

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Gaddis 36E-323**

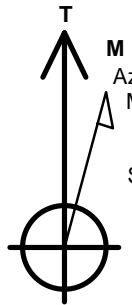
Surface Location: Gaddis Pad Sec.36-T4N-R68W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 5059.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1344049.60	3151647.88	40.276540	-104.956490	

Ensign Rig #119 - RKB -23' WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 310'FNL, 1180'FWL	9.0	0.0	0.0	Point
BHL 500'FSL, 585'FWL	7240.0	-4488.2	-600.0	Point



Azimuths to True North
Magnetic North: 8.64°

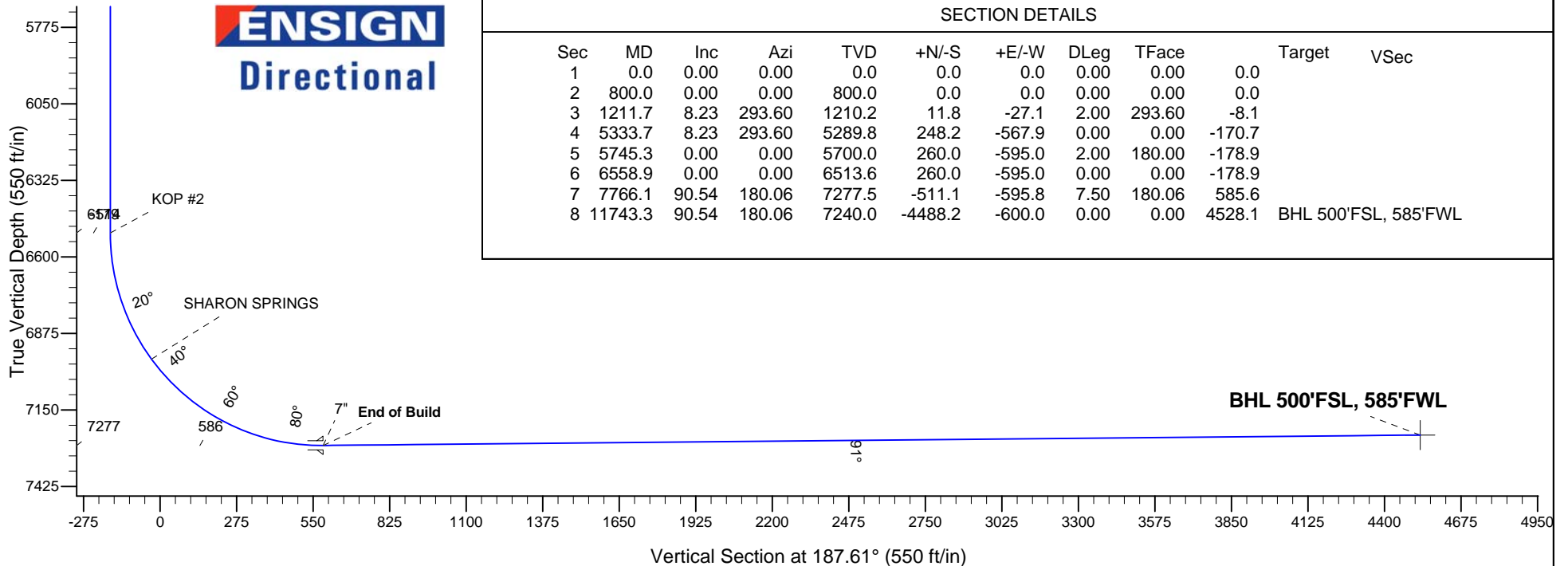
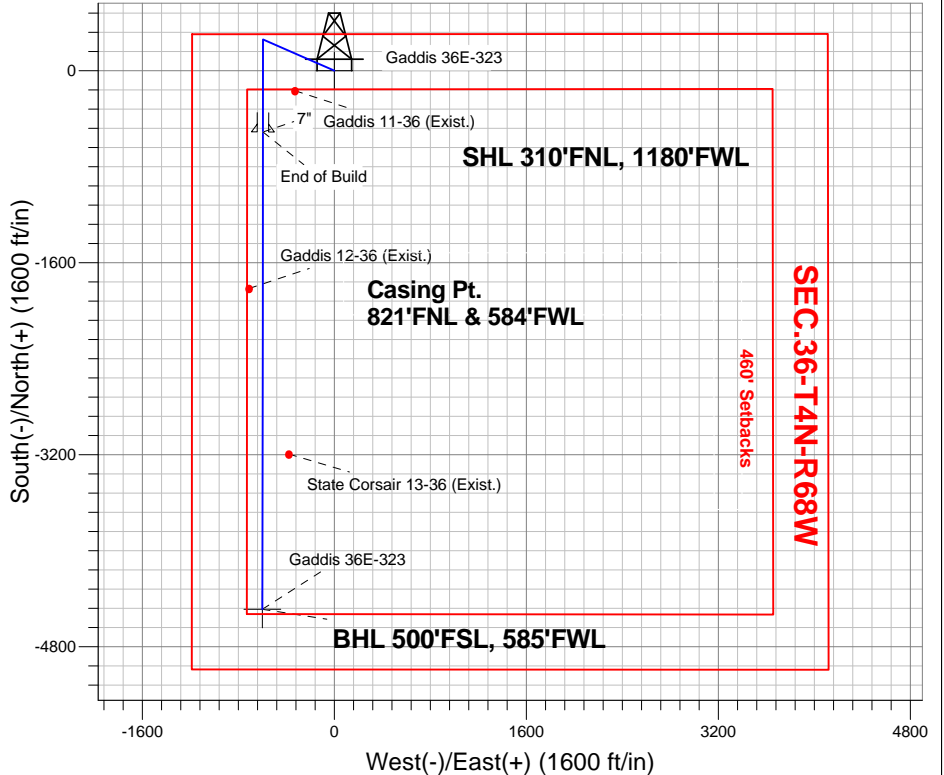
Magnetic Field
Strength: 52798.0snT
Dip Angle: 66.84°
Date: 10/16/2013
Model: IGRF2010

ANNOTATIONS

TVD	MD	Annotation
800.0	800.0	KOP #1
6513.6	6558.9	KOP #2
7277.5	7766.1	End of Build

Gaddis Pad Sec.36-T4N-R68W
Gaddis 36E-323
Plan #4 (10-16-13)
9:51, October 21 2013

South(-)/North(+) (1600 ft/in)



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	Target	VSec
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.0	
3	1211.7	8.23	293.60	1210.2	11.8	-27.1	2.00	293.60	-8.1	
4	5333.7	8.23	293.60	5289.8	248.2	-567.9	0.00	0.00	-170.7	
5	5745.3	0.00	0.00	5700.0	260.0	-595.0	2.00	180.00	-178.9	
6	6558.9	0.00	0.00	6513.6	260.0	-595.0	0.00	0.00	-178.9	
7	7766.1	90.54	180.06	7277.5	-511.1	-595.8	7.50	180.06	585.6	
8	11743.3	90.54	180.06	7240.0	-4488.2	-600.0	0.00	0.00	4528.1	BHL 500'FSL, 585'FWL



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.36-T4N-R68W

Gaddis Pad Sec.36-T4N-R68W

Gaddis 36E-323

Wellbore #1

Plan: Plan #4 (10-16-13)

Standard Planning Report

21 October, 2013

Database:	Landmark	Local Co-ordinate Reference:	Well Gaddis 36E-323
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Project:	SEC.36-T4N-R68W	MD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Site:	Gaddis Pad Sec.36-T4N-R68W	North Reference:	True
Well:	Gaddis 36E-323	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #4 (10-16-13)		

Project	SEC.36-T4N-R68W, 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						Gaddis Pad Sec.36-T4N-R68W											
Site Position:						Northing:			1,344,049.99ft			Latitude:			40.276540		
From:			Lat/Long			Easting:			3,151,709.26ft			Longitude:			-104.956270		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.35 °		

Well	Gaddis 36E-323					
Well Position	+N-S	0.0 ft	Northing:	1,344,049.60 ft	Latitude:	40.276540
	+E-W	-61.4 ft	Easting:	3,151,647.88 ft	Longitude:	-104.956490
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,059.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/16/2013	8.64	66.84	52,798

Design	Plan #4 (10-16-13)			
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	187.61

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,211.7	8.23	293.60	1,210.2	11.8	-27.1	2.00	2.00	0.00	293.60	
5,333.7	8.23	293.60	5,289.8	248.2	-567.9	0.00	0.00	0.00	0.00	
5,745.3	0.00	0.00	5,700.0	260.0	-595.0	2.00	-2.00	0.00	180.00	
6,558.9	0.00	0.00	6,513.6	260.0	-595.0	0.00	0.00	0.00	0.00	
7,766.1	90.54	180.06	7,277.5	-511.1	-595.8	7.50	7.50	0.00	180.06	
11,743.3	90.54	180.06	7,240.0	-4,488.2	-600.0	0.00	0.00	0.00	0.00	BHL 500'FSL, 585°F

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Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Project:	SEC.36-T4N-R68W	MD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Site:	Gaddis Pad Sec.36-T4N-R68W	North Reference:	True
Well:	Gaddis 36E-323	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #4 (10-16-13)		

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
9.0	0.00	0.00	9.0	0.0	0.0	0.0	0.00	0.00	0.00
SHL 310'FNL, 1180'FWL									
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
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
KOP #1									
900.0	2.00	293.60	900.0	0.7	-1.6	-0.5	2.00	2.00	0.00
1,000.0	4.00	293.60	999.8	2.8	-6.4	-1.9	2.00	2.00	0.00
1,100.0	6.00	293.60	1,099.5	6.3	-14.4	-4.3	2.00	2.00	0.00
1,200.0	8.00	293.60	1,198.7	11.2	-25.5	-7.7	2.00	2.00	0.00
1,211.7	8.23	293.60	1,210.2	11.8	-27.1	-8.1	2.00	2.00	0.00
1,300.0	8.23	293.60	1,297.7	16.9	-38.6	-11.6	0.00	0.00	0.00
1,400.0	8.23	293.60	1,396.6	22.6	-51.8	-15.6	0.00	0.00	0.00
1,500.0	8.23	293.60	1,495.6	28.4	-64.9	-19.5	0.00	0.00	0.00
1,600.0	8.23	293.60	1,594.6	34.1	-78.0	-23.5	0.00	0.00	0.00
1,700.0	8.23	293.60	1,693.6	39.8	-91.1	-27.4	0.00	0.00	0.00
1,800.0	8.23	293.60	1,792.5	45.6	-104.3	-31.3	0.00	0.00	0.00
1,900.0	8.23	293.60	1,891.5	51.3	-117.4	-35.3	0.00	0.00	0.00
2,000.0	8.23	293.60	1,990.5	57.0	-130.5	-39.2	0.00	0.00	0.00
2,100.0	8.23	293.60	2,089.4	62.8	-143.6	-43.2	0.00	0.00	0.00
2,200.0	8.23	293.60	2,188.4	68.5	-156.7	-47.1	0.00	0.00	0.00
2,300.0	8.23	293.60	2,287.4	74.2	-169.9	-51.1	0.00	0.00	0.00
2,400.0	8.23	293.60	2,386.3	80.0	-183.0	-55.0	0.00	0.00	0.00
2,500.0	8.23	293.60	2,485.3	85.7	-196.1	-59.0	0.00	0.00	0.00
2,600.0	8.23	293.60	2,584.3	91.4	-209.2	-62.9	0.00	0.00	0.00
2,700.0	8.23	293.60	2,683.2	97.2	-222.4	-66.8	0.00	0.00	0.00
2,800.0	8.23	293.60	2,782.2	102.9	-235.5	-70.8	0.00	0.00	0.00
2,900.0	8.23	293.60	2,881.2	108.6	-248.6	-74.7	0.00	0.00	0.00
3,000.0	8.23	293.60	2,980.2	114.4	-261.7	-78.7	0.00	0.00	0.00
3,100.0	8.23	293.60	3,079.1	120.1	-274.8	-82.6	0.00	0.00	0.00
3,200.0	8.23	293.60	3,178.1	125.8	-288.0	-86.6	0.00	0.00	0.00
3,300.0	8.23	293.60	3,277.1	131.6	-301.1	-90.5	0.00	0.00	0.00
3,400.0	8.23	293.60	3,376.0	137.3	-314.2	-94.5	0.00	0.00	0.00
3,500.0	8.23	293.60	3,475.0	143.0	-327.3	-98.4	0.00	0.00	0.00
3,600.0	8.23	293.60	3,574.0	148.8	-340.5	-102.3	0.00	0.00	0.00
3,676.8	8.23	293.60	3,650.0	153.2	-350.5	-105.4	0.00	0.00	0.00
PARKMAN									
3,700.0	8.23	293.60	3,672.9	154.5	-353.6	-106.3	0.00	0.00	0.00
3,800.0	8.23	293.60	3,771.9	160.2	-366.7	-110.2	0.00	0.00	0.00
3,900.0	8.23	293.60	3,870.9	166.0	-379.8	-114.2	0.00	0.00	0.00
4,000.0	8.23	293.60	3,969.8	171.7	-392.9	-118.1	0.00	0.00	0.00
4,100.0	8.23	293.60	4,068.8	177.4	-406.1	-122.1	0.00	0.00	0.00
4,200.0	8.23	293.60	4,167.8	183.2	-419.2	-126.0	0.00	0.00	0.00
4,212.3	8.23	293.60	4,180.0	183.9	-420.8	-126.5	0.00	0.00	0.00
SUSSEX									
4,300.0	8.23	293.60	4,266.8	188.9	-432.3	-130.0	0.00	0.00	0.00

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Project:	SEC.36-T4N-R68W	MD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Site:	Gaddis Pad Sec.36-T4N-R68W	North Reference:	True
Well:	Gaddis 36E-323	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #4 (10-16-13)		

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)
4,400.0	8.23	293.60	4,365.7	194.6	-445.4	-133.9	0.00	0.00	0.00
4,500.0	8.23	293.60	4,464.7	200.4	-458.6	-137.8	0.00	0.00	0.00
4,600.0	8.23	293.60	4,563.7	206.1	-471.7	-141.8	0.00	0.00	0.00
4,700.0	8.23	293.60	4,662.6	211.8	-484.8	-145.7	0.00	0.00	0.00
4,727.7	8.23	293.60	4,690.0	213.4	-488.4	-146.8	0.00	0.00	0.00
SHANNON									
4,800.0	8.23	293.60	4,761.6	217.6	-497.9	-149.7	0.00	0.00	0.00
4,900.0	8.23	293.60	4,860.6	223.3	-511.0	-153.6	0.00	0.00	0.00
5,000.0	8.23	293.60	4,959.5	229.0	-524.2	-157.6	0.00	0.00	0.00
5,100.0	8.23	293.60	5,058.5	234.8	-537.3	-161.5	0.00	0.00	0.00
5,200.0	8.23	293.60	5,157.5	240.5	-550.4	-165.5	0.00	0.00	0.00
5,300.0	8.23	293.60	5,256.4	246.2	-563.5	-169.4	0.00	0.00	0.00
5,333.7	8.23	293.60	5,289.8	248.2	-567.9	-170.7	0.00	0.00	0.00
5,400.0	6.91	293.60	5,355.5	251.7	-576.0	-173.1	2.00	-2.00	0.00
5,500.0	4.91	293.60	5,455.0	255.8	-585.4	-176.0	2.00	-2.00	0.00
5,600.0	2.91	293.60	5,554.7	258.5	-591.6	-177.8	2.00	-2.00	0.00
5,700.0	0.91	293.60	5,654.7	259.9	-594.7	-178.8	2.00	-2.00	0.00
5,745.3	0.00	0.00	5,700.0	260.0	-595.0	-178.9	2.00	-2.00	0.00
5,800.0	0.00	0.00	5,754.7	260.0	-595.0	-178.9	0.00	0.00	0.00
5,900.0	0.00	0.00	5,854.7	260.0	-595.0	-178.9	0.00	0.00	0.00
6,000.0	0.00	0.00	5,954.7	260.0	-595.0	-178.9	0.00	0.00	0.00
6,100.0	0.00	0.00	6,054.7	260.0	-595.0	-178.9	0.00	0.00	0.00
6,200.0	0.00	0.00	6,154.7	260.0	-595.0	-178.9	0.00	0.00	0.00
6,300.0	0.00	0.00	6,254.7	260.0	-595.0	-178.9	0.00	0.00	0.00
6,400.0	0.00	0.00	6,354.7	260.0	-595.0	-178.9	0.00	0.00	0.00
6,500.0	0.00	0.00	6,454.7	260.0	-595.0	-178.9	0.00	0.00	0.00
6,558.9	0.00	0.00	6,513.6	260.0	-595.0	-178.9	0.00	0.00	0.00
KOP #2									
6,600.0	3.08	180.06	6,554.7	258.9	-595.0	-177.8	7.50	7.50	0.00
6,700.0	10.58	180.06	6,653.9	247.0	-595.0	-166.0	7.50	7.50	0.00
6,800.0	18.08	180.06	6,750.7	222.3	-595.0	-141.5	7.50	7.50	0.00
6,900.0	25.58	180.06	6,843.5	185.1	-595.1	-104.6	7.50	7.50	0.00
7,000.0	33.08	180.06	6,930.6	136.1	-595.1	-56.1	7.50	7.50	0.00
7,044.3	36.41	180.06	6,967.0	110.9	-595.2	-31.0	7.50	7.50	0.00
SHARON SPRINGS									
7,100.0	40.58	180.06	7,010.6	76.2	-595.2	3.3	7.50	7.50	0.00
7,200.0	48.08	180.06	7,082.0	6.4	-595.3	72.5	7.50	7.50	0.00
7,300.0	55.58	180.06	7,143.8	-72.2	-595.4	150.4	7.50	7.50	0.00
7,400.0	63.08	180.06	7,194.8	-158.1	-595.4	235.6	7.50	7.50	0.00
7,500.0	70.58	180.06	7,234.1	-250.0	-595.5	326.7	7.50	7.50	0.00
7,600.0	78.08	180.06	7,261.1	-346.2	-595.6	422.1	7.50	7.50	0.00
7,700.0	85.58	180.06	7,275.2	-445.1	-595.7	520.1	7.50	7.50	0.00
7,766.1	90.54	180.06	7,277.5	-511.2	-595.8	585.6	7.50	7.50	0.00
End of Build - 7"									
7,800.0	90.54	180.06	7,277.2	-545.1	-595.9	619.2	0.00	0.00	0.00
7,900.0	90.54	180.06	7,276.2	-645.1	-596.0	718.3	0.00	0.00	0.00
8,000.0	90.54	180.06	7,275.3	-745.0	-596.1	817.5	0.00	0.00	0.00
8,100.0	90.54	180.06	7,274.3	-845.0	-596.2	916.6	0.00	0.00	0.00
8,200.0	90.54	180.06	7,273.4	-945.0	-596.3	1,015.7	0.00	0.00	0.00
8,300.0	90.54	180.06	7,272.5	-1,045.0	-596.4	1,114.8	0.00	0.00	0.00
8,400.0	90.54	180.06	7,271.5	-1,145.0	-596.5	1,214.0	0.00	0.00	0.00

