782.8	73.7	73.7	96.01	-3,683.9	-384.6	882.7	736.4	146.34	6.032	
10,500.0	6,690.4	10,601.1	6,782.5	75.6	75.6	95.98	-3,783.9	-384.6	882.7	732.6	150.09	5.881	
10,600.0	6,690.5	10,701.1	6,782.1	77.5	77.5	95.96	-3,883.9	-384.6	882.6	728.8	153.85	5.737	
10,700.0	6,690.5	10,801.1	6,781.7	79.4	79.4	95.93	-3,983.9	-384.6	882.6	725.0	157.61	5.600	
10,800.0	6,690.5	10,901.1	6,781.3	81.2	81.2	95.91	-4,083.9	-384.6	882.6	721.2	161.37	5.469	
10,900.0	6,690.5	11,001.1	6,780.9	83.1	83.1	95.88	-4,183.9	-384.6	882.5	717.4	165.14	5.344	
11,000.0	6,690.5	11,101.1	6,780.5	85.0	85.0	95.85	-4,283.9	-384.6	882.5	713.6	168.91	5.225	
11,100.0	6,690.5	11,201.1	6,780.2	86.9	86.9	95.83	-4,383.9	-384.6	882.4	709.8	172.68	5.110	
11,200.0	6,690.6	11,301.1	6,779.8	88.8	88.8	95.80	-4,483.9	-384.6	882.4	705.9	176.45	5.001	
11,300.0	6,690.6	11,401.1	6,779.4	90.7	90.7	95.78	-4,583.9	-384.6	882.3	702.1	180.23	4.896	
11,400.0	6,690.6	11,501.1	6,779.0	92.5	92.6	95.75	-4,683.9	-384.6	882.3	698.3	184.01	4.795	
11,500.0	6,690.6	11,601.1	6,778.6	94.4	94.5	95.72	-4,783.9	-384.6	882.3	694.5	187.79	4.698	
11,600.0	6,690.6	11,701.1	6,778.2	96.3	96.4	95.70	-4,883.9	-384.6	882.2	690.7	191.58	4.605	
11,700.0	6,690.6	11,801.1	6,777.8	98.2	98.3	95.67	-4,983.9	-384.6	882.2	686.8	195.37	4.516	
11,800.0	6,690.7	11,901.1	6,777.5	100.1	100.2	95.65	-5,083.9	-384.6	882.1	683.0	199.15	4.429	
11,900.0	6,690.7	12,001.1	6,777.1	102.0	102.1	95.62	-5,183.9	-384.6	882.1	679.2	202.94	4.347	
12,000.0	6,690.7	12,101.1	6,776.7	103.9	104.0	95.60	-5,283.9	-384.6	882.1	675.3	206.74	4.267	
12,100.0	6,690.7	12,201.1	6,776.3	105.8	105.9	95.57	-5,383.9	-384.6	882.0	671.5	210.53	4.190	
12,200.0	6,690.7	12,301.1	6,775.9	107.7	107.8	95.54	-5,483.9	-384.6	882.0	667.7	214.33	4.115	
12,300.0	6,690.7	12,401.1	6,775.5	109.6	109.7	95.52	-5,583.9	-384.6	882.0	663.8	218.13	4.043	
12,400.0	6,690.8	12,501.1	6,775.2	111.5	111.6	95.49	-5,683.9	-384.6	881.9	660.0	221.92	3.974	
12,500.0	6,690.8	12,601.1	6,774.8	113.4	113.5	95.47	-5,783.9	-384.6	881.9	656.2	225.72	3.907	
12,600.0	6,690.8	12,701.1	6,774.4	115.3	115.4	95.44	-5,883.8	-384.6	881.8	652.3	229.53	3.842	
12,700.0	6,690.8	12,801.1	6,774.0	117.2	117.3	95.41	-5,983.8	-384.6	881.8	648.5	233.33	3.779	
12,800.0	6,690.8	12,901.1	6,773.6	119.1	119.2	95.39	-6,083.8	-384.6	881.8	644.6	237.13	3.718	
12,900.0	6,690.9	13,001.1	6,773.2	121.0	121.1	95.36	-6,183.8	-384.6	881.7	640.8	240.94	3.660	
13,000.0	6,690.9	13,101.1	6,772.9	122.9	123.0	95.34	-6,283.8	-384.6	881.7	636.9	244.75	3.602	
13,100.0	6,690.9	13,201.1	6,772.5	124.8	124.9	95.31	-6,383.8	-384.6	881.7	633.1	248.56	3.547	
13,200.0	6,690.9	13,301.1	6,772.1	126.7	126.8	95.28	-6,483.8	-384.6	881.6	629.3	252.36	3.493	
13,300.0	6,690.9	13,401.1	6,771.7	128.6	128.7	95.26	-6,583.8	-384.6	881.6	625.4	256.17	3.441	
13,400.0	6,690.9	13,501.1	6,771.3	130.5	130.6	95.23	-6,683.8	-384.6	881.5	621.6	259.99	3.391	
13,500.0	6,691.0	13,601.1	6,770.9	132.4	132.5	95.21	-6,783.8	-384.6	881.5	617.7	263.80	3.342	
13,600.0	6,691.0	13,701.1	6,770.6	134.3	134.4	95.18	-6,883.8	-384.6	881.5	613.9	267.61	3.294	
13,700.0	6,691.0	13,801.1	6,770.2	136.2	136.3	95.15	-6,983.8	-384.6	881.4	610.0	271.42	3.247	
13,741.3	6,691.0	13,842.4	6,770.0	137.0	137.1	95.14	-7,025.2	-384.6	881.4	608.4	273.00	3.229	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
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 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #2 (9-16-14)	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-90.00	0.0	-30.6	30.6				
100.0	100.0	100.0	100.0	0.1	0.1	-90.00	0.0	-30.6	30.6	30.4	0.22	136.355	
200.0	200.0	200.0	200.0	0.3	0.3	-90.00	0.0	-30.6	30.6	30.0	0.67	45.452	
300.0	300.0	300.0	300.0	0.6	0.6	-90.00	0.0	-30.6	30.6	29.5	1.12	27.271	
400.0	400.0	400.0	400.0	0.8	0.8	-90.00	0.0	-30.6	30.6	29.1	1.57	19.479	
500.0	500.0	500.0	500.0	1.0	1.0	-90.00	0.0	-30.6	30.6	28.6	2.02	15.151	
600.0	600.0	600.0	600.0	1.2	1.2	-90.00	0.0	-30.6	30.6	28.2	2.47	12.396	
700.0	700.0	700.0	700.0	1.5	1.5	-90.00	0.0	-30.6	30.6	27.7	2.92	10.489	
800.0	800.0	800.0	800.0	1.7	1.7	-90.00	0.0	-30.6	30.6	27.3	3.37	9.090	
900.0	900.0	900.0	900.0	1.9	1.9	-90.00	0.0	-30.6	30.6	26.8	3.82	8.021	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-90.00	0.0	-30.6	30.6	26.4	4.27	7.177	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-90.00	0.0	-30.6	30.6	25.9	4.72	6.493	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-90.00	0.0	-30.6	30.6	25.5	5.17	5.928	CC
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	-149.08	0.0	-30.6	32.1	26.5	5.61	5.727	
1,400.0	1,399.8	1,399.8	1,399.8	3.0	3.0	-153.24	0.0	-30.6	36.7	30.7	6.04	6.077	
1,500.0	1,499.5	1,499.5	1,499.5	3.2	3.3	-158.22	0.0	-30.6	44.7	38.2	6.47	6.905	
1,600.0	1,598.7	1,600.4	1,600.4	3.5	3.5	-161.95	1.2	-29.4	54.7	47.8	6.89	7.935	
1,700.0	1,697.7	1,701.9	1,701.7	3.7	3.7	-163.52	4.9	-25.5	63.2	55.9	7.32	8.634	
1,800.0	1,796.8	1,803.8	1,803.2	4.0	3.9	-163.35	11.2	-19.1	68.7	60.9	7.77	8.843	
1,900.0	1,895.8	1,904.4	1,903.1	4.3	4.2	-162.21	19.2	-10.8	71.8	63.6	8.22	8.737	
2,000.0	1,994.9	2,004.3	2,002.4	4.6	4.4	-161.11	27.2	-2.4	74.8	66.2	8.68	8.621	
2,100.0	2,093.9	2,104.3	2,101.7	4.9	4.7	-160.09	35.3	6.0	77.9	68.7	9.15	8.513	
2,200.0	2,193.0	2,204.2	2,200.9	5.2	4.9	-159.15	43.3	14.3	80.9	71.3	9.62	8.411	
2,300.0	2,292.0	2,304.1	2,300.2	5.5	5.2	-158.28	51.4	22.7	84.0	73.9	10.11	8.316	
2,400.0	2,391.1	2,404.1	2,399.5	5.8	5.5	-157.47	59.4	31.1	87.1	76.5	10.59	8.226	
2,500.0	2,490.1	2,504.0	2,498.7	6.1	5.7	-156.72	67.5	39.4	90.3	79.2	11.09	8.141	
2,600.0	2,589.1	2,604.0	2,598.0	6.4	6.0	-156.02	75.6	47.8	93.4	81.8	11.58	8.061	
2,700.0	2,688.2	2,703.9	2,697.3	6.8	6.3	-155.36	83.6	56.2	96.5	84.4	12.09	7.985	
2,800.0	2,787.2	2,803.9	2,796.5	7.1	6.6	-154.75	91.7	64.5	99.7	87.1	12.60	7.914	
2,900.0	2,886.3	2,903.8	2,895.8	7.4	6.9	-154.17	99.7	72.9	102.9	89.7	13.11	7.846	
3,000.0	2,985.3	3,003.8	2,995.1	7.7	7.2	-153.63	107.8	81.3	106.0	92.4	13.62	7.782	