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Site:	Gaddis Pad Sec.36-T4N-R68W	North Reference:	True
Well:	Gaddis 36E-323	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #4 (10-16-13)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,500.0	90.54	180.06	7,270.6	-1,245.0	-596.6	1,313.1	0.00	0.00	0.00
8,600.0	90.54	180.06	7,269.6	-1,345.0	-596.7	1,412.2	0.00	0.00	0.00
8,700.0	90.54	180.06	7,268.7	-1,445.0	-596.8	1,511.4	0.00	0.00	0.00
8,800.0	90.54	180.06	7,267.7	-1,545.0	-596.9	1,610.5	0.00	0.00	0.00
8,900.0	90.54	180.06	7,266.8	-1,645.0	-597.0	1,709.6	0.00	0.00	0.00
9,000.0	90.54	180.06	7,265.9	-1,745.0	-597.1	1,808.7	0.00	0.00	0.00
9,100.0	90.54	180.06	7,264.9	-1,845.0	-597.2	1,907.9	0.00	0.00	0.00
9,200.0	90.54	180.06	7,264.0	-1,945.0	-597.3	2,007.0	0.00	0.00	0.00
9,300.0	90.54	180.06	7,263.0	-2,045.0	-597.4	2,106.1	0.00	0.00	0.00
9,400.0	90.54	180.06	7,262.1	-2,145.0	-597.5	2,205.2	0.00	0.00	0.00
9,500.0	90.54	180.06	7,261.1	-2,245.0	-597.7	2,304.4	0.00	0.00	0.00
9,600.0	90.54	180.06	7,260.2	-2,345.0	-597.8	2,403.5	0.00	0.00	0.00
9,700.0	90.54	180.06	7,259.3	-2,445.0	-597.9	2,502.6	0.00	0.00	0.00
9,800.0	90.54	180.06	7,258.3	-2,545.0	-598.0	2,601.8	0.00	0.00	0.00
9,900.0	90.54	180.06	7,257.4	-2,645.0	-598.1	2,700.9	0.00	0.00	0.00
10,000.0	90.54	180.06	7,256.4	-2,745.0	-598.2	2,800.0	0.00	0.00	0.00
10,100.0	90.54	180.06	7,255.5	-2,845.0	-598.3	2,899.1	0.00	0.00	0.00
10,200.0	90.54	180.06	7,254.5	-2,944.9	-598.4	2,998.3	0.00	0.00	0.00
10,300.0	90.54	180.06	7,253.6	-3,044.9	-598.5	3,097.4	0.00	0.00	0.00
10,400.0	90.54	180.06	7,252.7	-3,144.9	-598.6	3,196.5	0.00	0.00	0.00
10,500.0	90.54	180.06	7,251.7	-3,244.9	-598.7	3,295.7	0.00	0.00	0.00
10,600.0	90.54	180.06	7,250.8	-3,344.9	-598.8	3,394.8	0.00	0.00	0.00
10,700.0	90.54	180.06	7,249.8	-3,444.9	-598.9	3,493.9	0.00	0.00	0.00
10,800.0	90.54	180.06	7,248.9	-3,544.9	-599.0	3,593.0	0.00	0.00	0.00
10,900.0	90.54	180.06	7,247.9	-3,644.9	-599.1	3,692.2	0.00	0.00	0.00
11,000.0	90.54	180.06	7,247.0	-3,744.9	-599.2	3,791.3	0.00	0.00	0.00
11,100.0	90.54	180.06	7,246.1	-3,844.9	-599.3	3,890.4	0.00	0.00	0.00
11,200.0	90.54	180.06	7,245.1	-3,944.9	-599.4	3,989.5	0.00	0.00	0.00
11,300.0	90.54	180.06	7,244.2	-4,044.9	-599.6	4,088.7	0.00	0.00	0.00
11,400.0	90.54	180.06	7,243.2	-4,144.9	-599.7	4,187.8	0.00	0.00	0.00
11,500.0	90.54	180.06	7,242.3	-4,244.9	-599.8	4,286.9	0.00	0.00	0.00
11,600.0	90.54	180.06	7,241.4	-4,344.9	-599.9	4,386.1	0.00	0.00	0.00
11,700.0	90.54	180.06	7,240.4	-4,444.9	-600.0	4,485.2	0.00	0.00	0.00
11,743.3	90.54	180.06	7,240.0	-4,488.2	-600.0	4,528.1	0.00	0.00	0.00
BHL 500'FSL, 585'FWL									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,766.1	7,277.5	7"	7	8-3/4

Database:	Landmark	Local Co-ordinate Reference:	Well Gaddis 36E-323
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Project:	SEC.36-T4N-R68W	MD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Site:	Gaddis Pad Sec.36-T4N-R68W	North Reference:	True
Well:	Gaddis 36E-323	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #4 (10-16-13)		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,676.8	3,650.0	PARKMAN		0.00		
4,212.3	4,180.0	SUSSEX		0.00		
4,727.7	4,690.0	SHANNON		0.00		
7,044.3	6,967.0	SHARON SPRINGS		0.00		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
800.0	800.0	0.0	0.0	KOP #1	
6,558.9	6,513.6	260.0	-595.0	KOP #2	
7,766.1	7,277.5	-511.2	-595.8	End of Build	



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.36-T4N-R68W

Gaddis Pad Sec.36-T4N-R68W

Gaddis 36E-323

Wellbore #1

Plan #4 (10-16-13)

Anticollision Report

21 October, 2013



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Gaddis 36E-323
Project:	SEC.36-T4N-R68W	TVD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	MD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Gaddis 36E-323	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 #4 (10-16-13)	Offset TVD Reference:	Offset Datum

Reference	Plan #4 (10-16-13)		
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 10/16/2013			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,743.3	Plan #4 (10-16-13) (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Gaddis Pad Sec.36-T4N-R68W						
Gaddis 11-36 (Exist.) - Wellbore #1 - Wellbore #1	7,410.2	7,189.3	266.2	105.8	1.660	CC, ES, SF
Gaddis 12-36 (Exist.) - Wellbore #1 - Wellbore #1	9,069.3	7,254.2	114.4	-69.8	0.621	Level 1, CC, ES, SF
Gaddis 36E-403 - Wellbore #1 - Plan #2 (10-16-13)	200.0	200.0	30.7	30.0	45.519	CC, ES
Gaddis 36E-403 - Wellbore #1 - Plan #2 (10-16-13)	11,743.3	11,904.3	456.9	289.6	2.731	SF
Gaddis 36J-243 - Wellbore #1 - Plan #2 (10-16-13)	800.0	799.0	30.7	27.3	9.110	CC, ES
Gaddis 36J-243 - Wellbore #1 - Plan #2 (10-16-13)	11,743.3	11,637.9	413.5	238.4	2.361	SF
Gaddis 36J-3034 /Codell Sidetrack - Wellbore #2 Codell	800.0	791.0	61.4	58.0	18.220	CC, ES
Gaddis 36J-3034 /Codell Sidetrack - Wellbore #2 Codell	11,743.3	11,803.2	625.2	453.4	3.640	SF
Gaddis 36J-3034 /Codell Sidetrack - Wellbore 1 Gaddis	800.0	799.0	61.4	58.0	18.220	CC, ES
Gaddis 36J-3034 /Codell Sidetrack - Wellbore 1 Gaddis	11,743.3	11,766.8	739.6	562.9	4.188	SF
State Corsair 13-36 (Exist.) - Wellbore #1 - Wellbore #1	10,449.8	7,215.2	219.1	10.6	1.051	Level 2, CC, ES, SF

Offset Design Gaddis Pad Sec.36-T4N-R68W - Gaddis 11-36 (Exist.) - Wellbore #1 - Wellbore #1											
Survey Program: 7300-UNKNOWN											
Reference Offset Semi Major Axis Distance											
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)
0.0	0.0	0.0	0.0	0.0	0.0	-116.97	-167.6	-329.3	369.6		
100.0	100.0	90.0	90.0	0.1	1.8	-116.97	-167.6	-329.3	369.4	367.5	1.91
200.0	200.0	190.0	190.0	0.3	3.8	-116.97	-167.6	-329.3	369.4	365.3	4.14
300.0	300.0	290.0	290.0	0.6	5.8	-116.97	-167.6	-329.3	369.4	363.1	6.36
400.0	400.0	390.0	390.0	0.8	7.8	-116.97	-167.6	-329.3	369.4	360.9	8.59
500.0	500.0	490.0	490.0	1.0	9.8	-116.97	-167.6	-329.3	369.4	358.6	10.81
600.0	600.0	590.0	590.0	1.2	11.8	-116.97	-167.6	-329.3	369.4	356.4	13.04
700.0	700.0	690.0	690.0	1.5	13.8	-116.97	-167.6	-329.3	369.4	354.2	15.26
800.0	800.0	790.0	790.0	1.7	15.8	-116.97	-167.6	-329.3	369.4	352.0	17.49
900.0	900.0	890.0	890.0	1.9	17.8	-50.80	-167.6	-329.3	368.3	348.6	19.70
1,000.0	999.8	989.8	989.8	2.1	19.8	-51.49	-167.6	-329.3	365.1	343.2	21.89
1,100.0	1,099.5	1,089.5	1,089.5	2.4	21.8	-52.66	-167.6	-329.3	359.7	335.6	24.08
1,200.0	1,198.7	1,188.7	1,188.7	2.6	23.8	-54.35	-167.6	-329.3	352.4	326.1	26.27
1,300.0	1,297.7	1,287.7	1,287.7	2.9	25.8	-56.28	-167.6	-329.3	344.2	315.7	28.50

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Gaddis 36E-323
Project:	SEC.36-T4N-R68W	TVD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	MD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Gaddis 36E-323	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 #4 (10-16-13)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Gaddis Pad Sec.36-T4N-R68W - Gaddis 11-36 (Exist.) - Wellbore #1 - Wellbore #1													Offset Well Error:	0.0 ft
Survey Program: 7300-UNKNOWN														
Reference														
Offset														
Semi Major Axis														
Distance														
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
1,400.0	1,396.6	1,386.6	1,386.6	3.2	27.7	-58.30	-167.6	-329.3	336.4	305.7	30.76	10.936		
1,500.0	1,495.6	1,485.6	1,485.6	3.5	29.7	-60.40	-167.6	-329.3	329.1	296.0	33.04	9.961		
1,600.0	1,594.6	1,584.6	1,584.6	3.8	31.7	-62.60	-167.6	-329.3	322.2	286.8	35.32	9.121		
1,700.0	1,693.6	1,683.6	1,683.6	4.1	33.7	-64.89	-167.6	-329.3	315.8	278.2	37.62	8.394		
1,800.0	1,792.5	1,782.5	1,782.5	4.4	35.7	-67.26	-167.6	-329.3	309.9	270.0	39.93	7.761		
1,900.0	1,891.5	1,881.5	1,881.5	4.8	37.6	-69.73	-167.6	-329.3	304.6	262.4	42.25	7.210		
2,000.0	1,990.5	1,980.5	1,980.5	5.1	39.6	-72.27	-167.6	-329.3	299.9	255.3	44.58	6.728		
2,100.0	2,089.4	2,079.4	2,079.4	5.4	41.6	-74.89	-167.6	-329.3	295.8	248.9	46.91	6.306		
2,200.0	2,188.4	2,178.4	2,178.4	5.8	43.6	-77.57	-167.6	-329.3	292.4	243.1	49.25	5.937		
2,300.0	2,287.4	2,277.4	2,277.4	6.1	45.5	-80.31	-167.6	-329.3	289.6	238.0	51.59	5.614		
2,400.0	2,386.3	2,376.3	2,376.3	6.4	47.5	-83.10	-167.6	-329.3	287.5	233.6	53.93	5.332		
2,500.0	2,485.3	2,475.3	2,475.3	6.8	49.5	-85.92	-167.6	-329.3	286.1	229.9	56.26	5.086		
2,600.0	2,584.3	2,574.3	2,574.3	7.1	51.5	-88.75	-167.6	-329.3	285.5	226.9	58.60	4.872		
2,643.8	2,627.6	2,617.6	2,617.6	7.3	52.4	-90.00	-167.6	-329.3	285.4	225.8	59.62	4.787		
2,700.0	2,683.2	2,673.2	2,673.2	7.5	53.5	-91.60	-167.6	-329.3	285.5	224.6	60.93	4.686		
2,800.0	2,782.2	2,772.2	2,772.2	7.8	55.4	-94.44	-167.6	-329.3	286.3	223.0	63.24	4.526		
2,900.0	2,881.2	2,871.2	2,871.2	8.1	57.4	-97.25	-167.6	-329.3	287.7	222.2	65.55	4.389		
3,000.0	2,980.2	2,970.2	2,970.2	8.5	59.4	-100.03	-167.6	-329.3	289.9	222.1	67.85	4.273		
3,100.0	3,079.1	3,069.1	3,069.1	8.8	61.4	-102.76	-167.6	-329.3	292.8	222.6	70.14	4.174		
3,200.0	3,178.1	3,168.1	3,168.1	9.2	63.4	-105.44	-167.6	-329.3	296.3	223.9	72.42	4.092		
3,300.0	3,277.1	3,267.1	3,267.1	9.5	65.3	-108.05	-167.6	-329.3	300.5	225.8	74.68	4.023		
3,400.0	3,376.0	3,366.0	3,366.0	9.9	67.3	-110.58	-167.6	-329.3	305.2	228.3	76.93	3.968		
3,500.0	3,475.0	3,465.0	3,465.0	10.2	69.3	-113.03	-167.6	-329.3	310.6	231.4	79.17	3.923		
3,600.0	3,574.0	3,564.0	3,564.0	10.6	71.3	-115.40	-167.6	-329.3	316.5	235.1	81.40	3.889		
3,700.0	3,672.9	3,662.9	3,662.9	10.9	73.3	-117.68	-167.6	-329.3	323.0	239.4	83.62	3.863		
3,800.0	3,771.9	3,761.9	3,761.9	11.3	75.2	-119.86	-167.6	-329.3	329.9	244.1	85.83	3.844		
3,900.0	3,870.9	3,860.9	3,860.9	11.6	77.2	-121.96	-167.6	-329.3	337.4	249.3	88.04	3.832		
4,000.0	3,969.8	3,959.8	3,959.8	12.0	79.2	-123.96	-167.6	-329.3	345.2	255.0	90.23	3.826		
4,100.0	4,068.8	4,058.8	4,058.8	12.3	81.2	-125.87	-167.6	-329.3	353.5	261.0	92.42	3.824		
4,200.0	4,167.8	4,157.8	4,157.8	12.7	83.2	-127.70	-167.6	-329.3	362.1	267.5	94.61	3.827		
4,300.0	4,266.8	4,256.8	4,256.8	13.0	85.1	-129.44	-167.6	-329.3	371.1	274.3	96.79	3.834		
4,400.0	4,365.7	4,355.7	4,355.7	13.4	87.1	-131.09	-167.6	-329.3	380.4	281.4	98.96	3.844		
4,500.0	4,464.7	4,454.7	4,454.7	13.7	89.1	-132.67	-167.6	-329.3	390.0	288.9	101.13	3.856		
4,600.0	4,563.7	4,553.7	4,553.7	14.1	91.1	-134.17	-167.6	-329.3	399.9	296.6	103.30	3.871		
4,700.0	4,662.6	4,652.6	4,652.6	14.4	93.1	-135.60	-167.6	-329.3	410.1	304.6	105.47	3.888		
4,800.0	4,761.6	4,751.6	4,751.6	14.8	95.0	-136.96	-167.6	-329.3	420.5	312.8	107.64	3.906		
4,900.0	4,860.6	4,850.6	4,850.6	15.1	97.0	-138.25	-167.6	-329.3	431.1	321.3	109.81	3.926		
5,000.0	4,959.5	4,949.5	4,949.5	15.5	99.0	-139.48	-167.6	-329.3	441.9	329.9	111.97	3.947		
5,100.0	5,058.5	5,048.5	5,048.5	15.8	101.0	-140.65	-167.6	-329.3	452.9	338.8	114.14	3.968		
5,200.0	5,157.5	5,147.5	5,147.5	16.2	102.9	-141.77	-167.6	-329.3	464.2	347.9	116.30	3.991		
5,300.0	5,256.4	5,246.4	5,246.4	16.5	104.9	-142.83	-167.6	-329.3	475.5	357.1	118.47	4.014		
5,400.0	5,355.5	5,345.5	5,345.5	16.8	106.9	-143.88	-167.6	-329.3	486.4	365.6	120.82	4.026		
5,500.0	5,455.0	5,445.0	5,445.0	17.0	108.9	-144.68	-167.6	-329.3	494.8	371.6	123.18	4.017		
5,600.0	5,554.7	5,544.7	5,544.7	17.2	110.9	-145.19	-167.6	-329.3	500.4	374.9	125.47	3.988		
5,700.0	5,654.7	5,644.7	5,644.7	17.4	112.9	-145.44	-167.6	-329.3	503.1	375.5	127.68	3.941		
5,800.0	5,754.7	5,744.7	5,744.7	17.5	114.9	-148.14	-167.6	-329.3	503.4	373.6	129.83	3.878		
5,878.9	5,833.6	5,823.6	5,823.6	17.7	116.5	-148.14	-167.6	-329.3	503.4	371.9	131.55	3.827		
5,900.0	5,854.7	5,844.7	5,844.7	17.7	116.9	-148.14	-167.6	-329.3	503.4	371.4	132.01	3.814		
5,978.9	5,933.6	5,923.6	5,923.6	17.8	118.5	-148.14	-167.6	-329.3	503.4	369.7	133.73	3.765		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Gaddis 36E-323
Project:	SEC.36-T4N-R68W	TVD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	MD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Gaddis 36E-323	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 #4 (10-16-13)	Offset TVD Reference:	Offset Datum

Offset Design Gaddis Pad Sec.36-T4N-R68W - Gaddis 11-36 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7300-UNKNOWN													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Reference	Offset	Reference	Offset	Reference	Offset		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
6,000.0	5,954.7	5,944.7	5,944.7	17.9	118.9	148.14	-167.6	-329.3	503.4	369.2	134.19	3.752		
6,078.9	6,033.6	6,023.6	6,023.6	18.0	120.5	148.14	-167.6	-329.3	503.4	367.5	135.91	3.704		
6,100.0	6,054.7	6,044.7	6,044.7	18.0	120.9	148.14	-167.6	-329.3	503.4	367.1	136.37	3.691		
6,178.9	6,133.6	6,123.6	6,123.6	18.1	122.5	148.14	-167.6	-329.3	503.4	365.3	138.10	3.645		
6,200.0	6,154.7	6,144.7	6,144.7	18.2	122.9	148.14	-167.6	-329.3	503.4	364.9	138.56	3.633		
6,278.9	6,233.6	6,223.6	6,223.6	18.3	124.5	148.14	-167.6	-329.3	503.4	363.1	140.28	3.589		
6,300.0	6,254.7	6,244.7	6,244.7	18.3	124.9	148.14	-167.6	-329.3	503.4	362.7	140.74	3.577		
6,378.9	6,333.6	6,323.6	6,323.6	18.5	126.5	148.14	-167.6	-329.3	503.4	361.0	142.47	3.534		
6,400.0	6,354.7	6,344.7	6,344.7	18.5	126.9	148.14	-167.6	-329.3	503.4	360.5	142.93	3.522		
6,478.9	6,433.6	6,423.6	6,423.6	18.6	128.5	148.14	-167.6	-329.3	503.4	358.8	144.66	3.480		
6,500.0	6,454.7	6,444.7	6,444.7	18.7	128.9	148.14	-167.6	-329.3	503.4	358.3	145.12	3.469		
6,600.0	6,554.7	6,544.7	6,544.7	18.8	130.9	-32.03	-167.6	-329.3	502.5	355.4	147.10	3.416		
6,700.0	6,653.9	6,643.9	6,643.9	18.9	132.9	-33.17	-167.6	-329.3	492.4	345.0	147.46	3.339		
6,800.0	6,750.7	6,740.7	6,740.7	19.0	134.8	-35.71	-167.6	-329.3	471.8	325.6	146.23	3.226		
6,900.0	6,843.5	6,833.5	6,833.5	19.0	136.7	-39.95	-167.6	-329.3	441.6	297.4	144.22	3.062		
7,000.0	6,930.6	6,920.6	6,920.6	19.0	138.4	-46.32	-167.6	-329.3	403.7	260.7	142.99	2.823		
7,100.0	7,010.6	7,000.6	7,000.6	19.0	140.0	-55.21	-167.6	-329.3	360.8	216.1	144.66	2.494		
7,200.0	7,082.0	7,072.0	7,072.0	19.0	141.4	-66.45	-167.6	-329.3	317.9	167.8	150.08	2.118		
7,300.0	7,143.8	7,133.8	7,133.8	19.1	142.7	-78.58	-167.6	-329.3	282.7	126.1	156.54	1.806		
7,400.0	7,194.8	7,184.8	7,184.8	19.2	143.7	-89.11	-167.6	-329.3	266.4	106.2	160.19	1.663		
7,410.2	7,199.3	7,189.3	7,189.3	19.2	143.8	-90.00	-167.6	-329.3	266.2	105.8	160.37	1.660	CC, ES, SF	
7,500.0	7,234.1	7,224.1	7,224.1	19.5	144.5	-95.90	-167.6	-329.3	278.7	117.8	160.94	1.732		
7,600.0	7,261.1	7,251.1	7,251.1	20.0	145.0	-97.90	-167.6	-329.3	320.7	159.2	161.58	1.985		
7,700.0	7,275.2	7,265.2	7,265.2	20.7	145.3	-94.60	-167.6	-329.3	384.8	221.1	163.65	2.351		
7,800.0	7,277.2	7,267.2	7,267.2	21.6	145.3	-89.23	-167.6	-329.3	462.1	297.1	165.05	2.800		
7,900.0	7,276.2	7,266.2	7,266.2	22.6	145.3	-89.03	-167.6	-329.3	546.9	380.7	166.17	3.291		
8,000.0	7,275.3	7,265.3	7,265.3	23.8	145.3	-88.83	-167.6	-329.3	636.1	468.7	167.39	3.800		
8,100.0	7,274.3	7,264.3	7,264.3	25.0	145.3	-88.63	-167.6	-329.3	728.2	559.5	168.70	4.316		
8,200.0	7,273.4	7,263.4	7,263.4	26.4	145.3	-88.42	-167.6	-329.3	822.0	652.0	170.08	4.833		
8,300.0	7,272.5	7,262.5	7,262.5	27.8	145.2	-88.22	-167.6	-329.3	917.2	745.7	171.53	5.347		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Gaddis 36E-323
Project:	SEC.36-T4N-R68W	TVD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	MD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Gaddis 36E-323	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 #4 (10-16-13)	Offset TVD Reference:	Offset Datum

Offset Design												Gaddis Pad Sec.36-T4N-R68W - Gaddis 12-36 (Exist.) - Wellbore #1 - Wellbore #1		Offset Site Error:		0.0 ft	
Survey Program: 7300-UNKNOWN														Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance										
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning				
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)						
8,100.0	7,274.3	7,263.3	7,263.3	25.0	145.3	94.57	-1,814.2	-711.6	976.0	807.9	168.09	5.807					
8,200.0	7,273.4	7,262.4	7,262.4	26.4	145.2	94.10	-1,814.2	-711.6	876.8	707.2	169.61	5.170					
8,300.0	7,272.5	7,261.5	7,261.5	27.8	145.2	93.63	-1,814.2	-711.6	777.8	606.6	171.18	4.543					
8,400.0	7,271.5	7,260.5	7,260.5	29.3	145.2	93.16	-1,814.2	-711.6	679.0	506.2	172.80	3.929					
8,500.0	7,270.6	7,259.6	7,259.6	30.8	145.2	92.69	-1,814.2	-711.6	580.7	406.2	174.45	3.329					
8,600.0	7,269.6	7,258.6	7,258.6	32.4	145.2	92.21	-1,814.2	-711.6	483.1	306.9	176.13	2.743					
8,700.0	7,268.7	7,257.7	7,257.7	34.0	145.2	91.74	-1,814.2	-711.6	386.6	208.8	177.83	2.174					
8,800.0	7,267.7	7,256.7	7,256.7	35.6	145.1	91.27	-1,814.2	-711.6	292.6	113.1	179.55	1.630					
8,900.0	7,266.8	7,255.8	7,255.8	37.3	145.1	90.80	-1,814.2	-711.6	204.3	23.1	181.28	1.127	Level 2				
9,000.0	7,265.9	7,254.9	7,254.9	38.9	145.1	90.33	-1,814.2	-711.6	133.8	-49.3	183.02	0.731	Level 1				
9,069.3	7,265.2	7,254.2	7,254.2	40.1	145.1	90.00	-1,814.2	-711.6	114.4	-69.8	184.23	0.621	Level 1, CC, ES, SF				
9,100.0	7,264.9	7,253.9	7,253.9	40.6	145.1	89.86	-1,814.2	-711.6	118.4	-66.3	184.76	0.641	Level 1				
9,200.0	7,264.0	7,253.0	7,253.0	42.4	145.1	89.38	-1,814.2	-711.6	173.6	-12.9	186.51	0.931	Level 1				
9,300.0	7,263.0	7,252.0	7,252.0	44.1	145.0	88.91	-1,814.2	-711.6	257.5	69.2	188.25	1.368	Level 3				
9,400.0	7,262.1	7,251.1	7,251.1	45.9	145.0	88.44	-1,814.2	-711.6	349.9	159.9	190.00	1.841					
9,500.0	7,261.1	7,250.1	7,250.1	47.6	145.0	87.97	-1,814.2	-711.6	445.6	253.8	191.75	2.324					
9,600.0	7,260.2	7,249.2	7,249.2	49.4	145.0	87.50	-1,814.2	-711.6	542.8	349.3	193.49	2.805					
9,700.0	7,259.3	7,248.3	7,248.3	51.2	145.0	87.03	-1,814.2	-711.6	640.9	445.7	195.22	3.283					
9,800.0	7,258.3	7,247.3	7,247.3	53.0	144.9	86.55	-1,814.2	-711.6	739.5	542.6	196.95	3.755					
9,900.0	7,257.4	7,246.4	7,246.4	54.8	144.9	86.08	-1,814.2	-711.6	838.5	639.8	198.67	4.220					
10,000.0	7,256.4	7,245.4	7,245.4	56.6	144.9	85.62	-1,814.2	-711.6	937.6	737.2	200.39	4.679					

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Gaddis 36E-323
Project:	SEC.36-T4N-R68W	TVD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	MD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Gaddis 36E-323	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 #4 (10-16-13)	Offset TVD Reference:	Offset Datum

Offset Design Gaddis Pad Sec.36-T4N-R68W - Gaddis 36E-403 - Wellbore #1 - Plan #2 (10-16-13)														Offset Site Error:	0.0 ft
Survey Program: 0-MWD														Offset Well Error:	0.0 ft
Reference	Offset	Semi Major Axis		Distance		Warning									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
0.0	0.0	0.0	0.0	0.0	0.0	-90.01	0.0	-30.7	30.7						
100.0	100.0	100.0	100.0	0.1	0.1	-90.01	0.0	-30.7	30.7	30.5	0.22	136.557			
200.0	200.0	200.0	200.0	0.3	0.3	-90.01	0.0	-30.7	30.7	30.0	0.67	45.519 CC, ES			
300.0	300.0	298.9	298.9	0.6	0.6	-89.25	0.4	-32.3	32.4	31.3	1.12	29.027			
400.0	400.0	397.6	397.5	0.8	0.8	-87.37	1.7	-37.3	37.4	35.8	1.56	23.918			
500.0	500.0	495.9	495.3	1.0	1.0	-85.18	3.8	-45.5	45.9	43.8	2.03	22.558			
600.0	600.0	593.4	592.2	1.2	1.3	-83.19	6.8	-56.8	57.7	55.2	2.53	22.826			
700.0	700.0	690.0	687.6	1.5	1.6	-81.59	10.5	-71.2	73.0	69.9	3.06	23.859			
800.0	800.0	786.4	782.4	1.7	2.0	-80.37	15.0	-88.4	91.4	87.8	3.63	25.202			
900.0	900.0	884.9	878.9	1.9	2.4	-13.24	19.8	-106.9	109.0	105.2	3.86	28.274			
1,000.0	999.8	983.8	976.0	2.1	2.8	-13.06	24.6	-125.4	123.3	119.0	4.30	28.665			
1,100.0	1,099.5	1,083.2	1,073.6	2.4	3.2	-13.27	29.5	-144.0	134.2	129.4	4.76	28.212			
1,200.0	1,198.7	1,182.9	1,171.4	2.6	3.6	-13.78	34.3	-162.7	141.7	136.5	5.22	27.145			
1,300.0	1,297.7	1,282.8	1,269.3	2.9	4.1	-14.47	39.2	-181.4	147.2	141.5	5.70	25.813			
1,400.0	1,396.6	1,382.6	1,367.3	3.2	4.5	-15.12	44.0	-200.1	152.7	146.5	6.19	24.646			
1,500.0	1,495.6	1,482.4	1,465.2	3.5	4.9	-15.72	48.9	-218.7	158.2	151.5	6.69	23.635			
1,600.0	1,594.6	1,582.3	1,563.2	3.8	5.3	-16.28	53.7	-237.4	163.7	156.5	7.19	22.750			
1,700.0	1,693.6	1,682.1	1,661.1	4.1	5.8	-16.81	58.6	-256.1	169.2	161.5	7.70	21.971			
1,800.0	1,792.5	1,781.9	1,759.1	4.4	6.2	-17.30	63.5	-274.8	174.7	166.5	8.21	21.279			
1,900.0	1,891.5	1,881.8	1,857.0	4.8	6.6	-17.76	68.3	-293.5	180.3	171.6	8.73	20.661			
2,000.0	1,990.5	1,981.6	1,955.0	5.1	7.1	-18.20	73.2	-312.2	185.8	176.6	9.24	20.106			
2,100.0	2,089.4	2,081.5	2,052.9	5.4	7.5	-18.61	78.0	-330.9	191.4	181.6	9.76	19.605			
2,200.0	2,188.4	2,181.3	2,150.9	5.8	7.9	-18.99	82.9	-349.6	197.0	186.7	10.29	19.150			
2,300.0	2,287.4	2,281.1	2,248.8	6.1	8.4	-19.36	87.8	-368.3	202.6	191.8	10.81	18.737			
2,400.0	2,386.3	2,381.0	2,346.8	6.4	8.8	-19.70	92.6	-387.0	208.2	196.8	11.34	18.358			
2,500.0	2,485.3	2,480.8	2,444.7	6.8	9.2	-20.03	97.5	-405.7	213.8	201.9	11.87	18.011			
2,600.0	2,584.3	2,580.6	2,542.7	7.1	9.7	-20.34	102.3	-424.3	219.4	207.0	12.40	17.691			
2,700.0	2,683.2	2,680.5	2,640.6	7.5	10.1	-20.64	107.2	-443.0	225.0	212.0	12.93	17.396			
2,800.0	2,782.2	2,780.3	2,738.6	7.8	10.5	-20.92	112.1	-461.7	230.6	217.1	13.47	17.122			
2,900.0	2,881.2	2,880.1	2,836.5	8.1	11.0	-21.18	116.9	-480.4	236.2	222.2	14.00	16.868			
3,000.0	2,980.2	2,980.0	2,934.5	8.5	11.4	-21.44	121.8	-499.1	241.9	227.3	14.54	16.631			
3,100.0	3,079.1	3,079.8	3,032.4	8.8	11.8	-21.68	126.6	-517.8	247.5	232.4	15.08	16.410			
3,200.0	3,178.1	3,179.6	3,130.4	9.2	12.3	-21.91	131.5	-536.5	253.1	237.5	15.62	16.203			
3,300.0	3,277.1	3,279.5	3,228.3	9.5	12.7	-22.14	136.4	-555.2	258.8	242.6	16.16	16.009			
3,400.0	3,376.0	3,379.3	3,326.3	9.9	13.1	-22.35	141.2	-573.9	264.4	247.7	16.71	15.827			
3,500.0	3,475.0	3,479.2	3,424.2	10.2	13.6	-22.55	146.1	-592.6	270.1	252.8	17.25	15.655			
3,600.0	3,574.0	3,579.0	3,522.2	10.6	14.0	-22.75	150.9	-611.3	275.7	257.9	17.80	15.494			
3,700.0	3,672.9	3,678.8	3,620.1	10.9	14.4	-22.94	155.8	-629.9	281.4	263.0	18.34	15.341			
3,800.0	3,771.9	3,778.7	3,718.1	11.3	14.9	-23.12	160.7	-648.6	287.0	268.1	18.89	15.197			
3,900.0	3,870.9	3,878.5	3,816.0	11.6	15.3	-23.29	165.5	-667.3	292.7	273.3	19.43	15.060			
4,000.0	3,969.8	3,978.3	3,914.0	12.0	15.7	-23.46	170.4	-686.0	298.4	278.4	19.98	14.930			
4,100.0	4,068.8	4,078.2	4,011.9	12.3	16.2	-23.62	175.2	-704.7	304.0	283.5	20.53	14.807			
4,200.0	4,167.8	4,178.0	4,109.9	12.7	16.6	-23.77	180.1	-723.4	309.7	288.6	21.08	14.690			
4,300.0	4,266.8	4,277.8	4,207.8	13.0	17.0	-23.92	185.0	-742.1	315.4	293.7	21.63	14.579			
4,400.0	4,365.7	4,377.7	4,305.8	13.4	17.5	-24.06	189.8	-760.8	321.0	298.9	22.18	14.472			
4,500.0	4,464.7	4,477.5	4,403.7	13.7	17.9	-24.20	194.7	-779.5	326.7	304.0	22.73	14.371			
4,600.0	4,563.7	4,577.3	4,501.7	14.1	18.3	-24.34	199.5	-798.2	332.4	309.1	23.29	14.274			
4,700.0	4,662.6	4,677.2	4,599.6	14.4	18.8	-24.47	204.4	-816.9	338.1	314.2	23.84	14.181			
4,800.0	4,761.6	4,777.0	4,697.6	14.8	19.2	-24.59	209.3	-835.5	343.7	319.4	24.39	14.093			