3,100.0	3,084.4	3,103.7	3,094.3	8.1	7.4	-153.11	115.8	89.6	109.2	95.1	14.14	7.722	
3,200.0	3,183.4	3,203.6	3,193.6	8.4	7.7	-152.63	123.9	98.0	112.4	97.7	14.67	7.664	
3,300.0	3,282.4	3,303.6	3,292.9	8.7	8.0	-152.18	132.0	106.3	115.6	100.4	15.19	7.610	
3,400.0	3,381.5	3,403.5	3,392.1	9.0	8.3	-151.75	140.0	114.7	118.8	103.1	15.72	7.558	
3,500.0	3,480.5	3,503.5	3,491.4	9.4	8.6	-151.34	148.1	123.1	122.0	105.8	16.25	7.509	
3,600.0	3,579.6	3,603.4	3,590.7	9.7	8.9	-150.95	156.1	131.4	125.3	108.5	16.79	7.462	
3,700.0	3,678.6	3,703.4	3,689.9	10.0	9.2	-150.58	164.2	139.8	128.5	111.2	17.32	7.417	
3,800.0	3,777.7	3,803.3	3,789.2	10.4	9.5	-150.23	172.2	148.2	131.7	113.9	17.86	7.375	
3,900.0	3,876.7	3,903.3	3,888.5	10.7	9.8	-149.90	180.3	156.5	135.0	116.6	18.40	7.334	
4,000.0	3,975.8	4,003.2	3,987.7	11.0	10.1	-149.58	188.4	164.9	138.2	119.3	18.94	7.295	
4,100.0	4,074.8	4,103.1	4,087.0	11.4	10.4	-149.28	196.4	173.3	141.4	122.0	19.49	7.258	
4,200.0	4,173.8	4,203.1	4,186.3	11.7	10.7	-148.99	204.5	181.6	144.7	124.7	20.03	7.223	
4,300.0	4,272.9	4,303.0	4,285.6	12.0	11.0	-148.71	212.5	190.0	147.9	127.4	20.58	7.189	
4,400.0	4,371.9	4,403.0	4,384.8	12.4	11.3	-148.45	220.6	198.4	151.2	130.1	21.13	7.157	
4,500.0	4,471.0	4,502.9	4,484.1	12.7	11.6	-148.20	228.6	206.7	154.5	132.8	21.68	7.125	
4,600.0	4,570.0	4,602.9	4,583.4	13.0	11.9	-147.95	236.7	215.1	157.7	135.5	22.23	7.096	
4,700.0	4,669.1	4,702.8	4,682.6	13.4	12.2	-147.72	244.8	223.4	161.0	138.2	22.78	7.067	
4,800.0	4,768.1	4,802.8	4,781.9	13.7	12.5	-147.50	252.8	231.8	164.3	140.9	23.33	7.040	
4,900.0	4,867.1	4,902.7	4,881.2	14.1	12.8	-147.28	260.9	240.2	167.5	143.6	23.89	7.013	
5,000.0	4,966.2	5,002.6	4,980.4	14.4	13.1	-147.07	268.9	248.5	170.8	146.4	24.44	6.988	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
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 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #2 (9-16-14)	**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)

Survey Program: 0-MWD

Offset Site Error: 0.0 ft

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,065.2	5,102.6	5,079.7	14.7	13.4	-146.87	277.0	256.9	174.1	149.1	25.00	6.963	
5,200.0	5,164.3	5,202.5	5,179.0	15.1	13.7	-146.68	285.0	265.3	177.3	151.8	25.55	6.940	
5,300.0	5,263.3	5,302.5	5,278.2	15.4	14.0	-146.50	293.1	273.6	180.6	154.5	26.11	6.917	
5,400.0	5,362.4	5,402.4	5,377.5	15.7	14.3	-146.32	301.1	282.0	183.9	157.2	26.67	6.895	
5,500.0	5,461.5	5,502.4	5,476.8	16.0	14.6	-146.07	309.2	290.4	186.7	159.5	27.23	6.856	
5,600.0	5,561.0	5,600.0	5,573.7	16.3	14.9	-145.29	317.1	298.5	186.9	159.1	27.78	6.728	
5,700.0	5,660.8	5,697.6	5,670.9	16.5	15.2	-144.31	323.6	305.3	185.7	157.4	28.27	6.568	
5,800.0	5,760.7	5,793.4	5,766.4	16.6	15.4	-143.45	327.8	309.7	183.9	155.2	28.68	6.411	
5,900.0	5,860.7	5,889.3	5,862.3	16.8	15.5	-85.39	329.8	311.8	182.1	153.0	29.07	6.265	
5,947.5	5,908.1	5,935.1	5,908.1	16.9	15.6	94.83	330.0	312.0	182.0	152.7	29.25	6.221	
6,000.0	5,960.7	5,987.7	5,960.7	16.9	15.7	94.91	330.0	312.0	182.0	152.6	29.45	6.181	
6,100.0	6,060.0	6,088.2	6,061.2	17.0	15.8	98.04	329.1	312.0	183.2	153.2	30.02	6.102	
6,200.0	6,157.0	6,191.8	6,164.0	17.1	15.9	101.88	317.2	312.0	185.4	155.0	30.41	6.095	
6,300.0	6,250.1	6,297.2	6,266.0	17.0	16.0	105.45	290.9	312.0	188.2	157.7	30.51	6.170	
6,400.0	6,337.6	6,404.5	6,365.1	17.0	15.9	108.68	250.0	312.0	191.5	161.2	30.31	6.319	
6,500.0	6,418.1	6,513.5	6,458.9	16.9	15.8	111.51	194.6	312.0	195.0	165.1	29.90	6.523	
6,600.0	6,490.1	6,624.1	6,545.1	16.9	15.8	113.91	125.4	312.0	198.5	169.1	29.41	6.748	
6,700.0	6,552.5	6,736.3	6,621.3	16.9	15.7	115.85	43.2	312.0	201.6	172.6	29.03	6.945	
6,800.0	6,604.2	6,849.6	6,685.3	16.9	15.7	117.31	-50.2	312.0	204.1	175.2	28.96	7.049	
6,900.0	6,644.3	6,963.9	6,735.1	17.2	16.0	118.29	-152.9	312.0	206.0	176.5	29.42	7.000	
7,000.0	6,672.1	7,078.7	6,769.2	17.7	16.7	118.79	-262.4	312.0	206.9	176.4	30.53	6.777	
7,100.0	6,687.1	7,190.9	6,786.5	18.4	17.6	118.86	-373.2	312.0	207.1	174.8	32.28	6.415	
7,200.0	6,689.9	7,295.1	6,796.3	19.4	18.7	120.41	-477.0	312.0	210.4	176.3	34.05	6.178	
7,300.0	6,689.9	7,402.1	6,798.4	20.5	20.0	120.89	-583.9	312.0	211.3	175.2	36.10	5.854	
7,400.0	6,689.9	7,502.1	6,798.0	21.7	21.2	120.81	-683.9	312.0	211.1	172.8	38.38	5.502	
7,500.0	6,689.9	7,602.1	6,797.7	23.0	22.6	120.73	-783.9	312.0	211.0	170.1	40.81	5.169	
7,600.0	6,689.9	7,702.1	6,797.4	24.4	24.0	120.65	-883.9	312.0	210.8	167.4	43.38	4.859	
7,700.0	6,689.9	7,802.1	6,797.0	25.9	25.5	120.56	-983.9	312.0	210.6	164.5	46.07	4.572	
7,800.0	6,690.0	7,902.1	6,796.7	27.4	27.1	120.48	-1,083.9	312.0	210.4	161.6	48.84	4.308	
7,900.0	6,690.0	8,002.1	6,796.4	29.0	28.7	120.40	-1,183.9	312.0	210.3	158.6	51.70	4.067	
8,000.0	6,690.0	8,102.1	6,796.0	30.6	30.3	120.32	-1,283.9	312.0	210.1	155.4	54.63	3.846	
8,100.0	6,690.0	8,202.1	6,795.7	32.2	31.9	120.24	-1,383.9	312.0	209.9	152.3	57.61	3.643	
8,200.0	6,690.0	8,302.1	6,795.4	33.9	33.6	120.15	-1,483.9	312.0	209.7	149.1	60.65	3.458	
8,300.0	6,690.1	8,402.1	6,795.1	35.6	35.3	120.07	-1,583.9	312.0	209.5	145.8	63.73	3.288	
8,400.0	6,690.1	8,502.1	6,794.7	37.3	37.1	119.99	-1,683.9	312.0	209.4	142.5	66.85	3.132	
8,500.0	6,690.1	8,602.1	6,794.4	39.0	38.8	119.91	-1,783.9	312.0	209.2	139.2	70.01	2.988	
8,600.0	6,690.1	8,702.1	6,794.1	40.8	40.6	119.82	-1,883.9	312.0	209.0	135.8	73.19	2.856	
8,700.0	6,690.1	8,802.1	6,793.7	42.5	42.4	119.74	-1,983.9	312.0	208.9	132.5	76.40	2.734	
8,800.0	6,690.1	8,902.1	6,793.4	44.3	44.2	119.66	-2,083.9	312.0	208.7	129.0	79.64	2.620	
8,900.0	6,690.2	9,002.1	6,793.1	46.1	46.0	119.57	-2,183.9	312.0	208.5	125.6	82.90	2.515	
9,000.0	6,690.2	9,102.1	6,792.7	47.9	47.8	119.49	-2,283.9	312.0	208.3	122.2	86.18	2.418	
9,100.0	6,690.2	9,202.1	6,792.4	49.7	49.6	119.41	-2,383.9	312.0	208.2	118.7	89.48	2.326	
9,200.0	6,690.2	9,302.1	6,792.1	51.5	51.4	119.32	-2,483.9	312.0	208.0	115.2	92.79	2.241	
9,300.0	6,690.2	9,402.1	6,791.7	53.3	53.2	119.24	-2,583.9	312.0	207.8	111.7	96.12	2.162	
9,400.0	6,690.2	9,502.1	6,791.4	55.2	55.1	119.15	-2,683.9	312.0	207.7	108.2	99.47	2.088	
9,500.0	6,690.3	9,602.1	6,791.1	57.0	56.9	119.07	-2,783.9	312.0	207.5	104.7	102.83	2.018	
9,600.0	6,690.3	9,702.1	6,790.7	58.9	58.8	118.99	-2,883.9	312.0	207.3	101.1	106.20	1.952	
9,700.0	6,690.3	9,802.1	6,790.4	60.7	60.6	118.90	-2,983.9	312.0	207.1	97.6	109.59	1.890	
9,800.0	6,690.3	9,902.1	6,790.1	62.5	62.5	118.82	-3,083.9	312.0	207.0	94.0	112.98	1.832	
9,900.0	6,690.3	10,002.1	6,789.7	64.4	64.3	118.73	-3,183.9	312.0	206.8	90.4	116.39	1.777	
10,000.0	6,690.3	10,102.1	6,789.4	66.3	66.2	118.65	-3,283.9	312.0	206.6	86.8	119.81	1.725	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
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 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #2 (9-16-14)	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,100.0	6,690.4	10,202.1	6,789.1	68.1	68.1	118.56	-3,383.9	312.0	206.5	83.2	123.24	1.675	
10,200.0	6,690.4	10,302.1	6,788.8	70.0	69.9	118.48	-3,483.9	312.0	206.3	79.6	126.67	1.629	
10,300.0	6,690.4	10,402.1	6,788.4	71.9	71.8	118.39	-3,583.9	312.0	206.1	76.0	130.12	1.584	
10,400.0	6,690.4	10,502.1	6,788.1	73.7	73.7	118.31	-3,683.9	312.0	206.0	72.4	133.57	1.542	
10,500.0	6,690.4	10,602.1	6,787.8	75.6	75.6	118.22	-3,783.9	312.0	205.8	68.8	137.04	1.502	
10,600.0	6,690.5	10,702.1	6,787.4	77.5	77.4	118.14	-3,883.9	312.0	205.6	65.1	140.51	1.464	Level 3
10,700.0	6,690.5	10,802.1	6,787.1	79.4	79.3	118.05	-3,983.9	312.0	205.5	61.5	143.99	1.427	Level 3
10,800.0	6,690.5	10,902.1	6,786.8	81.2	81.2	117.96	-4,083.9	312.0	205.3	57.8	147.47	1.392	Level 3
10,900.0	6,690.5	11,002.1	6,786.4	83.1	83.1	117.88	-4,183.8	312.0	205.2	54.2	150.97	1.359	Level 3
11,000.0	6,690.5	11,102.1	6,786.1	85.0	85.0	117.79	-4,283.8	312.0	205.0	50.5	154.47	1.327	Level 3
11,100.0	6,690.5	11,202.1	6,785.8	86.9	86.9	117.70	-4,383.8	312.0	204.8	46.9	157.97	1.297	Level 3
11,200.0	6,690.6	11,302.1	6,785.4	88.8	88.8	117.62	-4,483.8	312.0	204.7	43.2	161.49	1.267	Level 3
11,300.0	6,690.6	11,402.1	6,785.1	90.7	90.6	117.53	-4,583.8	312.0	204.5	39.5	165.01	1.239	Level 2
11,400.0	6,690.6	11,502.1	6,784.8	92.5	92.5	117.44	-4,683.8	312.0	204.3	35.8	168.54	1.212	Level 2
11,500.0	6,690.6	11,602.1	6,784.4	94.4	94.4	117.36	-4,783.8	312.0	204.2	32.1	172.07	1.187	Level 2
11,600.0	6,690.6	11,702.1	6,784.1	96.3	96.3	117.27	-4,883.8	312.0	204.0	28.4	175.61	1.162	Level 2
11,700.0	6,690.6	11,802.1	6,783.8	98.2	98.2	117.18	-4,983.8	312.0	203.9	24.7	179.16	1.138	Level 2
11,800.0	6,690.7	11,902.1	6,783.4	100.1	100.1	117.10	-5,083.8	312.0	203.7	21.0	182.71	1.115	Level 2
11,900.0	6,690.7	12,002.1	6,783.1	102.0	102.0	117.01	-5,183.8	312.0	203.5	17.3	186.27	1.093	Level 2
12,000.0	6,690.7	12,102.1	6,782.8	103.9	103.9	116.92	-5,283.8	312.0	203.4	13.6	189.83	1.071	Level 2
12,100.0	6,690.7	12,202.1	6,782.5	105.8	105.8	116.83	-5,383.8	312.0	203.2	9.8	193.40	1.051	Level 2
12,200.0	6,690.7	12,302.1	6,782.1	107.7	107.7	116.75	-5,483.8	312.0	203.1	6.1	196.97	1.031	Level 2
12,300.0	6,690.7	12,402.1	6,781.8	109.6	109.6	116.66	-5,583.8	312.0	202.9	2.4	200.56	1.012	Level 2
12,400.0	6,690.8	12,502.1	6,781.5	111.5	111.5	116.57	-5,683.8	312.0	202.8	-1.4	204.14	0.993	Level 1
12,500.0	6,690.8	12,602.1	6,781.1	113.4	113.4	116.48	-5,783.8	312.0	202.6	-5.1	207.73	0.975	Level 1
12,600.0	6,690.8	12,702.1	6,780.8	115.3	115.3	116.39	-5,883.8	312.0	202.4	-8.9	211.33	0.958	Level 1
12,700.0	6,690.8	12,802.1	6,780.5	117.2	117.2	116.30	-5,983.8	312.0	202.3	-12.6	214.93	0.941	Level 1
12,800.0	6,690.8	12,902.1	6,780.1	119.1	119.1	116.22	-6,083.8	312.0	202.1	-16.4	218.54	0.925	Level 1
12,900.0	6,690.9	13,002.1	6,779.8	121.0	121.0	116.13	-6,183.8	312.0	202.0	-20.2	222.15	0.909	Level 1
13,000.0	6,690.9	13,102.1	6,779.5	122.9	122.9	116.04	-6,283.8	312.0	201.8	-23.9	225.77	0.894	Level 1
13,100.0	6,690.9	13,202.1	6,779.1	124.8	124.8	115.95	-6,383.8	312.0	201.7	-27.7	229.39	0.879	Level 1
13,200.0	6,690.9	13,302.1	6,778.8	126.7	126.7	115.86	-6,483.8	312.0	201.5	-31.5	233.02	0.865	Level 1
13,300.0	6,690.9	13,402.1	6,778.5	128.6	128.7	115.77	-6,583.8	312.0	201.4	-35.3	236.65	0.851	Level 1
13,400.0	6,690.9	13,502.1	6,778.1	130.5	130.6	115.68	-6,683.8	312.0	201.2	-39.1	240.29	0.837	Level 1
13,500.0	6,691.0	13,602.1	6,777.8	132.4	132.5	115.59	-6,783.8	312.0	201.1	-42.9	243.93	0.824	Level 1
13,600.0	6,691.0	13,702.1	6,777.5	134.3	134.4	115.50	-6,883.8	312.0	200.9	-46.7	247.58	0.812	Level 1
13,700.0	6,691.0	13,802.1	6,777.1	136.2	136.3	115.41	-6,983.8	312.0	200.8	-50.5	251.23	0.799	Level 1
13,741.3	6,691.0	13,843.4	6,777.0	137.0	137.1	115.37	-7,025.1	312.0	200.7	-52.0	252.74	0.794	Level 1, ES, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
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 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #2 (9-16-14)	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	30.6	30.7				
100.0	100.0	99.0	99.0	0.1	0.1	90.00	0.0	30.6	30.6	30.4	0.22	137.039	
200.0	200.0	199.0	199.0	0.3	0.3	90.00	0.0	30.6	30.6	30.0	0.67	45.604	
300.0	300.0	299.0	299.0	0.6	0.6	90.00	0.0	30.6	30.6	29.5	1.12	27.326	
400.0	400.0	399.0	399.0	0.8	0.8	90.00	0.0	30.6	30.6	29.1	1.57	19.507	
500.0	500.0	499.0	499.0	1.0	1.0	90.00	0.0	30.6	30.6	28.6	2.02	15.167	
600.0	600.0	599.0	599.0	1.2	1.2	90.00	0.0	30.6	30.6	28.2	2.47	12.407	
700.0	700.0	699.0	699.0	1.5	1.5	90.00	0.0	30.6	30.6	27.7	2.92	10.497	
800.0	800.0	799.0	799.0	1.7	1.7	90.00	0.0	30.6	30.6	27.3	3.37	9.096	
900.0	900.0	899.0	899.0	1.9	1.9	90.00	0.0	30.6	30.6	26.8	3.82	8.026	
1,000.0	1,000.0	999.0	999.0	2.1	2.1	90.00	0.0	30.6	30.6	26.4	4.27	7.180	CC
1,100.0	1,100.0	1,098.0	1,098.0	2.4	2.3	88.64	0.8	32.1	32.2	27.5	4.71	6.830	
1,200.0	1,200.0	1,196.8	1,196.7	2.6	2.6	85.19	3.1	36.7	36.9	31.7	5.15	7.161	
1,300.0	1,300.0	1,295.3	1,294.8	2.8	2.8	24.52	6.9	44.2	43.3	37.8	5.57	7.777	
1,400.0	1,399.8	1,393.5	1,392.3	3.0	3.0	22.48	12.3	54.7	50.0	44.0	5.99	8.336	