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Gaddis 36E-323
Project:	SEC.36-T4N-R68W	TVD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	MD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Gaddis 36E-323	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 #4 (10-16-13)	Offset TVD Reference:	Offset Datum

Offset Design Gaddis Pad Sec.36-T4N-R68W - Gaddis 36E-403 - Wellbore #1 - Plan #2 (10-16-13)														Offset Site Error:	0.0 ft
Survey Program: 0-MWD														Offset Well Error:	0.0 ft
Reference	Offset		Semi Major Axis		Distance										Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
4,900.0	4,860.6	4,876.9	4,795.5	15.1	19.6	-24.71	214.1	-854.2	349.4	324.5	24.95	14.008			
5,000.0	4,959.5	4,976.7	4,893.5	15.5	20.1	-24.83	219.0	-872.9	355.1	329.6	25.50	13.926			
5,100.0	5,058.5	5,076.5	4,991.4	15.8	20.5	-24.94	223.8	-891.6	360.8	334.7	26.05	13.848			
5,200.0	5,157.5	5,176.4	5,089.4	16.2	20.9	-25.05	228.7	-910.3	366.5	339.9	26.61	13.773			
5,300.0	5,256.4	5,276.2	5,187.3	16.5	21.4	-25.16	233.6	-929.0	372.2	345.0	27.16	13.701			
5,400.0	5,355.5	5,376.0	5,285.2	16.8	21.8	-25.25	238.4	-947.7	378.5	350.9	27.69	13.672			
5,500.0	5,455.0	5,475.5	5,382.9	17.0	22.2	-25.18	243.3	-966.3	387.9	359.8	28.12	13.796			
5,600.0	5,554.7	5,580.2	5,485.6	17.2	22.7	-24.91	248.3	-985.6	400.2	371.7	28.48	14.049			
5,700.0	5,654.7	5,695.0	5,599.0	17.4	23.0	-24.53	252.9	-1,003.4	412.6	383.8	28.77	14.339			
5,800.0	5,754.7	5,810.7	5,713.8	17.5	23.3	-90.49	256.4	-1,016.8	423.8	394.7	29.07	14.577			
5,900.0	5,854.7	5,927.2	5,829.9	17.7	23.5	-90.17	258.7	-1,025.8	431.5	402.1	29.43	14.664			
6,000.0	5,954.7	6,044.2	5,946.9	17.9	23.7	-90.02	259.9	-1,030.2	435.3	405.5	29.79	14.612			
6,100.0	6,054.7	6,152.0	6,054.7	18.0	23.8	-90.00	260.0	-1,030.7	435.7	405.5	30.16	14.447			
6,200.0	6,154.7	6,252.0	6,154.7	18.2	23.9	-90.00	260.0	-1,030.7	435.7	405.2	30.52	14.274			
6,300.0	6,254.7	6,352.0	6,254.7	18.3	24.0	-90.00	260.0	-1,030.7	435.7	404.8	30.89	14.105			
6,400.0	6,354.7	6,452.0	6,354.7	18.5	24.2	-90.00	260.0	-1,030.7	435.7	404.4	31.26	13.938			
6,500.0	6,454.7	6,552.0	6,454.7	18.7	24.3	-90.00	260.0	-1,030.7	435.7	404.1	31.63	13.774			
6,559.1	6,513.8	6,611.2	6,513.8	18.8	24.4	90.06	260.0	-1,030.7	435.7	403.9	31.82	13.692			
6,600.0	6,554.7	6,652.0	6,554.7	18.8	24.4	90.08	260.0	-1,030.7	435.7	403.7	31.97	13.630			
6,700.0	6,653.9	6,751.8	6,654.4	18.9	24.5	91.54	259.3	-1,030.7	435.9	403.8	32.06	13.596			
6,800.0	6,750.7	6,853.3	6,755.3	19.0	24.6	93.38	248.3	-1,030.7	436.5	404.4	32.02	13.633			
6,900.0	6,843.5	6,956.9	6,855.7	19.0	24.7	95.18	223.4	-1,030.7	437.5	405.5	31.94	13.696			
7,000.0	6,930.6	7,062.5	6,953.7	19.0	24.7	96.89	184.3	-1,030.7	438.9	407.0	31.89	13.761			
7,100.0	7,010.6	7,170.1	7,047.1	19.0	24.7	98.48	131.0	-1,030.7	440.5	408.6	31.92	13.801			
7,200.0	7,082.0	7,279.7	7,133.5	19.0	24.7	99.93	63.7	-1,030.8	442.3	410.2	32.08	13.787			
7,300.0	7,143.8	7,391.2	7,210.6	19.1	24.7	101.20	-16.7	-1,030.8	444.0	411.6	32.42	13.694			
7,400.0	7,194.8	7,504.3	7,276.1	19.2	24.8	102.26	-108.8	-1,030.8	445.6	412.6	33.00	13.504			
7,500.0	7,234.1	7,618.9	7,327.8	19.5	25.0	103.09	-210.9	-1,030.9	447.0	413.1	33.86	13.202			
7,600.0	7,261.1	7,734.5	7,363.9	20.0	25.3	103.66	-320.6	-1,030.9	448.0	413.0	35.01	12.794			
7,700.0	7,275.2	7,849.2	7,383.0	20.7	25.7	103.97	-433.6	-1,030.9	448.5	412.0	36.45	12.303			
7,800.0	7,277.2	7,952.8	7,393.2	21.6	26.3	104.92	-536.7	-1,031.0	450.4	412.4	37.99	11.857			
7,900.0	7,276.2	8,061.3	7,396.0	22.6	27.1	105.39	-645.2	-1,031.0	451.2	411.1	40.11	11.249			
8,000.0	7,275.3	8,161.3	7,395.7	23.8	28.0	105.48	-745.1	-1,031.1	451.4	408.9	42.47	10.628			
8,100.0	7,274.3	8,261.3	7,395.5	25.0	29.0	105.57	-845.1	-1,031.1	451.5	406.5	45.00	10.033			
8,200.0	7,273.4	8,361.3	7,395.3	26.4	30.1	105.65	-945.1	-1,031.1	451.6	403.9	47.68	9.472			
8,300.0	7,272.5	8,461.3	7,395.0	27.8	31.3	105.74	-1,045.1	-1,031.2	451.7	401.3	50.49	8.948			
8,400.0	7,271.5	8,561.3	7,394.8	29.3	32.5	105.83	-1,145.1	-1,031.2	451.9	398.5	53.40	8.462			
8,500.0	7,270.6	8,661.3	7,394.6	30.8	33.9	105.92	-1,245.1	-1,031.3	452.0	395.6	56.40	8.014			
8,600.0	7,269.6	8,761.3	7,394.3	32.4	35.3	106.01	-1,345.1	-1,031.3	452.1	392.7	59.48	7.601			
8,700.0	7,268.7	8,861.3	7,394.1	34.0	36.8	106.10	-1,445.1	-1,031.3	452.3	389.7	62.62	7.222			
8,800.0	7,267.7	8,961.3	7,393.9	35.6	38.3	106.19	-1,545.1	-1,031.4	452.4	386.6	65.82	6.874			
8,900.0	7,266.8	9,061.3	7,393.6	37.3	39.8	106.28	-1,645.1	-1,031.4	452.5	383.5	69.06	6.553			
9,000.0	7,265.9	9,161.3	7,393.4	38.9	41.4	106.36	-1,745.1	-1,031.5	452.7	380.3	72.34	6.258			
9,100.0	7,264.9	9,261.3	7,393.2	40.6	43.0	106.45	-1,845.1	-1,031.5	452.8	377.2	75.66	5.985			
9,200.0	7,264.0	9,361.2	7,392.9	42.4	44.6	106.54	-1,945.1	-1,031.5	453.0	374.0	79.00	5.734			
9,300.0	7,263.0	9,461.2	7,392.7	44.1	46.3	106.63	-2,045.1	-1,031.6	453.1	370.7	82.37	5.501			
9,400.0	7,262.1	9,561.2	7,392.5	45.9	47.9	106.72	-2,145.1	-1,031.6	453.2	367.5	85.76	5.285			
9,500.0	7,261.1	9,661.2	7,392.2	47.6	49.6	106.81	-2,245.1	-1,031.7	453.4	364.2	89.17	5.084			
9,600.0	7,260.2	9,761.2	7,392.0	49.4	51.3	106.89	-2,345.1	-1,031.7	453.5	360.9	92.60	4.898			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Gaddis 36E-323
Project:	SEC.36-T4N-R68W	TVD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	MD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Gaddis 36E-323	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 #4 (10-16-13)	Offset TVD Reference:	Offset Datum