1,500.0	1,499.5	1,492.1	1,489.7	3.2	3.3	21.28	19.2	68.0	56.5	50.1	6.42	8.811	
1,600.0	1,598.7	1,592.0	1,588.3	3.5	3.6	21.27	26.5	82.3	60.7	53.9	6.84	8.868	
1,700.0	1,697.7	1,692.0	1,687.0	3.7	3.9	21.81	33.8	96.7	63.4	56.1	7.30	8.676	
1,800.0	1,796.8	1,791.9	1,785.6	4.0	4.2	22.31	41.2	111.0	66.0	58.3	7.77	8.497	
1,900.0	1,895.8	1,891.9	1,884.3	4.3	4.5	22.78	48.5	125.3	68.7	60.4	8.24	8.332	
2,000.0	1,994.9	1,991.9	1,982.9	4.6	4.9	23.20	55.9	139.6	71.4	62.6	8.73	8.177	
2,100.0	2,093.9	2,091.8	2,081.6	4.9	5.2	23.60	63.2	153.9	74.0	64.8	9.21	8.035	
2,200.0	2,193.0	2,191.8	2,180.3	5.2	5.6	23.97	70.5	168.3	76.7	67.0	9.71	7.902	
2,300.0	2,292.0	2,291.7	2,278.9	5.5	5.9	24.32	77.9	182.6	79.4	69.2	10.21	7.779	
2,400.0	2,391.1	2,391.7	2,377.6	5.8	6.3	24.64	85.2	196.9	82.1	71.4	10.71	7.665	
2,500.0	2,490.1	2,491.7	2,476.2	6.1	6.6	24.94	92.6	211.2	84.8	73.6	11.22	7.558	
2,600.0	2,589.1	2,591.6	2,574.9	6.4	7.0	25.22	99.9	225.5	87.5	75.7	11.73	7.459	
2,700.0	2,688.2	2,691.6	2,673.6	6.8	7.3	25.49	107.2	239.9	90.2	77.9	12.24	7.366	
2,800.0	2,787.2	2,791.6	2,772.2	7.1	7.7	25.74	114.6	254.2	92.8	80.1	12.75	7.279	
2,900.0	2,886.3	2,891.5	2,870.9	7.4	8.1	25.98	121.9	268.5	95.5	82.3	13.27	7.198	
3,000.0	2,985.3	2,991.5	2,969.5	7.7	8.4	26.20	129.3	282.8	98.2	84.4	13.79	7.122	
3,100.0	3,084.4	3,091.4	3,068.2	8.1	8.8	26.41	136.6	297.1	100.9	86.6	14.32	7.050	
3,200.0	3,183.4	3,191.4	3,166.9	8.4	9.1	26.61	143.9	311.5	103.6	88.8	14.84	6.982	
3,300.0	3,282.4	3,291.4	3,265.5	8.7	9.5	26.80	151.3	325.8	106.3	91.0	15.37	6.919	
3,400.0	3,381.5	3,391.3	3,364.2	9.0	9.9	26.98	158.6	340.1	109.0	93.1	15.90	6.859	
3,500.0	3,480.5	3,491.3	3,462.8	9.4	10.2	27.16	166.0	354.4	111.7	95.3	16.43	6.802	
3,600.0	3,579.6	3,591.3	3,561.5	9.7	10.6	27.32	173.3	368.7	114.4	97.5	16.96	6.748	
3,700.0	3,678.6	3,691.2	3,660.2	10.0	11.0	27.48	180.6	383.0	117.1	99.7	17.49	6.697	
3,800.0	3,777.7	3,791.2	3,758.8	10.4	11.4	27.63	188.0	397.4	119.9	101.8	18.03	6.649	
3,900.0	3,876.7	3,891.1	3,857.5	10.7	11.7	27.77	195.3	411.7	122.6	104.0	18.56	6.603	
4,000.0	3,975.8	3,991.1	3,956.1	11.0	12.1	27.91	202.7	426.0	125.3	106.2	19.10	6.559	
4,100.0	4,074.8	4,091.1	4,054.8	11.4	12.5	28.04	210.0	440.3	128.0	108.3	19.64	6.517	
4,200.0	4,173.8	4,191.0	4,153.4	11.7	12.8	28.16	217.3	454.6	130.7	110.5	20.17	6.478	
4,300.0	4,272.9	4,291.0	4,252.1	12.0	13.2	28.28	224.7	469.0	133.4	112.7	20.71	6.440	
4,400.0	4,371.9	4,391.0	4,350.8	12.4	13.6	28.40	232.0	483.3	136.1	114.8	21.25	6.404	
4,500.0	4,471.0	4,490.9	4,449.4	12.7	14.0	28.51	239.4	497.6	138.8	117.0	21.79	6.369	
4,600.0	4,570.0	4,590.9	4,548.1	13.0	14.3	28.62	246.7	511.9	141.5	119.2	22.34	6.336	
4,700.0	4,669.1	4,690.9	4,646.7	13.4	14.7	28.72	254.0	526.2	144.2	121.4	22.88	6.304	
4,800.0	4,768.1	4,790.8	4,745.4	13.7	15.1	28.82	261.4	540.6	146.9	123.5	23.42	6.274	
4,900.0	4,867.1	4,890.8	4,844.1	14.1	15.5	28.92	268.7	554.9	149.7	125.7	23.96	6.245	
5,000.0	4,966.2	4,990.7	4,942.7	14.4	15.8	29.01	276.0	569.2	152.4	127.9	24.51	6.217	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
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 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #2 (9-16-14)	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,065.2	5,090.7	5,041.4	14.7	16.2	29.10	283.4	583.5	155.1	130.0	25.05	6.190	
5,200.0	5,164.3	5,190.7	5,140.0	15.1	16.6	29.18	290.7	597.8	157.8	132.2	25.60	6.164	
5,300.0	5,263.3	5,290.6	5,238.7	15.4	16.9	29.26	298.1	612.2	160.5	134.4	26.14	6.139	
5,400.0	5,362.4	5,390.6	5,337.4	15.7	17.3	29.34	305.4	626.5	163.2	136.5	26.69	6.116	
5,500.0	5,461.5	5,490.5	5,436.0	16.0	17.7	29.35	312.7	640.8	166.4	139.2	27.21	6.116	
5,600.0	5,561.0	5,596.0	5,540.3	16.3	18.0	29.07	319.7	654.3	170.8	143.2	27.61	6.188	
5,700.0	5,660.8	5,701.7	5,645.5	16.5	18.2	28.73	324.8	664.4	174.9	146.9	27.94	6.260	
5,800.0	5,760.7	5,807.7	5,751.1	16.6	18.4	28.33	328.2	671.0	178.6	150.4	28.21	6.331	
5,900.0	5,860.7	5,913.8	5,857.2	16.8	18.6	85.37	329.9	674.2	181.5	153.0	28.50	6.367	
6,000.0	5,960.7	6,016.3	5,959.7	16.9	18.8	-94.91	330.0	674.4	181.8	153.0	28.82	6.308	
6,100.0	6,060.0	6,116.8	6,060.2	17.0	18.9	-98.06	329.2	674.4	183.0	154.3	28.74	6.368	
6,200.0	6,157.0	6,220.4	6,163.0	17.1	19.0	-101.94	317.4	674.4	185.2	156.7	28.48	6.503	
6,300.0	6,250.1	6,325.8	6,265.1	17.0	19.0	-105.55	291.2	674.4	188.1	159.9	28.20	6.672	
6,400.0	6,337.6	6,433.1	6,364.2	17.0	18.9	-108.82	250.4	674.4	191.5	163.6	27.91	6.861	
6,500.0	6,418.1	6,542.2	6,458.1	16.9	18.9	-111.69	195.1	674.4	195.1	167.4	27.64	7.057	
6,600.0	6,490.1	6,652.9	6,544.5	16.9	18.8	-114.11	125.9	674.4	198.6	171.1	27.44	7.236	
6,700.0	6,552.5	6,765.2	6,620.8	16.9	18.7	-116.07	43.8	674.4	201.8	174.4	27.37	7.372	
6,800.0	6,604.2	6,878.7	6,685.0	16.9	18.8	-117.55	-49.7	674.4	204.4	176.9	27.47	7.439	
6,900.0	6,644.3	6,993.1	6,734.9	17.2	18.9	-118.54	-152.5	674.4	206.2	178.3	27.89	7.394	
7,000.0	6,672.1	7,108.1	6,769.1	17.7	19.3	-119.04	-262.2	674.4	207.2	178.6	28.66	7.231	
7,100.0	6,687.1	7,220.4	6,786.5	18.4	19.9	-119.12	-373.1	674.4	207.4	177.6	29.78	6.963	
7,200.0	6,689.9	7,324.7	6,796.3	19.4	20.8	-120.67	-476.9	674.4	210.7	179.9	30.83	6.835	
7,300.0	6,689.9	7,431.7	6,798.4	20.5	21.8	-121.15	-583.9	674.4	211.7	178.9	32.73	6.467	
7,400.0	6,689.9	7,531.7	6,798.0	21.7	22.9	-121.07	-683.9	674.4	211.5	176.5	34.95	6.051	
7,500.0	6,689.9	7,631.7	6,797.7	23.0	24.2	-120.98	-783.9	674.4	211.3	174.0	37.35	5.658	
7,600.0	6,689.9	7,731.7	6,797.4	24.4	25.5	-120.90	-883.9	674.4	211.1	171.2	39.90	5.292	
7,700.0	6,689.9	7,831.7	6,797.0	25.9	26.9	-120.82	-983.9	674.4	210.9	168.4	42.57	4.956	
7,800.0	6,690.0	7,931.7	6,796.7	27.4	28.4	-120.74	-1,083.9	674.4	210.8	165.4	45.34	4.648	
7,900.0	6,690.0	8,031.7	6,796.4	29.0	29.9	-120.66	-1,183.9	674.4	210.6	162.4	48.20	4.369	
8,000.0	6,690.0	8,131.7	6,796.0	30.6	31.5	-120.58	-1,283.9	674.4	210.4	159.3	51.13	4.115	
8,100.0	6,690.0	8,231.7	6,795.7	32.2	33.1	-120.50	-1,383.9	674.4	210.2	156.1	54.13	3.884	
8,200.0	6,690.0	8,331.7	6,795.4	33.9	34.7	-120.41	-1,483.9	674.4	210.1	152.9	57.17	3.674	
8,300.0	6,690.1	8,431.7	6,795.0	35.6	36.3	-120.33	-1,583.9	674.4	209.9	149.6	60.26	3.483	
8,400.0	6,690.1	8,531.7	6,794.7	37.3	38.0	-120.25	-1,683.9	674.4	209.7	146.3	63.39	3.308	
8,500.0	6,690.1	8,631.7	6,794.4	39.0	39.7	-120.17	-1,783.9	674.4	209.5	143.0	66.56	3.148	
8,600.0	6,690.1	8,731.7	6,794.0	40.8	41.5	-120.08	-1,883.9	674.4	209.4	139.6	69.76	3.001	
8,700.0	6,690.1	8,831.7	6,793.7	42.5	43.2	-120.00	-1,983.9	674.4	209.2	136.2	72.98	2.866	
8,800.0	6,690.1	8,931.7	6,793.4	44.3	44.9	-119.92	-2,083.9	674.4	209.0	132.8	76.23	2.742	
8,900.0	6,690.2	9,031.7	6,793.1	46.1	46.7	-119.84	-2,183.9	674.4	208.8	129.3	79.50	2.627	
9,000.0	6,690.2	9,131.7	6,792.7	47.9	48.5	-119.75	-2,283.9	674.4	208.7	125.9	82.79	2.520	
9,100.0	6,690.2	9,231.7	6,792.4	49.7	50.3	-119.67	-2,383.9	674.4	208.5	122.4	86.09	2.422	
9,200.0	6,690.2	9,331.7	6,792.1	51.5	52.1	-119.59	-2,483.9	674.4	208.3	118.9	89.42	2.330	
9,300.0	6,690.2	9,431.7	6,791.7	53.3	53.9	-119.50	-2,583.9	674.4	208.1	115.4	92.76	2.244	
9,400.0	6,690.2	9,531.7	6,791.4	55.2	55.7	-119.42	-2,683.9	674.4	208.0	111.9	96.11	2.164	
9,500.0	6,690.3	9,631.7	6,791.1	57.0	57.5	-119.33	-2,783.9	674.4	207.8	108.3	99.48	2.089	
9,600.0	6,690.3	9,731.7	6,790.7	58.9	59.3	-119.25	-2,883.9	674.4	207.6	104.8	102.86	2.018	
9,700.0	6,690.3	9,831.7	6,790.4	60.7	61.2	-119.17	-2,983.9	674.4	207.5	101.2	106.26	1.952	
9,800.0	6,690.3	9,931.7	6,790.1	62.5	63.0	-119.08	-3,083.9	674.4	207.3	97.6	109.66	1.890	
9,900.0	6,690.3	10,031.7	6,789.7	64.4	64.9	-119.00	-3,183.9	674.4	207.1	94.0	113.07	1.832	
10,000.0	6,690.3	10,131.7	6,789.4	66.3	66.7	-118.91	-3,283.9	674.4	206.9	90.4	116.50	1.776	
10,100.0	6,690.4	10,231.7	6,789.1	68.1	68.5	-118.83	-3,383.9	674.4	206.8	86.8	119.93	1.724	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
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 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #2 (9-16-14)	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,200.0	6,690.4	10,331.7	6,788.7	70.0	70.4	-118.74	-3,483.9	674.4	206.6	83.2	123.37	1.675	
10,300.0	6,690.4	10,431.7	6,788.4	71.9	72.3	-118.66	-3,583.9	674.4	206.4	79.6	126.82	1.628	
10,400.0	6,690.4	10,531.7	6,788.1	73.7	74.1	-118.57	-3,683.9	674.4	206.3	76.0	130.28	1.583	
10,500.0	6,690.4	10,631.7	6,787.7	75.6	76.0	-118.49	-3,783.9	674.4	206.1	72.4	133.75	1.541	
10,600.0	6,690.5	10,731.7	6,787.4	77.5	77.9	-118.40	-3,883.9	674.4	205.9	68.7	137.23	1.501	
10,700.0	6,690.5	10,831.7	6,787.1	79.4	79.7	-118.32	-3,983.9	674.4	205.8	65.1	140.71	1.462	Level 3
10,800.0	6,690.5	10,931.7	6,786.7	81.2	81.6	-118.23	-4,083.9	674.4	205.6	61.4	144.20	1.426	Level 3
10,900.0	6,690.5	11,031.7	6,786.4	83.1	83.5	-118.15	-4,183.9	674.4	205.4	57.7	147.70	1.391	Level 3
11,000.0	6,690.5	11,131.7	6,786.1	85.0	85.3	-118.06	-4,283.9	674.4	205.3	54.1	151.20	1.358	Level 3
11,100.0	6,690.5	11,231.7	6,785.8	86.9	87.2	-117.97	-4,383.9	674.4	205.1	50.4	154.72	1.326	Level 3
11,200.0	6,690.6	11,331.7	6,785.4	88.8	89.1	-117.89	-4,483.8	674.4	205.0	46.7	158.23	1.295	Level 3
11,300.0	6,690.6	11,431.7	6,785.1	90.7	91.0	-117.80	-4,583.8	674.4	204.8	43.0	161.76	1.266	Level 3
11,400.0	6,690.6	11,531.7	6,784.8	92.5	92.9	-117.72	-4,683.8	674.4	204.6	39.3	165.29	1.238	Level 2
11,500.0	6,690.6	11,631.7	6,784.4	94.4	94.7	-117.63	-4,783.8	674.4	204.5	35.6	168.83	1.211	Level 2
11,600.0	6,690.6	11,731.7	6,784.1	96.3	96.6	-117.54	-4,883.8	674.4	204.3	31.9	172.37	1.185	Level 2
11,700.0	6,690.6	11,831.7	6,783.8	98.2	98.5	-117.46	-4,983.8	674.4	204.1	28.2	175.92	1.160	Level 2
11,800.0	6,690.7	11,931.7	6,783.4	100.1	100.4	-117.37	-5,083.8	674.4	204.0	24.5	179.47	1.137	Level 2
11,900.0	6,690.7	12,031.7	6,783.1	102.0	102.3	-117.28	-5,183.8	674.4	203.8	20.8	183.04	1.114	Level 2
12,000.0	6,690.7	12,131.7	6,782.8	103.9	104.2	-117.19	-5,283.8	674.4	203.7	17.1	186.60	1.091	Level 2
12,100.0	6,690.7	12,231.7	6,782.4	105.8	106.1	-117.11	-5,383.8	674.4	203.5	13.3	190.17	1.070	Level 2
12,200.0	6,690.7	12,331.7	6,782.1	107.7	108.0	-117.02	-5,483.8	674.4	203.3	9.6	193.75	1.049	Level 2
12,300.0	6,690.7	12,431.7	6,781.8	109.6	109.9	-116.93	-5,583.8	674.4	203.2	5.8	197.34	1.030	Level 2
12,400.0	6,690.8	12,531.7	6,781.4	111.5	111.8	-116.84	-5,683.8	674.4	203.0	2.1	200.92	1.010	Level 2
12,500.0	6,690.8	12,631.7	6,781.1	113.4	113.7	-116.76	-5,783.8	674.4	202.9	-1.7	204.52	0.992	Level 1
12,600.0	6,690.8	12,731.7	6,780.8	115.3	115.6	-116.67	-5,883.8	674.4	202.7	-5.4	208.12	0.974	Level 1
12,700.0	6,690.8	12,831.7	6,780.4	117.2	117.4	-116.58	-5,983.8	674.4	202.6	-9.2	211.72	0.957	Level 1
12,800.0	6,690.8	12,931.7	6,780.1	119.1	119.3	-116.49	-6,083.8	674.4	202.4	-12.9	215.33	0.940	Level 1
12,900.0	6,690.9	13,031.7	6,779.8	121.0	121.2	-116.40	-6,183.8	674.4	202.2	-16.7	218.95	0.924	Level 1
13,000.0	6,690.9	13,131.7	6,779.5	122.9	123.1	-116.31	-6,283.8	674.4	202.1	-20.5	222.57	0.908	Level 1
13,100.0	6,690.9	13,231.7	6,779.1	124.8	125.0	-116.23	-6,383.8	674.4	201.9	-24.3	226.19	0.893	Level 1
13,200.0	6,690.9	13,331.7	6,778.8	126.7	126.9	-116.14	-6,483.8	674.4	201.8	-28.0	229.82	0.878	Level 1
13,300.0	6,690.9	13,431.7	6,778.5	128.6	128.8	-116.05	-6,583.8	674.4	201.6	-31.8	233.46	0.864	Level 1
13,400.0	6,690.9	13,531.7	6,778.1	130.5	130.7	-115.96	-6,683.8	674.4	201.5	-35.6	237.09	0.850	Level 1
13,500.0	6,691.0	13,631.7	6,777.8	132.4	132.7	-115.87	-6,783.8	674.4	201.3	-39.4	240.74	0.836	Level 1
13,600.0	6,691.0	13,731.7	6,777.5	134.3	134.6	-115.78	-6,883.8	674.4	201.2	-43.2	244.39	0.823	Level 1
13,700.0	6,691.0	13,831.7	6,777.1	136.2	136.5	-115.69	-6,983.8	674.4	201.0	-47.0	248.04	0.810	Level 1
13,731.5	6,691.0	13,863.2	6,777.0	136.8	137.1	-115.66	-7,015.4	674.4	201.0	-48.2	249.19	0.806	Level 1
13,741.3	6,691.0	13,871.7	6,777.0	137.0	137.2	-115.65	-7,023.9	674.4	201.0	-48.6	249.53	0.805	Level 1, ES, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