Offset Design Gaddis Pad Sec.36-T4N-R68W - Gaddis 36E-403 - Wellbore #1 - Plan #2 (10-16-13)												Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
9,700.0	7,259.3	9,861.2	7,391.8	51.2	53.1	106.98	-2,445.1	-1,031.8	453.7	357.6	96.04	4.724		
9,800.0	7,258.3	9,961.2	7,391.5	53.0	54.8	107.07	-2,545.1	-1,031.8	453.8	354.3	99.49	4.561		
9,900.0	7,257.4	10,061.2	7,391.3	54.8	56.5	107.16	-2,645.1	-1,031.8	454.0	351.0	102.96	4.409		
10,000.0	7,256.4	10,161.2	7,391.1	56.6	58.3	107.25	-2,745.1	-1,031.9	454.1	347.7	106.43	4.267		
10,100.0	7,255.5	10,261.2	7,390.8	58.4	60.1	107.33	-2,845.1	-1,031.9	454.3	344.4	109.91	4.133		
10,200.0	7,254.5	10,361.2	7,390.6	60.2	61.8	107.42	-2,945.1	-1,032.0	454.4	341.0	113.40	4.007		
10,300.0	7,253.6	10,461.2	7,390.4	62.1	63.6	107.51	-3,045.1	-1,032.0	454.6	337.7	116.89	3.889		
10,400.0	7,252.7	10,561.2	7,390.1	63.9	65.4	107.60	-3,145.1	-1,032.0	454.7	334.3	120.40	3.777		
10,500.0	7,251.7	10,661.2	7,389.9	65.7	67.2	107.68	-3,245.1	-1,032.1	454.9	331.0	123.90	3.671		
10,600.0	7,250.8	10,761.2	7,389.7	67.6	69.0	107.77	-3,345.1	-1,032.1	455.0	327.6	127.41	3.571		
10,700.0	7,249.8	10,861.2	7,389.4	69.4	70.8	107.86	-3,445.1	-1,032.2	455.2	324.3	130.92	3.477		
10,800.0	7,248.9	10,961.2	7,389.2	71.3	72.7	107.95	-3,545.1	-1,032.2	455.3	320.9	134.44	3.387		
10,900.0	7,247.9	11,061.2	7,389.0	73.1	74.5	108.03	-3,645.1	-1,032.2	455.5	317.5	137.96	3.302		
11,000.0	7,247.0	11,161.2	7,388.7	75.0	76.3	108.12	-3,745.1	-1,032.3	455.7	314.2	141.48	3.221		
11,100.0	7,246.1	11,261.2	7,388.5	76.9	78.1	108.21	-3,845.1	-1,032.3	455.8	310.8	145.00	3.144		
11,200.0	7,245.1	11,361.2	7,388.3	78.7	80.0	108.30	-3,945.1	-1,032.4	456.0	307.5	148.52	3.070		
11,300.0	7,244.2	11,461.2	7,388.0	80.6	81.8	108.38	-4,045.1	-1,032.4	456.1	304.1	152.04	3.000		
11,400.0	7,243.2	11,561.2	7,387.8	82.5	83.7	108.47	-4,145.1	-1,032.5	456.3	300.7	155.57	2.933		
11,500.0	7,242.3	11,661.2	7,387.6	84.3	85.5	108.56	-4,245.0	-1,032.5	456.5	297.4	159.09	2.869		
11,600.0	7,241.4	11,761.2	7,387.3	86.2	87.4	108.64	-4,345.0	-1,032.5	456.6	294.0	162.61	2.808		
11,700.0	7,240.4	11,861.2	7,387.1	88.1	89.0	108.73	-4,445.0	-1,032.6	456.8	290.9	165.92	2.753		
11,743.3	7,240.0	11,904.3	7,387.0	88.9	89.7	108.77	-4,488.2	-1,032.6	456.9	289.6	167.30	2.731 SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Gaddis 36E-323
Project:	SEC.36-T4N-R68W	TVD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	MD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Gaddis 36E-323	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 #4 (10-16-13)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Gaddis Pad Sec.36-T4N-R68W - Gaddis 36J-243 - Wellbore #1 - Plan #2 (10-16-13)													Offset Well Error:	0.0 ft
Survey Program: 0-MWD														
Reference														
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
				Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	0.0	0.0	0.0	0.0	90.03	0.0	30.7	30.7					
100.0	100.0	99.0	99.0	0.1	0.1	90.03	0.0	30.7	30.7	30.5	0.22	137.242		
200.0	200.0	199.0	199.0	0.3	0.3	90.03	0.0	30.7	30.7	30.0	0.67	45.671		
300.0	300.0	299.0	299.0	0.6	0.6	90.03	0.0	30.7	30.7	29.6	1.12	27.366		
400.0	400.0	399.0	399.0	0.8	0.8	90.03	0.0	30.7	30.7	29.1	1.57	19.536		
500.0	500.0	499.0	499.0	1.0	1.0	90.03	0.0	30.7	30.7	28.7	2.02	15.190		
600.0	600.0	599.0	599.0	1.2	1.2	90.03	0.0	30.7	30.7	28.2	2.47	12.426		
700.0	700.0	699.0	699.0	1.5	1.5	90.03	0.0	30.7	30.7	27.8	2.92	10.512		
800.0	800.0	799.0	799.0	1.7	1.7	90.03	0.0	30.7	30.7	27.3	3.37	9.110 CC, ES		
900.0	900.0	899.0	899.0	1.9	1.9	157.65	0.0	30.7	32.3	28.5	3.81	8.477		
1,000.0	999.8	998.8	998.8	2.1	2.1	160.69	0.0	30.7	37.2	32.9	4.24	8.763		
1,100.0	1,099.5	1,098.5	1,098.5	2.4	2.4	164.27	0.0	30.7	45.5	40.8	4.68	9.729		
1,200.0	1,198.7	1,197.7	1,197.7	2.6	2.6	167.52	0.0	30.7	57.3	52.2	5.11	11.223		
1,300.0	1,297.7	1,296.7	1,296.7	2.9	2.8	170.00	0.0	30.7	71.4	65.8	5.55	12.860		
1,400.0	1,396.6	1,395.6	1,395.6	3.2	3.0	171.66	0.0	30.7	85.5	79.5	6.00	14.262		
1,500.0	1,495.6	1,494.6	1,494.6	3.5	3.2	172.86	0.0	30.7	99.7	93.3	6.44	15.471		
1,600.0	1,594.6	1,593.6	1,593.6	3.8	3.5	173.75	0.0	30.7	113.9	107.0	6.90	16.521		
1,700.0	1,693.6	1,692.6	1,692.6	4.1	3.7	174.45	0.0	30.7	128.2	120.8	7.35	17.440		
1,800.0	1,792.5	1,791.5	1,791.5	4.4	3.9	175.01	0.0	30.7	142.4	134.6	7.80	18.251		
1,900.0	1,891.5	1,890.5	1,890.5	4.8	4.1	175.46	0.0	30.7	156.7	148.4	8.26	18.970		
2,000.0	1,990.5	1,989.5	1,989.5	5.1	4.4	175.84	0.0	30.7	171.0	162.3	8.72	19.612		
2,100.0	2,089.4	2,093.6	2,093.6	5.4	4.6	175.94	1.2	29.7	184.0	174.8	9.18	20.039		
2,200.0	2,188.4	2,199.1	2,198.9	5.8	4.8	175.44	5.3	26.3	194.0	184.3	9.65	20.103		
2,300.0	2,287.4	2,304.9	2,304.3	6.1	5.1	174.41	12.4	20.3	200.8	190.7	10.12	19.843		
2,400.0	2,386.3	2,404.6	2,403.5	6.4	5.3	173.24	20.5	13.6	206.2	195.6	10.58	19.484		
2,500.0	2,485.3	2,504.4	2,502.7	6.8	5.5	172.14	28.6	6.8	211.6	200.6	11.05	19.152		
2,600.0	2,584.3	2,604.2	2,601.9	7.1	5.8	171.08	36.6	0.1	217.2	205.7	11.53	18.845		
2,700.0	2,683.2	2,703.9	2,701.2	7.5	6.0	170.09	44.7	-6.6	222.8	210.8	12.01	18.560		
2,800.0	2,782.2	2,803.7	2,800.4	7.8	6.3	169.14	52.8	-13.4	228.5	216.0	12.49	18.296		
2,900.0	2,881.2	2,903.5	2,899.6	8.1	6.5	168.23	60.8	-20.1	234.3	221.3	12.98	18.049		
3,000.0	2,980.2	3,003.3	2,998.8	8.5	6.8	167.37	68.9	-26.8	240.1	226.6	13.47	17.818		
3,100.0	3,079.1	3,103.0	3,098.0	8.8	7.1	166.55	77.0	-33.6	245.9	231.9	13.97	17.602		
3,200.0	3,178.1	3,202.8	3,197.2	9.2	7.3	165.77	85.0	-40.3	251.8	237.3	14.47	17.399		
3,300.0	3,277.1	3,302.6	3,296.4	9.5	7.6	165.03	93.1	-47.0	257.8	242.8	14.98	17.208		
3,400.0	3,376.0	3,402.3	3,395.6	9.9	7.9	164.31	101.2	-53.8	263.8	248.3	15.49	17.028		
3,500.0	3,475.0	3,502.1	3,494.9	10.2	8.1	163.63	109.2	-60.5	269.8	253.8	16.00	16.858		
3,600.0	3,574.0	3,601.9	3,594.1	10.6	8.4	162.98	117.3	-67.2	275.8	259.3	16.52	16.697		
3,700.0	3,672.9	3,701.6	3,693.3	10.9	8.7	162.36	125.4	-74.0	281.9	264.9	17.04	16.546		
3,800.0	3,771.9	3,801.4	3,792.5	11.3	9.0	161.77	133.4	-80.7	288.1	270.5	17.56	16.402		
3,900.0	3,870.9	3,901.2	3,891.7	11.6	9.2	161.20	141.5	-87.4	294.2	276.1	18.09	16.265		
4,000.0	3,969.8	4,000.9	3,990.9	12.0	9.5	160.65	149.6	-94.2	300.4	281.8	18.62	16.136		
4,100.0	4,068.8	4,100.7	4,090.1	12.3	9.8	160.12	157.6	-100.9	306.6	287.5	19.15	16.012		
4,200.0	4,167.8	4,200.5	4,189.4	12.7	10.1	159.62	165.7	-107.6	312.9	293.2	19.68	15.895		
4,300.0	4,266.8	4,300.2	4,288.6	13.0	10.3	159.13	173.8	-114.4	319.1	298.9	20.22	15.783		
4,400.0	4,365.7	4,400.0	4,387.8	13.4	10.6	158.67	181.8	-121.1	325.4	304.7	20.76	15.677		
4,500.0	4,464.7	4,499.8	4,487.0	13.7	10.9	158.22	189.9	-127.8	331.7	310.4	21.30	15.575		
4,600.0	4,563.7	4,599.5	4,586.2	14.1	11.2	157.79	198.0	-134.6	338.0	316.2	21.84	15.478		
4,700.0	4,662.6	4,699.3	4,685.4	14.4	11.5	157.37	206.0	-141.3	344.4	322.0	22.38	15.385		
4,800.0	4,761.6	4,799.1	4,784.6	14.8	11.8	156.97	214.1	-148.0	350.7	327.8	22.93	15.296		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Gaddis 36E-323
Project:	SEC.36-T4N-R68W	TVD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	MD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Gaddis 36E-323	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 #4 (10-16-13)	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error:	0.0 ft
Gaddis Pad Sec.36-T4N-R68W - Gaddis 36J-243 - Wellbore #1 - Plan #2 (10-16-13)														Offset Well Error:	0.0 ft
Survey Program: 0-MWD															
Reference															
Measured Depth		Vertical Depth		Offset		Semi Major Axis		Highside		Offset Wellbore Centre		Distance		Minimum Separation	
Depth (ft)		Depth (ft)		Depth (ft)		Reference (ft)	Offset (ft)	Toolface (°)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Separation (ft)	Factor
4,900.0	4,860.6	4,898.8	4,883.8	15.1	12.1	156.58	222.2	-154.8	357.1	333.6	23.48	15.211			
5,000.0	4,959.5	4,998.6	4,983.1	15.5	12.3	156.21	230.3	-161.5	363.5	339.5	24.03	15.129			
5,100.0	5,058.5	5,098.4	5,082.3	15.8	12.6	155.85	238.3	-168.2	369.9	345.3	24.58	15.051			
5,200.0	5,157.5	5,198.2	5,181.5	16.2	12.9	155.50	246.4	-175.0	376.3	351.2	25.13	14.976			
5,300.0	5,256.4	5,291.5	5,274.4	16.5	13.1	155.31	253.2	-180.6	383.5	357.8	25.63	14.962			
5,400.0	5,355.5	5,383.3	5,366.1	16.8	13.3	155.46	257.6	-184.3	391.9	365.8	26.06	15.036			
5,500.0	5,455.0	5,475.0	5,457.7	17.0	13.5	155.77	259.7	-186.1	399.3	372.9	26.42	15.116			
5,600.0	5,554.7	5,571.1	5,553.7	17.2	13.7	156.16	260.0	-186.3	405.3	378.6	26.74	15.160			
5,700.0	5,654.7	5,671.0	5,653.7	17.4	13.8	156.38	260.0	-186.3	408.4	381.3	27.06	15.089			
5,800.0	5,754.7	5,771.0	5,753.7	17.5	14.0	90.00	260.0	-186.3	408.7	381.3	27.42	14.902			
5,900.0	5,854.7	5,871.0	5,853.7	17.7	14.2	90.00	260.0	-186.3	408.7	380.9	27.82	14.691			
6,000.0	5,954.7	5,971.0	5,953.7	17.9	14.4	90.00	260.0	-186.3	408.7	380.5	28.22	14.484			
6,100.0	6,054.7	6,071.0	6,053.7	18.0	14.6	90.00	260.0	-186.3	408.7	380.1	28.62	14.282			
6,200.0	6,154.7	6,171.0	6,153.7	18.2	14.8	90.00	260.0	-186.3	408.7	379.7	29.02	14.085			
6,300.0	6,254.7	6,271.0	6,253.7	18.3	15.1	90.00	260.0	-186.3	408.7	379.3	29.42	13.893			
6,400.0	6,354.7	6,371.0	6,353.7	18.5	15.3	90.00	260.0	-186.3	408.7	378.9	29.82	13.705			
6,500.0	6,454.7	6,471.0	6,453.7	18.7	15.5	90.03	259.8	-186.3	408.7	378.5	30.22	13.526			
6,503.1	6,457.8	6,474.1	6,456.8	18.7	15.5	-90.02	259.7	-186.3	408.7	378.5	30.22	13.523			
6,600.0	6,554.7	6,570.3	6,552.5	18.8	15.6	-88.96	251.1	-186.3	408.8	378.3	30.45	13.425			
6,700.0	6,653.9	6,668.2	6,648.1	18.9	15.6	-87.60	230.0	-186.3	409.1	378.5	30.53	13.399			
6,800.0	6,750.7	6,765.0	6,739.1	19.0	15.7	-86.29	197.4	-186.4	409.6	379.0	30.54	13.413			
6,900.0	6,843.5	6,860.7	6,824.3	19.0	15.7	-85.05	154.1	-186.4	410.3	379.8	30.52	13.443			
7,000.0	6,930.6	6,955.4	6,902.7	19.0	15.7	-83.90	101.0	-186.4	411.1	380.6	30.54	13.460			
7,100.0	7,010.6	7,050.0	6,973.9	19.0	15.7	-82.84	38.8	-186.5	412.0	381.3	30.66	13.435			
7,200.0	7,082.0	7,142.3	7,035.4	19.0	15.7	-81.93	-30.0	-186.5	412.9	381.9	30.95	13.339			
7,300.0	7,143.8	7,234.7	7,088.2	19.1	15.8	-81.13	-105.8	-186.6	413.8	382.3	31.46	13.154			
7,400.0	7,194.8	7,326.6	7,131.3	19.2	16.3	-80.49	-186.9	-186.6	414.6	382.3	32.22	12.867			
7,500.0	7,234.1	7,418.1	7,164.2	19.5	16.9	-79.99	-272.2	-186.7	415.2	381.9	33.26	12.485			
7,600.0	7,261.1	7,509.3	7,186.6	20.0	17.6	-79.64	-360.5	-186.8	415.7	381.1	34.57	12.023			
7,700.0	7,275.2	7,600.0	7,198.3	20.7	18.5	-79.46	-450.4	-186.8	415.9	379.8	36.15	11.506			
7,800.0	7,277.2	7,694.7	7,200.1	21.6	19.5	-79.46	-545.1	-186.9	416.0	377.9	38.06	10.930			
7,900.0	7,276.2	7,794.7	7,199.7	22.6	20.7	-79.54	-645.1	-187.0	415.9	375.5	40.36	10.305			
8,000.0	7,275.3	7,894.7	7,199.4	23.8	21.9	-79.63	-745.1	-187.0	415.8	372.9	42.87	9.699			
8,100.0	7,274.3	7,994.7	7,199.1	25.0	23.3	-79.71	-845.1	-187.1	415.7	370.2	45.57	9.124			
8,200.0	7,273.4	8,094.7	7,198.7	26.4	24.8	-79.79	-945.1	-187.2	415.7	367.3	48.41	8.587			
8,300.0	7,272.5	8,194.7	7,198.4	27.8	26.3	-79.88	-1,045.1	-187.3	415.6	364.2	51.37	8.089			
8,400.0	7,271.5	8,294.7	7,198.1	29.3	27.8	-79.96	-1,145.1	-187.3	415.5	361.1	54.45	7.632			
8,500.0	7,270.6	8,394.7	7,197.8	30.8	29.4	-80.05	-1,245.1	-187.4	415.4	357.8	57.61	7.212			
8,600.0	7,269.6	8,494.7	7,197.4	32.4	31.0	-80.13	-1,345.1	-187.5	415.4	354.5	60.84	6.827			
8,700.0	7,268.7	8,594.7	7,197.1	34.0	32.7	-80.21	-1,445.1	-187.6	415.3	351.2	64.14	6.475			
8,800.0	7,267.7	8,694.7	7,196.8	35.6	34.4	-80.30	-1,545.1	-187.6	415.2	347.7	67.49	6.152			
8,900.0	7,266.8	8,794.7	7,196.4	37.3	36.1	-80.38	-1,645.1	-187.7	415.2	344.3	70.89	5.856			
9,000.0	7,265.9	8,894.7	7,196.1	38.9	37.8	-80.46	-1,745.1	-187.8	415.1	340.7	74.33	5.584			
9,100.0	7,264.9	8,994.7	7,195.8	40.6	39.6	-80.55	-1,845.1	-187.8	415.0	337.2	77.81	5.334			
9,200.0	7,264.0	9,094.7	7,195.4	42.4	41.4	-80.63	-1,945.1	-187.9	414.9	333.6	81.32	5.103			
9,300.0	7,263.0	9,194.7	7,195.1	44.1	43.1	-80.72	-2,045.1	-188.0	414.9	330.0	84.86	4.889			
9,400.0	7,262.1	9,294.7	7,194.8	45.9	44.9	-80.80	-2,145.1	-188.1	414.8	326.4	88.42	4.692			
9,500.0	7,261.1	9,394.7	7,194.4	47.6	46.7	-80.88	-2,245.1	-188.1	414.7	322.7	92.00	4.508			
9,600.0	7,260.2	9,494.7	7,194.1	49.4	48.5	-80.97	-2,345.1	-188.2	414.7	319.1	95.60	4.338			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Gaddis 36E-323
Project:	SEC.36-T4N-R68W	TVD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	MD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Gaddis 36E-323	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 #4 (10-16-13)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:		0.0 ft
Gaddis Pad Sec.36-T4N-R68W - Gaddis 36J-243 - Wellbore #1 - Plan #2 (10-16-13)												Offset Well Error:		0.0 ft
Survey Program: 0-MWD														
Reference		Offset		Semi Major Axis			Distance					Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (")	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)		Separation Factor	
9,700.0	7,259.3	9,594.7	7,193.8	51.2	50.4	-81.05	-2,445.1	-188.3	414.6	315.4	99.22	4.179		
9,800.0	7,258.3	9,694.7	7,193.4	53.0	52.2	-81.14	-2,545.1	-188.4	414.6	311.7	102.86	4.030		
9,900.0	7,257.4	9,794.7	7,193.1	54.8	54.0	-81.22	-2,645.1	-188.4	414.5	308.0	106.51	3.892		
10,000.0	7,256.4	9,894.7	7,192.8	56.6	55.8	-81.31	-2,745.0	-188.5	414.4	304.3	110.17	3.762		
10,100.0	7,255.5	9,994.7	7,192.4	58.4	57.7	-81.39	-2,845.0	-188.6	414.4	300.5	113.84	3.640		
10,200.0	7,254.5	10,094.7	7,192.1	60.2	59.5	-81.47	-2,945.0	-188.7	414.3	296.8	117.53	3.525		
10,300.0	7,253.6	10,194.7	7,191.8	62.1	61.4	-81.56	-3,045.0	-188.7	414.3	293.0	121.22	3.417		
10,400.0	7,252.7	10,294.7	7,191.5	63.9	63.2	-81.64	-3,145.0	-188.8	414.2	289.3	124.93	3.316		
10,500.0	7,251.7	10,394.7	7,191.1	65.7	65.1	-81.73	-3,245.0	-188.9	414.1	285.5	128.64	3.219		
10,600.0	7,250.8	10,494.7	7,190.8	67.6	67.0	-81.81	-3,345.0	-188.9	414.1	281.7	132.36	3.129		
10,700.0	7,249.8	10,594.7	7,190.5	69.4	68.8	-81.90	-3,445.0	-189.0	414.0	278.0	136.09	3.042		
10,800.0	7,248.9	10,694.7	7,190.1	71.3	70.7	-81.98	-3,545.0	-189.1	414.0	274.2	139.82	2.961		
10,900.0	7,247.9	10,794.7	7,189.8	73.1	72.6	-82.06	-3,645.0	-189.2	413.9	270.4	143.56	2.883		
11,000.0	7,247.0	10,894.7	7,189.5	75.0	74.4	-82.15	-3,745.0	-189.2	413.9	266.6	147.31	2.810		
11,100.0	7,246.1	10,994.7	7,189.1	76.9	76.3	-82.23	-3,845.0	-189.3	413.8	262.8	151.06	2.739		
11,200.0	7,245.1	11,094.7	7,188.8	78.7	78.2	-82.32	-3,945.0	-189.4	413.8	259.0	154.82	2.673		
11,300.0	7,244.2	11,194.7	7,188.5	80.6	80.1	-82.40	-4,045.0	-189.5	413.7	255.2	158.58	2.609		
11,400.0	7,243.2	11,294.7	7,188.1	82.5	82.0	-82.49	-4,145.0	-189.5	413.7	251.3	162.35	2.548		
11,500.0	7,242.3	11,394.7	7,187.8	84.3	83.8	-82.57	-4,245.0	-189.6	413.6	247.5	166.12	2.490		
11,600.0	7,241.4	11,494.7	7,187.5	86.2	85.7	-82.65	-4,345.0	-189.7	413.6	243.7	169.89	2.434		
11,700.0	7,240.4	11,594.7	7,187.1	88.1	87.6	-82.74	-4,445.0	-189.7	413.5	239.9	173.67	2.381		
11,743.3	7,240.0	11,637.9	7,187.0	88.9	88.3	-82.78	-4,488.2	-189.8	413.5	238.4	175.17	2.361 SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Gaddis 36E-323
Project:	SEC.36-T4N-R68W	TVD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	MD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Gaddis 36E-323	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 #4 (10-16-13)	Offset TVD Reference:	Offset Datum