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 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #2 (9-16-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - Hall 28-1 (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7400-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,300.0	6,689.9	6,669.9	6,669.9	20.5	133.4	89.99	-1,286.0	-114.2	928.8	776.0	152.76	6.080	
7,400.0	6,689.9	6,669.9	6,669.9	21.7	133.4	89.99	-1,286.0	-114.2	855.6	701.6	154.03	5.555	
7,500.0	6,689.9	6,669.9	6,669.9	23.0	133.4	89.99	-1,286.0	-114.2	788.4	633.0	155.39	5.074	
7,600.0	6,689.9	6,669.9	6,669.9	24.4	133.4	89.99	-1,286.0	-114.2	728.8	571.9	156.84	4.647	
7,700.0	6,689.9	6,669.9	6,669.9	25.9	133.4	90.00	-1,286.0	-114.2	678.7	520.3	158.34	4.286	
7,800.0	6,690.0	6,670.0	6,670.0	27.4	133.4	90.00	-1,286.0	-114.2	640.4	480.5	159.91	4.005	
7,900.0	6,690.0	6,670.0	6,670.0	29.0	133.4	90.00	-1,286.0	-114.2	616.1	454.6	161.51	3.815	
8,000.0	6,690.0	6,670.0	6,670.0	30.6	133.4	90.00	-1,286.0	-114.2	607.5	444.4	163.16	3.724	
8,002.5	6,690.0	6,670.0	6,670.0	30.6	133.4	90.00	-1,286.0	-114.2	607.5	444.3	163.20	3.723	CC, ES, SF
8,100.0	6,690.0	6,670.0	6,670.0	32.2	133.4	90.00	-1,286.0	-114.2	615.3	450.5	164.83	3.733	
8,200.0	6,690.0	6,670.0	6,670.0	33.9	133.4	90.00	-1,286.0	-114.2	638.8	472.3	166.53	3.836	
8,300.0	6,690.1	6,670.1	6,670.1	35.6	133.4	90.00	-1,286.0	-114.2	676.5	508.2	168.26	4.020	
8,400.0	6,690.1	6,670.1	6,670.1	37.3	133.4	90.01	-1,286.0	-114.2	726.0	556.0	170.00	4.271	
8,500.0	6,690.1	6,670.1	6,670.1	39.0	133.4	90.01	-1,286.0	-114.2	785.3	613.5	171.76	4.572	
8,600.0	6,690.1	6,670.1	6,670.1	40.8	133.4	90.01	-1,286.0	-114.2	852.1	678.6	173.54	4.910	
8,700.0	6,690.1	6,670.1	6,670.1	42.5	133.4	90.01	-1,286.0	-114.2	925.0	749.7	175.33	5.276	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
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 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #2 (9-16-14)	**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: 6990-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	144.90	-269.6	189.5	330.1				
100.0	100.0	80.0	80.0	0.1	1.6	144.90	-269.6	189.5	329.5	327.8	1.71	192.403	
200.0	200.0	180.0	180.0	0.3	3.6	144.90	-269.6	189.5	329.5	325.6	3.94	83.687	
300.0	300.0	280.0	280.0	0.6	5.6	144.90	-269.6	189.5	329.5	323.3	6.16	53.473	
400.0	400.0	380.0	380.0	0.8	7.6	144.90	-269.6	189.5	329.5	321.1	8.39	39.288	
500.0	500.0	480.0	480.0	1.0	9.6	144.90	-269.6	189.5	329.5	318.9	10.61	31.051	
600.0	600.0	580.0	580.0	1.2	11.6	144.90	-269.6	189.5	329.5	316.7	12.84	25.670	
700.0	700.0	680.0	680.0	1.5	13.6	144.90	-269.6	189.5	329.5	314.4	15.06	21.878	
800.0	800.0	780.0	780.0	1.7	15.6	144.90	-269.6	189.5	329.5	312.2	17.29	19.062	
900.0	900.0	880.0	880.0	1.9	17.6	144.90	-269.6	189.5	329.5	310.0	19.51	16.889	
1,000.0	1,000.0	980.0	980.0	2.1	19.6	144.90	-269.6	189.5	329.5	307.8	21.74	15.160	
1,100.0	1,100.0	1,080.0	1,080.0	2.4	21.6	144.90	-269.6	189.5	329.5	305.5	23.96	13.752	
1,200.0	1,200.0	1,180.0	1,180.0	2.6	23.6	144.90	-269.6	189.5	329.5	303.3	26.18	12.584	
1,300.0	1,300.0	1,280.0	1,280.0	2.8	25.6	87.78	-269.6	189.5	329.4	301.0	28.40	11.599	
1,400.0	1,399.8	1,379.8	1,379.8	3.0	27.6	88.69	-269.6	189.5	329.3	298.7	30.62	10.755	
1,488.3	1,487.8	1,467.8	1,467.8	3.2	29.4	90.00	-269.6	189.5	329.2	296.6	32.58	10.105	
1,500.0	1,499.5	1,479.5	1,479.5	3.2	29.6	90.21	-269.6	189.5	329.2	296.4	32.83	10.026	
1,600.0	1,598.7	1,578.7	1,578.7	3.5	31.6	92.31	-269.6	189.5	329.5	294.4	35.06	9.397	
1,700.0	1,697.7	1,677.7	1,677.7	3.7	33.6	94.67	-269.6	189.5	330.3	293.0	37.30	8.855	
1,800.0	1,796.8	1,776.8	1,776.8	4.0	35.5	97.03	-269.6	189.5	331.7	292.2	39.55	8.388	
1,900.0	1,895.8	1,875.8	1,875.8	4.3	37.5	99.36	-269.6	189.5	333.7	291.9	41.81	7.982	
2,000.0	1,994.9	1,974.9	1,974.9	4.6	39.5	101.66	-269.6	189.5	336.3	292.2	44.07	7.630	
2,100.0	2,093.9	2,073.9	2,073.9	4.9	41.5	103.92	-269.6	189.5	339.3	293.0	46.34	7.323	
2,200.0	2,193.0	2,173.0	2,173.0	5.2	43.5	106.13	-269.6	189.5	342.9	294.3	48.60	7.056	
2,300.0	2,292.0	2,272.0	2,272.0	5.5	45.4	108.30	-269.6	189.5	347.1	296.2	50.87	6.823	
2,400.0	2,391.1	2,371.1	2,371.1	5.8	47.4	110.42	-269.6	189.5	351.7	298.5	53.13	6.619	
2,500.0	2,490.1	2,470.1	2,470.1	6.1	49.4	112.48	-269.6	189.5	356.8	301.4	55.39	6.441	
2,600.0	2,589.1	2,569.1	2,569.1	6.4	51.4	114.48	-269.6	189.5	362.3	304.7	57.65	6.284	
2,700.0	2,688.2	2,668.2	2,668.2	6.8	53.4	116.42	-269.6	189.5	368.3	308.4	59.91	6.147	
2,800.0	2,787.2	2,767.2	2,767.2	7.1	55.3	118.30	-269.6	189.5	374.7	312.5	62.16	6.028	
2,900.0	2,886.3	2,866.3	2,866.3	7.4	57.3	120.11	-269.6	189.5	381.5	317.0	64.41	5.923	
3,000.0	2,985.3	2,965.3	2,965.3	7.7	59.3	121.85	-269.6	189.5	388.6	322.0	66.65	5.831	
3,100.0	3,084.4	3,064.4	3,064.4	8.1	61.3	123.54	-269.6	189.5	396.1	327.2	68.89	5.750	
3,200.0	3,183.4	3,163.4	3,163.4	8.4	63.3	125.16	-269.6	189.5	403.9	332.8	71.12	5.679	
3,300.0	3,282.4	3,262.4	3,262.4	8.7	65.2	126.72	-269.6	189.5	412.1	338.7	73.36	5.618	
3,400.0	3,381.5	3,361.5	3,361.5	9.0	67.2	128.22	-269.6	189.5	420.5	345.0	75.58	5.564	
3,500.0	3,480.5	3,460.5	3,460.5	9.4	69.2	129.65	-269.6	189.5	429.3	351.4	77.81	5.517	
3,600.0	3,579.6	3,559.6	3,559.6	9.7	71.2	131.04	-269.6	189.5	438.2	358.2	80.03	5.476	
3,700.0	3,678.6	3,658.6	3,658.6	10.0	73.2	132.36	-269.6	189.5	447.5	365.2	82.25	5.440	
3,800.0	3,777.7	3,757.7	3,757.7	10.4	75.2	133.63	-269.6	189.5	456.9	372.5	84.46	5.410	
3,900.0	3,876.7	3,856.7	3,856.7	10.7	77.1	134.85	-269.6	189.5	466.6	379.9	86.68	5.383	
4,000.0	3,975.8	3,955.8	3,955.8	11.0	79.1	136.02	-269.6	189.5	476.5	387.6	88.89	5.360	
4,100.0	4,074.8	4,054.8	4,054.8	11.4	81.1	137.15	-269.6	189.5	486.5	395.4	91.10	5.341	
4,200.0	4,173.8	4,153.8	4,153.8	11.7	83.1	138.23	-269.6	189.5	496.8	403.5	93.30	5.324	
4,300.0	4,272.9	4,252.9	4,252.9	12.0	85.1	139.26	-269.6	189.5	507.2	411.7	95.51	5.310	
4,400.0	4,371.9	4,351.9	4,351.9	12.4	87.0	140.25	-269.6	189.5	517.8	420.1	97.71	5.299	
4,500.0	4,471.0	4,451.0	4,451.0	12.7	89.0	141.20	-269.6	189.5	528.5	428.6	99.91	5.289	
4,600.0	4,570.0	4,550.0	4,550.0	13.0	91.0	142.12	-269.6	189.5	539.3	437.2	102.12	5.282	
4,700.0	4,669.1	4,649.1	4,649.1	13.4	93.0	143.00	-269.6	189.5	550.3	446.0	104.32	5.276	
4,800.0	4,768.1	4,748.1	4,748.1	13.7	95.0	143.84	-269.6	189.5	561.5	454.9	106.52	5.271	
4,900.0	4,867.1	4,847.1	4,847.1	14.1	96.9	144.65	-269.6	189.5	572.7	464.0	108.71	5.268	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
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 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #2 (9-16-14)	**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: 6990-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,966.2	4,946.2	4,946.2	14.4	98.9	145.43	-269.6	189.5	584.0	473.1	110.91	5.266	
5,100.0	5,065.2	5,045.2	5,045.2	14.7	100.9	146.19	-269.6	189.5	595.5	482.4	113.11	5.265	
5,200.0	5,164.3	5,144.3	5,144.3	15.1	102.9	146.91	-269.6	189.5	607.0	491.7	115.31	5.264	
5,300.0	5,263.3	5,243.3	5,243.3	15.4	104.9	147.60	-269.6	189.5	618.7	501.2	117.50	5.265	
5,400.0	5,362.4	5,342.4	5,342.4	15.7	106.8	148.27	-269.6	189.5	630.4	510.7	119.70	5.266	
5,500.0	5,461.5	5,441.5	5,441.5	16.0	108.8	148.96	-269.6	189.5	641.7	519.6	122.08	5.256	
5,600.0	5,561.0	5,541.0	5,541.0	16.3	110.8	149.50	-269.6	189.5	650.4	525.9	124.50	5.224	
5,700.0	5,660.8	5,640.8	5,640.8	16.5	112.8	149.85	-269.6	189.5	656.1	529.2	126.83	5.173	
5,800.0	5,760.7	5,740.7	5,740.7	16.6	114.8	150.02	-269.6	189.5	658.8	529.7	129.06	5.104	
5,900.0	5,860.7	5,840.7	5,840.7	16.8	116.8	-152.55	-269.6	189.5	659.0	527.8	131.23	5.022	
6,000.0	5,960.7	5,940.7	5,940.7	16.9	118.8	27.51	-269.6	189.5	658.3	525.0	133.27	4.940	
6,100.0	6,060.0	6,040.0	6,040.0	17.0	120.8	28.31	-269.6	189.5	648.5	514.7	133.76	4.848	
6,200.0	6,157.0	6,137.0	6,137.0	17.1	122.7	30.14	-269.6	189.5	627.5	494.9	132.54	4.734	
6,300.0	6,250.1	6,230.1	6,230.1	17.0	124.6	33.21	-269.6	189.5	595.9	465.8	130.08	4.581	
6,400.0	6,337.6	6,317.6	6,317.6	17.0	126.4	37.84	-269.6	189.5	554.9	427.5	127.44	4.354	
6,500.0	6,418.1	6,398.1	6,398.1	16.9	128.0	44.44	-269.6	189.5	506.4	380.0	126.42	4.006	
6,600.0	6,490.1	6,470.1	6,470.1	16.9	129.4	53.30	-269.6	189.5	452.9	323.9	129.06	3.509	
6,700.0	6,552.5	6,532.5	6,532.5	16.9	130.7	64.11	-269.6	189.5	398.5	262.9	135.59	2.939	
6,800.0	6,604.2	6,584.2	6,584.2	16.9	131.7	75.38	-269.6	189.5	349.3	206.4	142.90	2.444	
6,900.0	6,644.3	6,624.3	6,624.3	17.2	132.5	84.83	-269.6	189.5	314.4	166.9	147.49	2.132	
6,984.4	6,668.5	6,648.5	6,648.5	17.6	133.0	90.00	-269.6	189.5	303.8	154.7	149.17	2.037	CC, ES, SF
7,000.0	6,672.1	6,652.1	6,652.1	17.7	133.0	90.62	-269.6	189.5	304.2	154.9	149.36	2.037	
7,100.0	6,687.1	6,667.1	6,667.1	18.4	133.3	91.83	-269.6	189.5	324.5	174.0	150.50	2.156	
7,200.0	6,689.9	6,669.9	6,669.9	19.4	133.4	90.01	-269.6	189.5	371.6	220.0	151.60	2.451	
7,300.0	6,689.9	6,669.9	6,669.9	20.5	133.4	90.01	-269.6	189.5	436.9	284.1	152.76	2.860	
7,400.0	6,689.9	6,669.9	6,669.9	21.7	133.4	90.01	-269.6	189.5	513.5	359.5	154.03	3.334	
7,500.0	6,689.9	6,669.9	6,669.9	23.0	133.4	90.02	-269.6	189.5	597.0	441.6	155.39	3.842	
7,600.0	6,689.9	6,669.9	6,669.9	24.4	133.4	90.02	-269.6	189.5	685.0	528.2	156.84	4.368	
7,700.0	6,689.9	6,669.9	6,669.9	25.9	133.4	90.02	-269.6	189.5	775.9	617.6	158.35	4.900	
7,800.0	6,690.0	6,670.0	6,670.0	27.4	133.4	90.03	-269.6	189.5	868.8	708.9	159.91	5.433	
7,900.0	6,690.0	6,670.0	6,670.0	29.0	133.4	90.03	-269.6	189.5	963.1	801.6	161.51	5.963	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
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 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #2 (9-16-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - Hendricks 33-1 (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 6918-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
12,700.0	6,690.8	6,713.8	6,713.8	117.2	134.3	89.97	-6,896.4	211.8	955.3	704.0	251.23	3.802	
12,800.0	6,690.8	6,713.8	6,713.8	119.1	134.3	89.97	-6,896.4	211.8	860.2	607.1	253.14	3.398	
12,900.0	6,690.9	6,713.9	6,713.9	121.0	134.3	89.97	-6,896.4	211.8	766.4	511.4	255.04	3.005	
13,000.0	6,690.9	6,713.9	6,713.9	122.9	134.3	89.98	-6,896.4	211.8	674.4	417.5	256.95	2.625	
13,100.0	6,690.9	6,713.9	6,713.9	124.8	134.3	89.98	-6,896.4	211.8	585.0	326.2	258.86	2.260	
13,200.0	6,690.9	6,713.9	6,713.9	126.7	134.3	89.99	-6,896.4	211.8	499.7	238.9	260.76	1.916	
13,300.0	6,690.9	6,713.9	6,713.9	128.6	134.3	89.99	-6,896.4	211.8	420.8	158.2	262.67	1.602	
13,400.0	6,690.9	6,713.9	6,713.9	130.5	134.3	89.99	-6,896.4	211.8	352.9	88.3	264.58	1.334	Level 3
13,500.0	6,691.0	6,714.0	6,714.0	132.4	134.3	90.00	-6,896.4	211.8	303.3	36.8	266.49	1.138	Level 2
13,600.0	6,691.0	6,714.0	6,714.0	134.3	134.3	90.00	-6,896.4	211.8	281.8	13.4	268.40	1.050	Level 2
13,612.9	6,691.0	6,714.0	6,714.0	134.6	134.3	90.00	-6,896.4	211.8	281.5	12.8	268.64	1.048	Level 2, CC, ES, SF
13,700.0	6,691.0	6,714.0	6,714.0	136.2	134.3	90.00	-6,896.4	211.8	294.7	24.4	270.31	1.090	Level 2
13,741.3	6,691.0	6,714.0	6,714.0	137.0	134.3	90.00	-6,896.4	211.8	309.4	38.3	271.09	1.141	Level 2

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
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 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #2 (9-16-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - Hendricks 33-3 (Exist) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 100-NS-GYRO-MS

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
11,100.0	6,690.5	6,674.5	6,672.3	86.9	13.3	86.57	-5,223.4	52.8	948.7	849.1	99.58	9.527	
11,200.0	6,690.6	6,674.6	6,672.4	88.8	13.3	86.59	-5,223.4	52.8	861.4	760.0	101.47	8.490	
11,300.0	6,690.6	6,674.7	6,672.5	90.7	13.3	86.60	-5,223.4	52.8	777.2	673.9	103.36	7.519	
11,400.0	6,690.6	6,674.8	6,672.7	92.5	13.3	86.62	-5,223.4	52.8	697.2	592.0	105.26	6.624	
11,500.0	6,690.6	6,675.0	6,672.8	94.4	13.3	86.64	-5,223.4	52.8	623.0	515.9	107.15	5.814	