Offset Design		Gaddis Pad Sec.36-T4N-R68W - Gaddis 36J-3034 /Codell Sidetrack - Wellbore #2 Codell Sidetrack - P										Offset Site Error:		0.0 ft
Survey Program: -8-MWD, 7210-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	-8.0	-8.0	0.0	0.0	90.00	0.0	61.4	61.4					
100.0	100.0	91.0	91.0	0.1	0.1	90.00	0.0	61.4	61.4	61.2	0.22	274.483		
200.0	200.0	191.0	191.0	0.3	0.3	90.00	0.0	61.4	61.4	60.7	0.67	91.342		
300.0	300.0	291.0	291.0	0.6	0.6	90.00	0.0	61.4	61.4	60.3	1.12	54.732		
400.0	400.0	391.0	391.0	0.8	0.8	90.00	0.0	61.4	61.4	59.8	1.57	39.072		
500.0	500.0	491.0	491.0	1.0	1.0	90.00	0.0	61.4	61.4	59.4	2.02	30.380		
600.0	600.0	591.0	591.0	1.2	1.2	90.00	0.0	61.4	61.4	58.9	2.47	24.851		
700.0	700.0	691.0	691.0	1.5	1.5	90.00	0.0	61.4	61.4	58.5	2.92	21.025		
800.0	800.0	791.0	791.0	1.7	1.7	90.00	0.0	61.4	61.4	58.0	3.37	18.220	CC, ES	
900.0	900.0	891.0	891.0	1.9	1.9	157.02	0.0	61.4	63.0	59.2	3.81	16.530		
1,000.0	999.8	990.8	990.8	2.1	2.1	158.71	0.0	61.4	67.8	63.6	4.24	15.982		
1,100.0	1,099.5	1,090.5	1,090.5	2.4	2.4	161.04	0.0	61.4	76.0	71.3	4.68	16.251		
1,200.0	1,198.7	1,189.7	1,189.7	2.6	2.6	163.56	0.0	61.4	87.6	82.5	5.11	17.150		
1,300.0	1,297.7	1,288.7	1,288.7	2.9	2.8	165.84	0.0	61.4	101.4	95.9	5.55	18.271		
1,400.0	1,396.6	1,387.6	1,387.6	3.2	3.0	167.58	0.0	61.4	115.4	109.4	6.00	19.236		
1,500.0	1,495.6	1,486.6	1,486.6	3.5	3.2	168.94	0.0	61.4	129.4	123.0	6.45	20.071		
1,600.0	1,594.6	1,585.6	1,585.6	3.8	3.5	170.04	0.0	61.4	143.5	136.6	6.90	20.799		
1,700.0	1,693.6	1,684.6	1,684.6	4.1	3.7	170.94	0.0	61.4	157.6	150.3	7.35	21.437		
1,800.0	1,792.5	1,783.5	1,783.5	4.4	3.9	171.69	0.0	61.4	171.8	164.0	7.81	22.001		
1,900.0	1,891.5	1,882.5	1,882.5	4.8	4.1	172.33	0.0	61.4	186.0	177.7	8.26	22.503		
2,000.0	1,990.5	1,981.5	1,981.5	5.1	4.4	172.87	0.0	61.4	200.2	191.5	8.72	22.951		
2,100.0	2,089.4	2,080.4	2,080.4	5.4	4.6	173.35	0.0	61.4	214.4	205.2	9.18	23.354		
2,200.0	2,188.4	2,179.4	2,179.4	5.8	4.8	173.76	0.0	61.4	228.6	219.0	9.64	23.718		
2,300.0	2,287.4	2,278.4	2,278.4	6.1	5.0	174.13	0.0	61.4	242.9	232.8	10.10	24.048		
2,400.0	2,386.3	2,377.3	2,377.3	6.4	5.2	174.46	0.0	61.4	257.1	246.6	10.56	24.348		
2,500.0	2,485.3	2,476.3	2,476.3	6.8	5.5	174.75	0.0	61.4	271.4	260.4	11.02	24.623		
2,600.0	2,584.3	2,575.3	2,575.3	7.1	5.7	175.01	0.0	61.4	285.6	274.2	11.48	24.875		
2,700.0	2,683.2	2,674.2	2,674.2	7.5	5.9	175.25	0.0	61.4	299.9	288.0	11.95	25.108		
2,800.0	2,782.2	2,773.2	2,773.2	7.8	6.1	175.47	0.0	61.4	314.2	301.8	12.41	25.322		
2,900.0	2,881.2	2,872.2	2,872.2	8.1	6.4	175.66	0.0	61.4	328.5	315.6	12.87	25.521		
3,000.0	2,980.2	2,971.2	2,971.2	8.5	6.6	175.84	0.0	61.4	342.8	329.4	13.33	25.705		
3,100.0	3,079.1	3,070.4	3,070.4	8.8	6.8	175.84	1.0	61.7	357.0	343.2	13.80	25.875		
3,200.0	3,178.1	3,169.7	3,169.6	9.2	7.0	175.31	5.2	63.1	371.2	356.9	14.26	26.029		
3,300.0	3,277.1	3,268.7	3,268.2	9.5	7.3	174.30	12.7	65.4	385.3	370.6	14.72	26.168		
3,400.0	3,376.0	3,367.1	3,366.0	9.9	7.5	172.89	23.4	68.8	399.6	384.4	15.20	26.297		
3,500.0	3,475.0	3,465.1	3,463.1	10.2	7.7	171.20	36.5	73.0	414.3	398.6	15.68	26.419		
3,600.0	3,574.0	3,563.3	3,560.2	10.6	7.9	169.59	49.9	77.3	429.3	413.2	16.18	26.534		
3,700.0	3,672.9	3,661.4	3,657.4	10.9	8.2	168.09	63.3	81.6	444.7	428.0	16.69	26.644		
3,800.0	3,771.9	3,759.6	3,754.5	11.3	8.4	166.70	76.6	85.9	460.3	443.1	17.21	26.749		
3,900.0	3,870.9	3,857.8	3,851.7	11.6	8.7	165.39	90.0	90.1	476.2	458.4	17.73	26.848		
4,000.0	3,969.8	3,955.9	3,948.8	12.0	8.9	164.16	103.4	94.4	492.2	474.0	18.27	26.943		
4,100.0	4,068.8	4,054.1	4,046.0	12.3	9.2	163.02	116.8	98.7	508.6	489.7	18.81	27.034		
4,200.0	4,167.8	4,152.2	4,143.1	12.7	9.5	161.94	130.2	102.9	525.0	505.7	19.36	27.120		
4,300.0	4,266.8	4,250.4	4,240.3	13.0	9.8	160.93	143.5	107.2	541.7	521.8	19.91	27.203		
4,400.0	4,365.7	4,348.6	4,337.4	13.4	10.0	159.98	156.9	111.5	558.5	538.0	20.47	27.283		
4,500.0	4,464.7	4,446.7	4,434.6	13.7	10.3	159.09	170.3	115.7	575.5	554.4	21.03	27.359		
4,600.0	4,563.7	4,544.9	4,531.7	14.1	10.6	158.25	183.7	120.0	592.6	571.0	21.60	27.433		
4,700.0	4,662.6	4,643.1	4,628.9	14.4	10.9	157.45	197.1	124.3	609.8	587.6	22.17	27.504		
4,800.0	4,761.6	4,741.2	4,726.0	14.8	11.2	156.70	210.4	128.6	627.1	604.3	22.74	27.573		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Gaddis 36E-323
Project:	SEC.36-T4N-R68W	TVD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	MD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Gaddis 36E-323	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 #4 (10-16-13)	Offset TVD Reference:	Offset Datum