11,600.0	6,690.6	6,675.1	6,672.9	96.3	13.3	86.65	-5,223.4	52.8	557.0	447.9	109.05	5.107	
11,700.0	6,690.6	6,675.2	6,673.1	98.2	13.3	86.67	-5,223.4	52.8	502.2	391.3	110.95	4.527	
11,800.0	6,690.7	6,675.4	6,673.2	100.1	13.3	86.69	-5,223.4	52.8	462.9	350.0	112.85	4.102	
11,900.0	6,690.7	6,675.5	6,673.3	102.0	13.3	86.71	-5,223.4	52.8	443.1	328.3	114.74	3.861	
11,939.8	6,690.7	6,675.6	6,673.4	102.8	13.3	86.71	-5,223.4	52.7	441.3	325.8	115.50	3.820	CC, ES
12,000.0	6,690.7	6,675.7	6,673.5	103.9	13.3	86.72	-5,223.4	52.7	445.4	328.7	116.65	3.818	SF
12,100.0	6,690.7	6,675.8	6,673.6	105.8	13.3	86.74	-5,223.4	52.7	469.4	350.9	118.55	3.960	
12,200.0	6,690.7	6,676.0	6,673.8	107.7	13.3	86.76	-5,223.4	52.7	512.3	391.8	120.45	4.253	
12,300.0	6,690.7	6,676.1	6,673.9	109.6	13.3	86.78	-5,223.4	52.7	569.6	447.3	122.35	4.655	
12,400.0	6,690.8	6,676.3	6,674.1	111.5	13.3	86.80	-5,223.4	52.7	637.6	513.3	124.25	5.131	
12,500.0	6,690.8	6,676.4	6,674.2	113.4	13.3	86.82	-5,223.4	52.7	713.1	586.9	126.16	5.652	
12,600.0	6,690.8	6,676.6	6,674.4	115.3	13.3	86.84	-5,223.4	52.7	794.1	666.0	128.06	6.201	
12,700.0	6,690.8	6,676.7	6,674.5	117.2	13.3	86.86	-5,223.4	52.7	879.0	749.0	129.97	6.763	
12,800.0	6,690.8	6,676.9	6,674.7	119.1	13.3	86.89	-5,223.4	52.7	966.8	834.9	131.88	7.331	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
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 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #2 (9-16-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - P & A Farms 28-1 (Exist) - Wellbore #1 - Wellbore

Offset Site Error: 0.0 ft

Survey Program: 6950-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
9,900.0	6,690.3	6,708.3	6,708.3	64.4	134.2	89.98	-4,029.3	105.9	930.2	732.1	198.15	4.695	
10,000.0	6,690.3	6,708.3	6,708.3	66.3	134.2	89.98	-4,029.3	105.9	840.4	640.3	200.02	4.201	
10,100.0	6,690.4	6,708.4	6,708.4	68.1	134.2	89.98	-4,029.3	105.9	753.0	551.1	201.89	3.730	
10,200.0	6,690.4	6,708.4	6,708.4	70.0	134.2	89.99	-4,029.3	105.9	669.3	465.5	203.77	3.284	
10,300.0	6,690.4	6,708.4	6,708.4	71.9	134.2	89.99	-4,029.3	105.9	590.6	384.9	205.64	2.872	
10,400.0	6,690.4	6,708.4	6,708.4	73.7	134.2	89.99	-4,029.3	105.9	519.2	311.7	207.52	2.502	
10,500.0	6,690.4	6,708.4	6,708.4	75.6	134.2	89.99	-4,029.3	105.9	458.8	249.4	209.41	2.191	
10,600.0	6,690.5	6,708.5	6,708.5	77.5	134.2	90.00	-4,029.3	105.9	413.9	202.6	211.29	1.959	
10,700.0	6,690.5	6,708.5	6,708.5	79.4	134.2	90.00	-4,029.3	105.9	390.1	176.9	213.18	1.830	
10,745.7	6,690.5	6,708.5	6,708.5	80.2	134.2	90.00	-4,029.3	105.9	387.4	173.4	214.04	1.810	CC, ES, SF
10,800.0	6,690.5	6,708.5	6,708.5	81.2	134.2	90.00	-4,029.3	105.9	391.2	176.1	215.06	1.819	
10,900.0	6,690.5	6,708.5	6,708.5	83.1	134.2	90.00	-4,029.3	105.9	417.0	200.0	216.95	1.922	
11,000.0	6,690.5	6,708.5	6,708.5	85.0	134.2	90.01	-4,029.3	105.9	463.4	244.5	218.84	2.117	
11,100.0	6,690.5	6,708.5	6,708.5	86.9	134.2	90.01	-4,029.3	105.9	525.0	304.2	220.73	2.378	
11,200.0	6,690.6	6,708.6	6,708.6	88.8	134.2	90.01	-4,029.3	105.9	597.0	374.4	222.63	2.682	
11,300.0	6,690.6	6,708.6	6,708.6	90.7	134.2	90.01	-4,029.3	105.9	676.2	451.7	224.52	3.012	
11,400.0	6,690.6	6,708.6	6,708.6	92.5	134.2	90.02	-4,029.3	105.9	760.4	533.9	226.42	3.358	
11,500.0	6,690.6	6,708.6	6,708.6	94.4	134.2	90.02	-4,029.3	105.9	847.9	619.6	228.31	3.714	
11,600.0	6,690.6	6,708.6	6,708.6	96.3	134.2	90.02	-4,029.3	105.9	938.0	707.8	230.21	4.075	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
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 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #2 (9-16-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells - Chesnut Pads - Sec.28-T5N-R64W - P & A Farms 28-2 (Exist) - Wellbore #1 - Wellbore

Offset Site Error: 0.0 ft

Survey Program: 6980-UNKNOWN

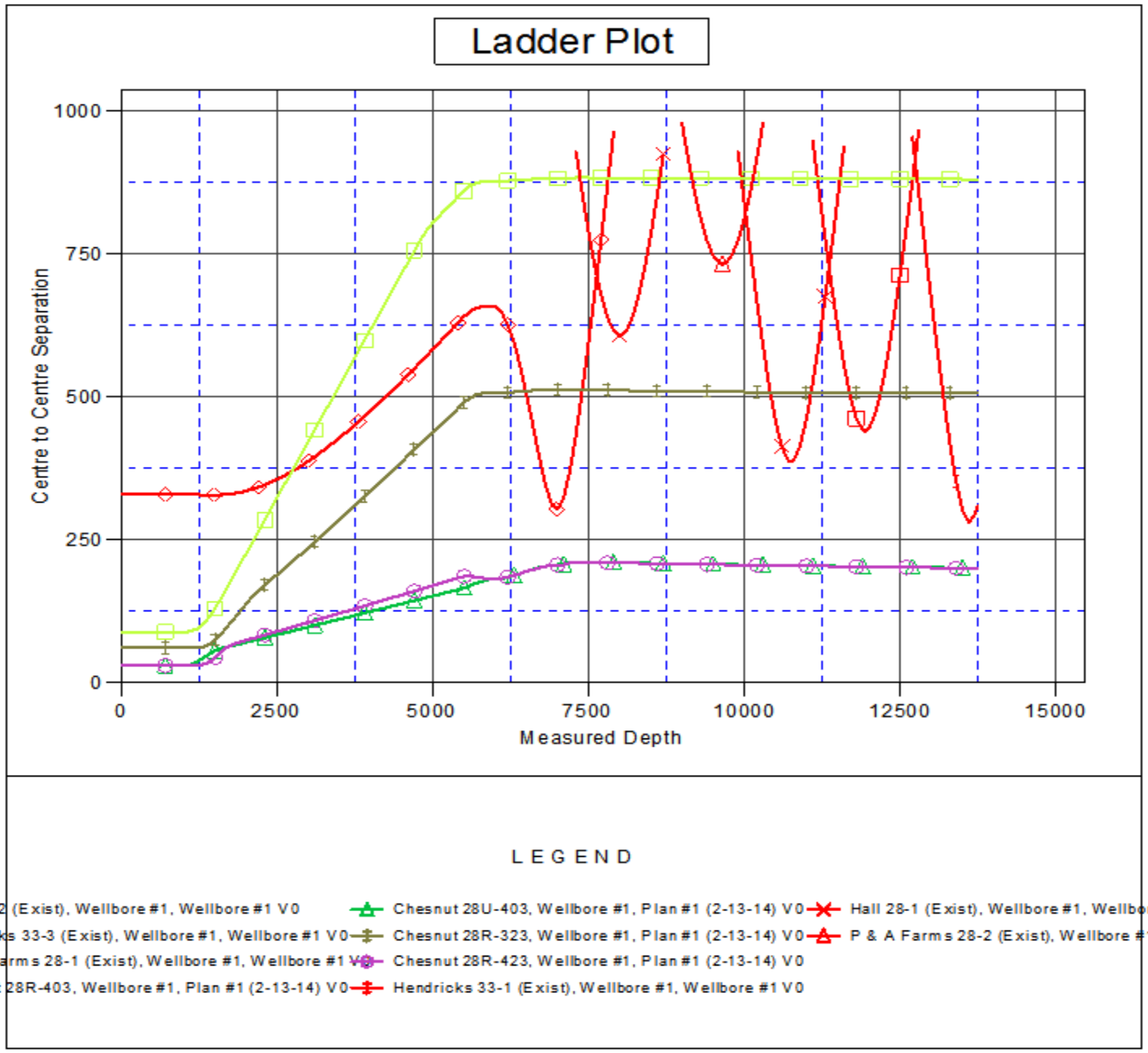
Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
9,000.0	6,690.2	6,689.2	6,689.2	47.9	133.8	89.99	-2,932.7	-239.6	979.1	798.0	181.13	5.405	
9,100.0	6,690.2	6,689.2	6,689.2	49.7	133.8	89.99	-2,932.7	-239.6	915.8	732.9	182.96	5.006	
9,200.0	6,690.2	6,689.2	6,689.2	51.5	133.8	89.99	-2,932.7	-239.6	859.6	674.8	184.79	4.652	
9,300.0	6,690.2	6,689.2	6,689.2	53.3	133.8	90.00	-2,932.7	-239.6	811.9	625.2	186.63	4.350	
9,400.0	6,690.2	6,689.2	6,689.2	55.2	133.8	90.00	-2,932.7	-239.6	774.1	585.7	188.48	4.107	
9,500.0	6,690.3	6,689.3	6,689.3	57.0	133.8	90.00	-2,932.7	-239.6	748.0	557.6	190.33	3.930	
9,600.0	6,690.3	6,689.3	6,689.3	58.9	133.8	90.00	-2,932.7	-239.6	734.6	542.4	192.18	3.822	
9,649.2	6,690.3	6,689.3	6,689.3	59.8	133.8	90.00	-2,932.7	-239.6	732.9	539.8	193.10	3.796	CC, ES
9,700.0	6,690.3	6,689.3	6,689.3	60.7	133.8	90.00	-2,932.7	-239.6	734.7	540.7	194.04	3.786	SF
9,800.0	6,690.3	6,689.3	6,689.3	62.5	133.8	90.00	-2,932.7	-239.6	748.3	552.4	195.90	3.820	
9,900.0	6,690.3	6,689.3	6,689.3	64.4	133.8	90.00	-2,932.7	-239.6	774.7	576.9	197.77	3.917	
10,000.0	6,690.3	6,689.3	6,689.3	66.3	133.8	90.00	-2,932.7	-239.6	812.6	612.9	199.64	4.070	
10,100.0	6,690.4	6,689.4	6,689.4	68.1	133.8	90.01	-2,932.7	-239.6	860.5	659.0	201.51	4.270	
10,200.0	6,690.4	6,689.4	6,689.4	70.0	133.8	90.01	-2,932.7	-239.6	916.9	713.5	203.39	4.508	
10,300.0	6,690.4	6,689.4	6,689.4	71.9	133.8	90.01	-2,932.7	-239.6	980.2	774.9	205.27	4.775	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Chesnut 28U-243
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 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #2 (9-16-14)	**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 28U-243
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 28U-243
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 28U-243	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #2 (9-16-14)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4635.0ft (RKB - 15')	Coordinates are relative to: Chesnut 28U-243
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is -105.500000 °	Grid Convergence at Surface is: 0.61°