Offset Design		Gaddis Pad Sec.36-T4N-R68W - Gaddis 36J-3034 /Codell Sidetrack - Wellbore #2 Codell Sidetrack - P										Offset Site Error:		0.0 ft
Survey Program:		-8-MWD, 7210-MWD										Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
4,900.0	4,860.6	4,839.4	4,823.2	15.1	11.5	155.98	223.8	132.8	644.5	621.2	23.32	27.639		
5,000.0	4,959.5	4,940.6	4,923.4	15.5	11.8	155.31	237.3	137.1	661.9	638.0	23.89	27.707		
5,100.0	5,058.5	5,047.2	5,029.3	15.8	12.0	154.91	248.5	140.7	678.4	654.0	24.42	27.783		
5,200.0	5,157.5	5,154.3	5,136.2	16.2	12.2	154.83	256.0	143.1	693.8	668.9	24.90	27.860		
5,300.0	5,256.4	5,261.8	5,243.6	16.5	12.4	155.07	259.6	144.3	707.9	682.6	25.35	27.924		
5,400.0	5,355.5	5,364.7	5,346.5	16.8	12.6	155.58	260.0	144.4	720.4	694.6	25.79	27.935		
5,500.0	5,455.0	5,464.2	5,446.0	17.0	12.8	155.99	260.0	144.4	729.8	703.6	26.20	27.855		
5,600.0	5,554.7	5,564.0	5,545.7	17.2	13.0	156.25	260.0	144.4	736.0	709.4	26.59	27.680		
5,700.0	5,654.7	5,663.9	5,645.7	17.4	13.2	156.38	260.0	144.4	739.1	712.1	26.95	27.420		
5,800.0	5,754.7	5,763.9	5,745.7	17.5	13.4	90.00	260.0	144.4	739.4	712.1	27.32	27.060		
5,900.0	5,854.7	5,863.9	5,845.7	17.7	13.7	90.00	260.0	144.4	739.4	711.7	27.72	26.671		
6,000.0	5,954.7	5,963.9	5,945.7	17.9	13.9	90.00	260.0	144.4	739.4	711.3	28.12	26.292		
6,100.0	6,054.7	6,063.9	6,045.7	18.0	14.1	90.00	260.0	144.4	739.4	710.9	28.52	25.922		
6,200.0	6,154.7	6,163.9	6,145.7	18.2	14.3	90.00	260.0	144.4	739.4	710.5	28.93	25.561		
6,300.0	6,254.7	6,263.9	6,245.7	18.3	14.5	90.00	260.0	144.4	739.4	710.1	29.33	25.209		
6,400.0	6,354.7	6,363.9	6,345.7	18.5	14.7	90.00	260.0	144.4	739.4	709.7	29.74	24.865		
6,500.0	6,454.7	6,463.9	6,445.7	18.7	14.9	90.00	260.0	144.4	739.4	709.2	30.14	24.530		
6,547.4	6,502.1	6,511.3	6,493.1	18.7	15.0	-90.11	260.0	144.4	739.4	709.1	30.33	24.378		
6,600.0	6,554.7	6,563.9	6,545.7	18.8	15.1	-90.15	260.0	144.4	739.4	708.8	30.54	24.210		
6,700.0	6,653.9	6,663.4	6,645.2	18.9	15.3	-91.04	259.8	144.4	739.5	708.6	30.89	23.937		
6,800.0	6,750.7	6,765.8	6,746.9	19.0	15.4	-92.15	249.0	144.4	739.9	708.8	31.12	23.780		
6,900.0	6,843.5	6,870.7	6,847.9	19.0	15.5	-93.02	221.1	144.3	740.4	709.2	31.20	23.728		
7,000.0	6,930.6	6,977.7	6,944.8	19.0	15.5	-93.62	176.0	144.3	740.9	709.6	31.22	23.727		
7,100.0	7,010.6	7,086.0	7,033.8	19.0	15.5	-93.92	114.6	144.2	741.1	709.9	31.27	23.702		
7,200.0	7,082.0	7,194.7	7,111.4	19.0	15.6	-93.91	38.6	144.2	741.1	709.7	31.45	23.564		
7,300.0	7,143.8	7,472.4	7,261.9	19.1	16.4	-93.06	-191.3	114.4	730.9	698.3	32.54	22.463		
7,400.0	7,194.8	7,623.8	7,318.3	19.2	17.3	-93.66	-325.5	72.9	701.6	667.7	33.86	20.719		
7,500.0	7,234.1	7,700.0	7,342.3	19.5	17.9	-95.52	-394.8	52.4	674.2	639.3	34.91	19.314		
7,600.0	7,261.1	7,764.6	7,359.3	20.0	18.4	-97.42	-455.3	37.9	651.8	615.7	36.11	18.052		
7,700.0	7,275.2	7,837.1	7,374.6	20.7	19.1	-99.33	-525.0	24.8	635.0	597.4	37.61	16.883		
7,800.0	7,277.2	7,910.8	7,386.0	21.6	19.8	-100.96	-597.1	15.1	624.4	585.0	39.35	15.869		
7,900.0	7,276.2	7,986.1	7,393.3	22.6	20.7	-101.79	-671.8	8.8	618.3	577.1	41.26	14.986		
8,000.0	7,275.3	8,062.6	7,396.0	23.8	21.6	-102.15	-748.2	6.4	616.2	572.8	43.39	14.204		
8,010.5	7,275.2	8,071.8	7,396.0	23.9	21.7	-102.16	-757.4	6.3	616.2	572.6	43.64	14.121		
8,100.0	7,274.3	8,159.9	7,395.8	25.0	22.9	-102.21	-845.5	6.3	616.4	570.5	45.93	13.422		
8,200.0	7,273.4	8,259.9	7,395.5	26.4	24.3	-102.28	-945.5	6.3	616.7	568.0	48.68	12.667		
8,300.0	7,272.5	8,359.9	7,395.3	27.8	25.7	-102.34	-1,045.5	6.3	616.9	565.3	51.56	11.964		
8,400.0	7,271.5	8,459.9	7,395.0	29.3	27.2	-102.40	-1,145.5	6.2	617.1	562.6	54.55	11.313		
8,500.0	7,270.6	8,559.9	7,394.8	30.8	28.8	-102.46	-1,245.5	6.2	617.3	559.7	57.63	10.713		
8,600.0	7,269.6	8,659.9	7,394.6	32.4	30.4	-102.52	-1,345.5	6.2	617.6	556.8	60.78	10.161		
8,700.0	7,268.7	8,759.9	7,394.3	34.0	32.0	-102.59	-1,445.5	6.2	617.8	553.8	63.99	9.654		
8,800.0	7,267.7	8,859.9	7,394.1	35.6	33.7	-102.65	-1,545.5	6.1	618.0	550.8	67.26	9.189		
8,900.0	7,266.8	8,959.9	7,393.8	37.3	35.4	-102.71	-1,645.5	6.1	618.3	547.7	70.58	8.760		
9,000.0	7,265.9	9,059.9	7,393.6	38.9	37.1	-102.77	-1,745.5	6.1	618.5	544.6	73.93	8.366		
9,100.0	7,264.9	9,159.9	7,393.4	40.6	38.8	-102.83	-1,845.5	6.1	618.7	541.4	77.32	8.002		
9,200.0	7,264.0	9,259.9	7,393.1	42.4	40.6	-102.90	-1,945.5	6.0	619.0	538.2	80.74	7.666		
9,300.0	7,263.0	9,359.9	7,392.9	44.1	42.4	-102.96	-2,045.5	6.0	619.2	535.0	84.19	7.355		
9,400.0	7,262.1	9,459.9	7,392.6	45.9	44.1	-103.02	-2,145.5	6.0	619.4	531.8	87.66	7.067		
9,500.0	7,261.1	9,559.9	7,392.4	47.6	45.9	-103.08	-2,245.5	6.0	619.7	528.5	91.15	6.799		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Gaddis 36E-323
Project:	SEC.36-T4N-R68W	TVD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	MD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Gaddis 36E-323	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 #4 (10-16-13)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: -8-MWD, 7210-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
9,600.0	7,260.2	9,659.9	7,392.2	49.4	47.7	-103.14	-2,345.5	5.9	619.9	525.3	94.65	6.550		
9,700.0	7,259.3	9,759.9	7,391.9	51.2	49.5	-103.20	-2,445.5	5.9	620.2	522.0	98.17	6.317		
9,800.0	7,258.3	9,859.9	7,391.7	53.0	51.4	-103.26	-2,545.5	5.9	620.4	518.7	101.71	6.100		
9,900.0	7,257.4	9,959.9	7,391.4	54.8	53.2	-103.33	-2,645.5	5.9	620.6	515.4	105.26	5.896		
10,000.0	7,256.4	10,059.9	7,391.2	56.6	55.0	-103.39	-2,745.5	5.8	620.9	512.1	108.81	5.706		
10,100.0	7,255.5	10,159.9	7,391.0	58.4	56.9	-103.45	-2,845.5	5.8	621.1	508.7	112.38	5.527		
10,200.0	7,254.5	10,259.9	7,390.7	60.2	58.7	-103.51	-2,945.4	5.8	621.4	505.4	115.96	5.359		
10,300.0	7,253.6	10,359.9	7,390.5	62.1	60.5	-103.57	-3,045.4	5.8	621.6	502.1	119.54	5.200		
10,400.0	7,252.7	10,459.9	7,390.2	63.9	62.4	-103.63	-3,145.4	5.7	621.8	498.7	123.13	5.050		
10,500.0	7,251.7	10,559.9	7,390.0	65.7	64.3	-103.69	-3,245.4	5.7	622.1	495.4	126.73	4.909		
10,600.0	7,250.8	10,659.9	7,389.7	67.6	66.1	-103.75	-3,345.4	5.7	622.3	492.0	130.33	4.775		
10,700.0	7,249.8	10,759.9	7,389.5	69.4	68.0	-103.82	-3,445.4	5.6	622.6	488.6	133.93	4.648		
10,800.0	7,248.9	10,859.9	7,389.3	71.3	69.8	-103.88	-3,545.4	5.6	622.8	485.3	137.55	4.528		
10,900.0	7,247.9	10,959.9	7,389.0	73.1	71.7	-103.94	-3,645.4	5.6	623.1	481.9	141.16	4.414		
11,000.0	7,247.0	11,059.9	7,388.8	75.0	73.6	-104.00	-3,745.4	5.6	623.3	478.5	144.78	4.305		
11,100.0	7,246.1	11,159.9	7,388.5	76.9	75.5	-104.06	-3,845.4	5.5	623.6	475.2	148.40	4.202		
11,200.0	7,245.1	11,259.9	7,388.3	78.7	77.3	-104.12	-3,945.4	5.5	623.8	471.8	152.02	4.104		
11,300.0	7,244.2	11,359.9	7,388.1	80.6	79.2	-104.18	-4,045.4	5.5	624.1	468.4	155.65	4.010		
11,400.0	7,243.2	11,459.9	7,387.8	82.5	81.1	-104.24	-4,145.4	5.5	624.3	465.0	159.27	3.920		
11,500.0	7,242.3	11,559.9	7,387.6	84.3	83.0	-104.30	-4,245.4	5.4	624.6	461.7	162.90	3.834		
11,600.0	7,241.4	11,659.9	7,387.3	86.2	84.9	-104.36	-4,345.4	5.4	624.8	458.3	166.53	3.752		
11,700.0	7,240.4	11,759.8	7,387.1	88.1	86.7	-104.42	-4,445.4	5.4	625.1	454.9	170.17	3.673		
11,743.3	7,240.0	11,803.2	7,387.0	88.9	87.6	-104.45	-4,488.7	5.4	625.2	453.4	171.74	3.640 SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Gaddis 36E-323
Project:	SEC.36-T4N-R68W	TVD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	MD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Gaddis 36E-323	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 #4 (10-16-13)	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error:	0.0 ft
Survey Program: 0-MWD														Offset Well Error:	0.0 ft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		Separation Factor		Warning					
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	61.4	61.4						
100.0	100.0	99.0	99.0	0.1	0.1	90.00	0.0	61.4	61.4	61.2	0.22	274.483			
200.0	200.0	199.0	199.0	0.3	0.3	90.00	0.0	61.4	61.4	60.7	0.67	91.342			
300.0	300.0	299.0	299.0	0.6	0.6	90.00	0.0	61.4	61.4	60.3	1.12	54.732			
400.0	400.0	399.0	399.0	0.8	0.8	90.00	0.0	61.4	61.4	59.8	1.57	39.072			
500.0	500.0	499.0	499.0	1.0	1.0	90.00	0.0	61.4	61.4	59.4	2.02	30.380			
600.0	600.0	599.0	599.0	1.2	1.2	90.00	0.0	61.4	61.4	58.9	2.47	24.851			
700.0	700.0	699.0	699.0	1.5	1.5	90.00	0.0	61.4	61.4	58.5	2.92	21.025			
800.0	800.0	799.0	799.0	1.7	1.7	90.00	0.0	61.4	61.4	58.0	3.37	18.220 CC, ES			
900.0	900.0	899.0	899.0	1.9	1.9	157.02	0.0	61.4	63.0	59.2	3.81	16.530			
1,000.0	999.8	998.8	998.8	2.1	2.1	158.71	0.0	61.4	67.8	63.6	4.24	15.982			
1,100.0	1,099.5	1,098.5	1,098.5	2.4	2.4	161.04	0.0	61.4	76.0	71.3	4.68	16.251			
1,200.0	1,198.7	1,197.7	1,197.7	2.6	2.6	163.56	0.0	61.4	87.6	82.5	5.11	17.150			
1,300.0	1,297.7	1,296.7	1,296.7	2.9	2.8	165.84	0.0	61.4	101.4	95.9	5.55	18.271			
1,400.0	1,396.6	1,395.6	1,395.6	3.2	3.0	167.58	0.0	61.4	115.4	109.4	6.00	19.236			
1,500.0	1,495.6	1,494.6	1,494.6	3.5	3.2	168.94	0.0	61.4	129.4	123.0	6.45	20.071			
1,600.0	1,594.6	1,593.6	1,593.6	3.8	3.5	170.04	0.0	61.4	143.5	136.6	6.90	20.799			
1,700.0	1,693.6	1,692.6	1,692.6	4.1	3.7	170.94	0.0	61.4	157.6	150.3	7.35	21.437			
1,800.0	1,792.5	1,791.5	1,791.5	4.4	3.9	171.69	0.0	61.4	171.8	164.0	7.81	22.001			
1,900.0	1,891.5	1,890.5	1,890.5	4.8	4.1	172.33	0.0	61.4	186.0	177.7	8.26	22.503			
2,000.0	1,990.5	1,989.5	1,989.5	5.1	4.4	172.87	0.0	61.4	200.2	191.5	8.72	22.951			
2,100.0	2,089.4	2,088.4	2,088.4	5.4	4.6	173.35	0.0	61.4	214.4	205.2	9.18	23.354			
2,200.0	2,188.4	2,187.4	2,187.4	5.8	4.8	173.76	0.0	61.4	228.6	219.0	9.64	23.717			
2,300.0	2,287.4	2,286.4	2,286.4	6.1	5.0	174.13	0.0	61.4	242.9	232.8	10.10	24.047			
2,400.0	2,386.3	2,385.3	2,385.3	6.4	5.2	174.46	0.0	61.4	257.1	246.6	10.56	24.348			
2,500.0	2,485.3	2,484.3	2,484.3	6.8	5.5	174.75	0.0	61.4	271.4	260.4	11.02	24.623			
2,600.0	2,584.3	2,583.3	2,583.3	7.1	5.7	175.01	0.0	61.4	285.6	274.2	11.48	24.875			
2,700.0	2,683.2	2,682.2	2,682.2	7.5	5.9	175.25	0.0	61.4	299.9	288.0	11.95	25.107			
2,800.0	2,782.2	2,781.2	2,781.2	7.8	6.1	175.47	0.0	61.4	314.2	301.8	12.41	25.322			
2,900.0	2,881.2	2,880.2	2,880.2	8.1	6.4	175.66	0.0	61.4	328.5	315.6	12.87	25.521			
3,000.0	2,980.2	2,979.2	2,979.2	8.5	6.6	175.84	0.0	61.4	342.8	329.4	13.33	25.705			
3,100.0	3,079.1	3,078.4	3,078.4	8.8	6.8	175.84	1.0	61.7	357.0	343.2	13.80	25.875			
3,200.0	3,178.1	3,177.7	3,177.6	9.2	7.0	175.31	5.2	63.1	371.2	356.9	14.26	26.029			
3,300.0	3,277.1	3,276.7	3,276.2	9.5	7.3	174.30	12.7	65.4	385.3	370.6	14.73	26.168			
3,400.0	3,376.0	3,375.1	3,374.0	9.9	7.5	172.89	23.4	68.8	399.6	384.4	15.20	26.297			
3,500.0	3,475.0	3,473.1	3,471.1	10.2	7.7	171.20	36.5	73.0	414.3	398.6	15.68	26.418			
3,600.0	3,574.0	3,571.3	3,568.2	10.6	7.9	169.59	49.9	77.3	429.3	413.2	16.18	26.534			
3,700.0	3,672.9	3,669.4	3,665.4	10.9	8.2	168.09	63.3	81.6	444.7	428.0	16.69	26.644			
3,800.0	3,771.9	3,767.6	3,762.5	11.3	8.4	166.70	76.6	85.9	460.3	443.1	17.21	26.748			
3,900.0	3,870.9	3,865.8	3,859.7	11.6	8.7	165.39	90.0	90.1	476.2	458.4	17.74	26.848			
4,000.0	3,969.8	3,963.9	3,956.8	12.0	8.9	164.16	103.4	94.4	492.2	474.0	18.27	26.943			
4,100.0	4,068.8	4,062.1	4,054.0	12.3	9.2	163.02	116.8	98.7	508.6	489.7	18.81	27.033			
4,200.0	4,167.8	4,160.2	4,151.1	12.7	9.5	161.94	130.2	102.9	525.0	505.7	19.36	27.120			
4,300.0	4,266.8	4,258.4	4,248.3	13.0	9.8	160.93	143.5	107.2	541.7	521.8	19.91	27.203			
4,400.0	4,365.7	4,356.6	4,345.4	13.4	10.0	159.98	156.9	111.5	558.5	538.0	20.47	27.283			
4,500.0	4,464.7	4,454.7	4,442.6	13.7	10.3	159.09	170.3	115.7	575.5	554.4	21.03	27.359			
4,600.0	4,563.7	4,552.9	4,539.7	14.1	10.6	158.25	183.7	120.0	592.6	571.0	21.60	27.433			
4,700.0	4,662.6	4,651.1	4,636.9	14.4	10.9	157.45	197.1	124.3	609.8	587.6	22.17	27.504			
4,800.0	4,761.6	4,749.2	4,734.0	14.8	11.2	156.70	210.4	128.6	627.1	604.3	22.74	27.573			

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Gaddis 36E-323
Project:	SEC.36-T4N-R68W	TVD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	MD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Gaddis 36E-323	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 #4 (10-16-13)	Offset TVD Reference:	Offset Datum

Offset Design										Gaddis Pad Sec.36-T4N-R68W - Gaddis 36J-3034 /Codell Sidetrack - Wellbore 1 Gaddis 36J-3034 - PI				Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft		
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
4,900.0	4,860.6	4,847.4	4,831.2	15.1	11.5	155.98	223.8	132.8	644.5	621.2	23.32	27.639				
5,000.0	4,959.5	4,948.6	4,931.4	15.5	11.8	155.31	237.3	137.1	661.9	638.0	23.89	27.707				
5,100.0	5,058.5	5,055.2	5,037.3	15.8	12.0	154.91	248.5	140.7	678.4	654.0	24.42	27.783				
5,200.0	5,157.5	5,162.3	5,144.2	16.2	12.2	154.83	256.0	143.1	693.8	668.9	24.90	27.859				
5,300.0	5,256.4	5,269.8	5,251.6	16.5	12.4	155.07	259.6	144.3	707.9	682.6	25.35	27.924				
5,400.0	5,355.5	5,372.7	5,354.5	16.8	12.6	155.58	260.0	144.4	720.4	694.6	25.79	27.935				
5,500.0	5,455.0	5,472.2	5,454.0	17.0	12.8	155.99	260.0	144.4	729.8	703.6	26.20	27.854				
5,600.0	5,554.7	5,572.0	5,553.7	17.2	13.0	156.25	260.0	144.4	736.0	709.4	26.59	27.680				
5,700.0	5,654.7	5,671.9	5,653.7	17.4	13.2	156.38	260.0	144.4	739.1	712.1	26.95	27.420				
5,800.0	5,754.7	5,771.9	5,753.7	17.5	13.4	90.00	260.0	144.4	739.4	712.1	27.32	27.060				
5,900.0	5,854.7	5,871.9	5,853.7	17.7	13.7	90.00	260.0	144.4	739.4	711.7	27.72	26.671				
6,000.0	5,954.7	5,971.9	5,953.7	17.9	13.9	90.00	260.0	144.4	739.4	711.3	28.12	26.292				
6,100.0	6,054.7	6,071.9	6,053.7	18.0	14.1	90.00	260.0	144.4	739.4	710.9	28.52	25.922				
6,200.0	6,154.7	6,171.9	6,153.7	18.2	14.3	90.00	260.0	144.4	739.4	710.5	28.93	25.561				
6,300.0	6,254.7	6,271.9	6,253.7	18.3	14.5	90.00	260.0	144.4	739.4	710.1	29.33	25.209				
6,400.0	6,354.7	6,371.9	6,353.7	18.5	14.7	90.00	260.0	144.4	739.4	709.7	29.74	24.865				
6,500.0	6,454.7	6,471.9	6,453.7	18.7	14.9	90.00	260.0	144.4	739.4	709.2	30.14	24.530				
6,547.4	6,502.1	6,519.3	6,501.1	18.7	15.0	-90.11	260.0	144.4	739.4	709.1	30.33	24.378				
6,600.0	6,554.7	6,571.9	6,553.7	18.8	15.1	-90.15	260.0	144.4	739.4	708.8	30.54	24.210				
6,700.0	6,653.9	6,671.4	6,653.2	18.9	15.3	-91.04	259.8	144.4	739.5	708.6	30.89	23.937				
6,800.0	6,750.7	6,773.8	6,754.9	19.0	15.4	-92.15	249.0	144.4	739.9	708.8	31.12	23.780				
6,900.0	6,843.5	6,878.7	6,855.9	19.0	15.5	-93.02	221.1	144.3	740.4	709.2	31.20	23.728				
7,000.0	6,930.6	6,985.7	6,952.8	19.0	15.5	-93.62	176.0	144.3	740.9	709.6	31.22	23.727				
7,100.0	7,010.6	7,094.0	7,041.8	19.0	15.5	-93.92	114.6	144.2	741.1	709.9	31.27	23.702				
7,200.0	7,082.0	7,202.7	7,119.4	19.0	15.6	-93.91	38.6	144.2	741.1	709.7	31.45	23.563				
7,300.0	7,143.8	7,310.9	7,182.6	19.1	15.7	-93.59	-49.0	144.1	740.9	709.0	31.90	23.228				
7,400.0	7,194.8	7,417.7	7,229.7	19.2	16.1	-92.98	-144.8	144.0	740.4	707.7	32.68	22.657				
7,500.0	7,234.1	7,522.6	7,259.7	19.5	16.7	-92.09	-245.1	143.9	739.9	706.1	33.83	21.870				
7,600.0	7,261.1	7,624.7	7,272.7	20.0	17.5	-90.97	-346.4	143.8	739.5	704.2	35.33	20.934				
7,683.3	7,273.8	7,707.6	7,273.0	20.5	18.2	-90.02	-429.2	143.7	739.4	702.6	36.80	20.094				
7,700.0	7,275.2	7,724.3	7,272.9	20.7	18.4	-89.89	-445.9	143.7	739.4	702.3	37.11	19.923				
7,800.0	7,277.2	7,824.2	7,272.0	21.6	19.5	-89.68	-545.8	143.6	739.4	700.2	39.18	18.871				
7,900.0	7,276.2	7,924.2	7,271.2	22.6	20.6	-89.69	-645.8	143.5	739.4	697.9	41.51	17.813				
8,000.0	7,275.3	8,024.2	7,270.4	23.8	21.9	-89.70	-745.8	143.4	739.4	695.4	44.05	16.785				
8,100.0	7,274.3	8,124.2	7,269.5	25.0	23.3	-89.70	-845.8	143.3	739.4	692.7	46.77	15.810				
8,200.0	7,273.4	8,224.2	7,268.7	26.4	24.7	-89.71	-945.8	143.2	739.4	689.8	49.64	14.897				
8,300.0	7,272.5	8,324.2	7,267.8	27.8	26.2	-89.72	-1,045.8	143.1	739.4	686.8	52.63	14.051				
8,400.0	7,271.5	8,424.2	7,267.0	29.3	27.8	-89.73	-1,145.8	142.9	739.4	683.7	55.72	13.271				
8,500.0	7,270.6	8,524.2	7,266.2	30.8	29.4	-89.74	-1,245.8	142.8	739.4	680.5	58.90	12.554				
8,600.0	7,269.6	8,624.2	7,265.3	32.4	31.0	-89.74	-1,345.7	142.7	739.4	677.3	62.16	11.896				
8,700.0	7,268.7	8,724.2	7,264.5	34.0	32.7	-89.75	-1,445.7	142.6	739.5	674.0	65.48	11.293				
8,800.0	7,267.7	8,824.2	7,263.7	35.6	34.4	-89.76	-1,545.7	142.5	739.5	670.6	68.85	10.740				
8,900.0	7,266.8	8,924.2	7,262.8	37.3	36.1	-89.77	-1,645.7	142.4	739.5	667.2	72.27	10.232				
9,000.0	7,265.9	9,024.2	7,262.0	38.9	37.8	-89.78	-1,745.7	142.3	739.5	663.7	75.73	9.764				
9,100.0	7,264.9	9,124.2	7,261.1	40.6	39.6	-89.79	-1,845.7	142.2	739.5	660.2	79.23	9.333				
9,200.0	7,264.0	9,224.2	7,260.3	42.4	41.3	-89.79	-1,945.7	142.1	739.5	656.7	82.75	8.936				
9,300.0	7,263.0	9,324.2	7,259.5	44.1	43.1	-89.80	-2,045.7	142.0	739.5	653.2	86.31	8.568				
9,400.0	7,262.1	9,424.2	7,258.6	45.9	44.9	-89.81	-2,145.7	141.9	739.5	649.6	89.88	8.227				
9,500.0	7,261.1	9,524.2	7,257.8	47.6	46.7	-89.82	-2,245.7	141.8	739.5	646.0	93.48	7.911				

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Gaddis 36E-323
Project:	SEC.36-T4N-R68W	TVD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	MD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Gaddis 36E-323	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 #4 (10-16-13)	Offset TVD Reference:	Offset Datum

Offset Design Gaddis Pad Sec.36-T4N-R68W - Gaddis 36J-3034 /Codell Sidetrack - Wellbore 1 Gaddis 36J-3034 - PI													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Offset Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Reference	Reference	Reference	Reference	Reference	Offset		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
9,600.0	7,260.2	9,624.2	7,256.9	49.4	48.5	-89.83	-2,345.7	141.7	739.5	642.4	97.09	7.616		
9,700.0	7,259.3	9,724.2	7,256.1	51.2	50.3	-89.83	-2,445.7	141.6	739.5	638.8	100.73	7.342		
9,800.0	7,258.3	9,824.2	7,255.3	53.0	52.2	-89.84	-2,545.7	141.5	739.5	635.1	104.37	7.085		
9,900.0	7,257.4	9,924.2	7,254.4	54.8	54.0	-89.85	-2,645.7	141.4	739.5	631.5	108.03	6.845		
10,000.0	7,256.4	10,024.2	7,253.6	56.6	55.8	-89.86	-2,745.7	141.3	739.5	627.8	111.70	6.620		
10,100.0	7,255.5	10,124.2	7,252.8	58.4	57.7	-89.87	-2,845.7	141.2	739.5	624.1	115.39	6.409		
10,200.0	7,254.5	10,224.2	7,251.9	60.2	59.5	-89.87	-2,945.7	141.1	739.5	620.4	119.08	6.210		
10,300.0	7,253.6	10,324.2	7,251.1	62.1	61.4	-89.88	-3,045.7	141.0	739.5	616.7	122.78	6.023		
10,400.0	7,252.7	10,424.2	7,250.2	63.9	63.2	-89.89	-3,145.7	140.9	739.5	613.0	126.49	5.846		
10,500.0	7,251.7	10,524.2	7,249.4	65.7	65.1	-89.90	-3,245.7	140.8	739.5	609.3	130.21	5.679		
10,600.0	7,250.8	10,624.2	7,248.6	67.6	67.0	-89.91	-3,345.7	140.7	739.5	605.6	133.93	5.522		
10,700.0	7,249.8	10,724.2	7,247.7	69.4	68.8	-89.91	-3,445.7	140.6	739.5	601.9	137.66	5.372		
10,800.0	7,248.9	10,824.2	7,246.9	71.3	70.7	-89.92	-3,545.7	140.5	739.5	598.1	141.40	5.230		
10,900.0	7,247.9	10,924.2	7,246.1	73.1	72.6	-89.93	-3,645.7	140.4	739.5	594.4	145.14	5.095		
11,000.0	7,247.0	11,024.2	7,245.2	75.0	74.4	-89.94	-3,745.7	140.3	739.5	590.6	148.89	4.967		
11,100.0	7,246.1	11,124.2	7,244.4	76.9	76.3	-89.95	-3,845.7	140.2	739.5	586.9	152.64	4.845		
11,200.0	7,245.1	11,224.2	7,243.5	78.7	78.2	-89.96	-3,945.7	140.1	739.5	583.1	156.39	4.729		
11,300.0	7,244.2	11,324.2	7,242.7	80.6	80.1	-89.96	-4,045.6	140.0	739.5	579.4	160.15	4.618		
11,400.0	7,243.2	11,424.2	7,241.9	82.5	82.0	-89.97	-4,145.6	139.9	739.5	575.6	163.92	4.512		
11,500.0	7,242.3	11,524.2	7,241.0	84.3	83.8	-89.98	-4,245.6	139.8	739.5	571.9	167.68	4.410		
11,600.0	7,241.4	11,624.2	7,240.2	86.2	85.7	-89.99	-4,345.6	139.7	739.5	568.1	171.45	4.313		
11,700.0	7,240.4	11,724.2	7,239.4	88.1	87.5	-90.00	-4,445.6	139.6	739.6	564.4	175.14	4.223		
11,722.3	7,240.2	11,746.5	7,239.2	88.5	87.9	-90.00	-4,467.9	139.5	739.6	563.7	175.90	4.204		
11,743.3	7,240.0	11,766.8	7,239.0	88.9	88.2	-90.00	-4,488.2	139.5	739.6	562.9	176.60	4.188 SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Gaddis 36E-323
Project:	SEC.36-T4N-R68W	TVD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	MD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Gaddis 36E-323	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 #4 (10-16-13)	Offset TVD Reference:	Offset Datum

Offset Design		Gaddis Pad Sec.36-T4N-R68W - State Corsair 13-36 (Exist.) - Wellbore #1 - Wellbore #1										Offset Site Error:		0.0 ft		
Survey Program: 7300-UNKNOWN														Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	 +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
9,500.0	7,261.1	7,224.1	7,224.1	47.6	144.5	-92.34	-3,194.9	-379.5	974.7	783.5	191.20	5.098				
9,600.0	7,260.2	7,223.2	7,223.2	49.4	144.5	-92.09	-3,194.9	-379.5	877.5	684.5	193.01	4.547				
9,700.0	7,259.3	7,222.3	7,222.3	51.2	144.4	-91.85	-3,194.9	-379.5	781.1	586.3	194.82	4.009				
9,800.0	7,258.3	7,221.3	7,221.3	53.0	144.4	-91.60	-3,194.9	-379.5	685.7	489.1	196.63	3.487				
9,900.0	7,257.4	7,220.4	7,220.4	54.8	144.4	-91.35	-3,194.9	-379.5	591.8	393.4	198.45	2.982				
10,000.0	7,256.4	7,219.4	7,219.4	56.6	144.4	-91.11	-3,194.9	-379.5	500.3	300.0	200.28	2.498				
10,100.0	7,255.5	7,218.5	7,218.5	58.4	144.4	-90.86	-3,194.9	-379.5	412.7	210.6	202.10	2.042				
10,200.0	7,254.5	7,217.5	7,217.5	60.2	144.4	-90.62	-3,194.9	-379.5	332.3	128.3	203.93	1.629				
10,300.0	7,253.6	7,216.6	7,216.6	62.1	144.3	-90.37	-3,194.9	-379.5	265.4	59.7	205.76	1.290	Level 3			
10,400.0	7,252.7	7,215.7	7,215.7	63.9	144.3	-90.12	-3,194.9	-379.5	224.7	17.1	207.59	1.082	Level 2			
10,449.8	7,252.2	7,215.2	7,215.2	64.8	144.3	-90.00	-3,194.9	-379.5	219.1	10.6	208.50	1.051	Level 2, CC, ES, SF			
10,500.0	7,251.7	7,214.7	7,214.7	65.7	144.3	-89.88	-3,194.9	-379.5	224.8	15.4	209.42	1.073	Level 2			
10,600.0	7,250.8	7,213.8	7,213.8	67.6	144.3	-89.63	-3,194.9	-379.5	265.7	54.4	211.25	1.258	Level 3			
10,700.0	7,249.8	7,212.8	7,212.8	69.4	144.3	-89.38	-3,194.9	-379.5	332.6	119.5	213.08	1.561				
10,800.0	7,248.9	7,211.9	7,211.9	71.3	144.2	-89.14	-3,194.9	-379.5	413.1	198.2	214.90	1.922				
10,900.0	7,247.9	7,210.9	7,210.9	73.1	144.2	-88.89	-3,194.9	-379.5	500.7	284.0	216.73	2.310				
11,000.0	7,247.0	7,210.0	7,210.0	75.0	144.2	-88.64	-3,194.9	-379.5	592.2	373.7	218.56	2.710				
11,100.0	7,246.1	7,209.1	7,209.1	76.9	144.2	-88.40	-3,194.9	-379.5	686.1	465.7	220.38	3.113				
11,200.0	7,245.1	7,208.1	7,208.1	78.7	144.2	-88.15	-3,194.9	-379.5	781.5	559.3	222.20	3.517				
11,300.0	7,244.2	7,207.2	7,207.2	80.6	144.1	-87.91	-3,194.9	-379.5	878.0	654.0	224.02	3.919				
11,400.0	7,243.2	7,206.2	7,206.2	82.5	144.1	-87.66	-3,194.9	-379.5	975.1	749.3	225.84	4.318				

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Gaddis 36E-323
Project:	SEC.36-T4N-R68W	TVD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Reference Site:	Gaddis Pad Sec.36-T4N-R68W	MD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Gaddis 36E-323	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 #4 (10-16-13)	Offset TVD Reference:	Offset Datum

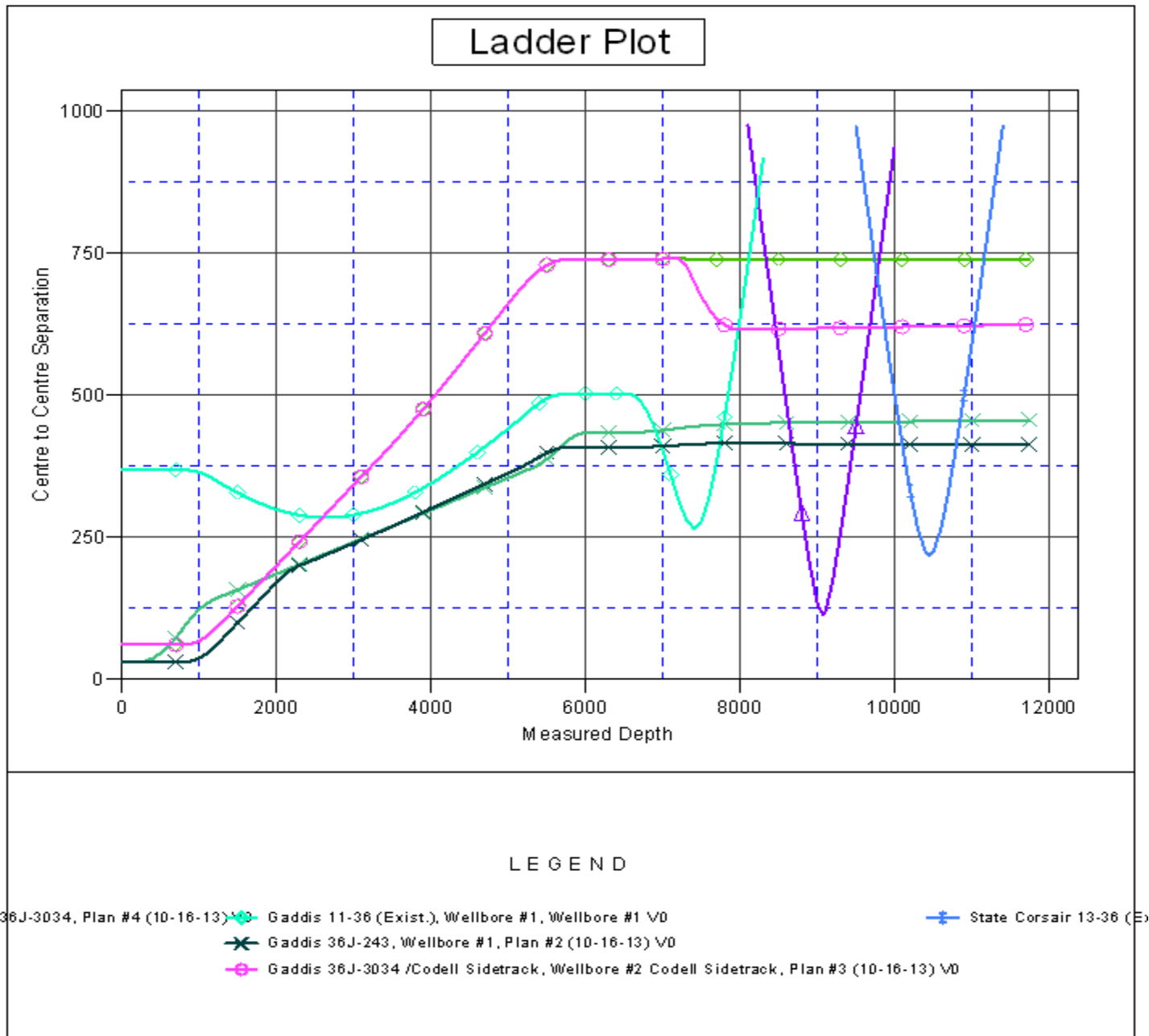
Reference Depths are relative to WELL @ 5082.0ft (Ensign Rig #119 - Coordinates are relative to: Gaddis 36E-323

Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.35°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Gaddis 36E-323
Project:	SEC.36-T4N-R68W	TVD Reference:	WELL @ 5082.0ft (Ensign Rig #119 - RKB -23')
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Site Error:	0.0ft	North Reference:	True
Reference Well:	Gaddis 36E-323	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 #4 (10-16-13)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 5082.0ft (Ensign Rig #119 - Coordinates are relative to: Gaddis 36E-323
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Central Meridian is -105.500000 °
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