

US ROCKIES REGION PLANNING

**COLORADO NORTHERN ZONE - 83
WELD_PINNACLE 2-2HZ
P_PINNACLE 2-2HZ**

**P_PINNACLE 2-2HZ
P_Pinnacle 2-2HZ (wp03)**

Anticollision Report

04 November, 2010



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_PINNACLE 2-2HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Reference Site:	WELD_PINNACLE 2-2HZ	MD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Site Error:	0.0 ft	North Reference:	True
Reference Well:	P_PINNACLE 2-2HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	P_PINNACLE 2-2HZ	Database:	edm5000p
Reference Design:	P_Pinnacle 2-2HZ (wp03)	Offset TVD Reference:	Offset Datum

Reference	P_Pinnacle 2-2HZ (wp03)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD + Stations Interval 100.0ft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.0 ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date 11/4/2010			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	12,041.6	P_Pinnacle 2-2HZ (wp03) (P_PINNACLE :		

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						
WELD_PINNACLE 15-2 PAD						
A_COSSLETT A #4 - A_COSSLETT A #4 - A_COSSLETT						Out of range
A_COSSLETT A #9 - A_COSSLETT A #9 - A_COSSLETT						Out of range
A_COSSLETT UNIT F#1 - A_COSSLETT UNIT F#1 - A_COSSLETT	0.0	0.0	988.0			
A_COSSLETT UNIT F#1 - A_COSSLETT UNIT F#1 - A_COSSLETT	100.0	61.2	987.8			
A_HSR-LEPPLA #16-2 - A_HSR-LEPPLA #16-2 - A_HSR-LEPPLA						Out of range
A_HSR-LEPPLA #16-2 - A_HSR-LEPPLA #16-2 - A_HSR-LEPPLA	8,624.3	7,521.0	902.3			
A_LEPPLA ESTATE #1 - A_LEPPLA ESTATE #1 - A_LEPPLA	0.0	0.0	247.4			
A_LEPPLA ESTATE #1 - A_LEPPLA ESTATE #1 - A_LEPPLA	100.0	74.2	246.8			
A_LEPPLA ESTATE #4 - A_LEPPLA ESTATE #4 - A_LEPPLA						Out of range
P_PINNACLE 10-2 - P_PINNACLE 10-2 - PLAN #2 9-29	1,050.0	1,047.0	82.6	80.3	37.119	CC, ES
P_PINNACLE 10-2 - P_PINNACLE 10-2 - PLAN #2 9-29	9,161.1	7,796.1	216.4	183.1	6.493	SF
P_PINNACLE 15-2 - P_PINNACLE 15-2 - PLAN #1 8-17	7,843.6	7,532.2	26.0	8.7	1.500	CC, ES, SF
P_PINNACLE 16-2 - P_PINNACLE 16-2 - PLAN #1 8-17	1,050.0	1,047.0	100.3	98.1	45.111	CC, ES
P_PINNACLE 16-2 - P_PINNACLE 16-2 - PLAN #1 8-17	1,300.0	1,289.9	114.3	111.5	41.754	SF
P_PINNACLE 23-2 - P_PINNACLE 23-2 - PLAN #1 8-17	1,050.0	1,047.0	79.8	77.5	35.865	CC, ES
P_PINNACLE 23-2 - P_PINNACLE 23-2 - PLAN #1 8-17	8,528.0	7,653.3	560.2	535.9	23.013	SF
P_PINNACLE 37-2 - P_PINNACLE 37-2 - PLAN #1 8-17	1,050.0	1,047.0	89.4	87.2	40.215	CC, ES
P_PINNACLE 37-2 - P_PINNACLE 37-2 - PLAN #1 8-17	1,800.0	1,792.0	131.8	127.8	32.880	SF
P_PINNACLE 39-2 - P_PINNACLE 39-2 - PLAN #1 9-10	300.0	297.0	94.7	85.1	9.882	CC
P_PINNACLE 39-2 - P_PINNACLE 39-2 - PLAN #1 9-10	400.0	394.2	96.1	83.4	7.601	ES
P_PINNACLE 39-2 - P_PINNACLE 39-2 - PLAN #1 9-10	900.0	872.3	150.1	121.6	5.266	SF
P_PINNACLE 9-2 - P_Pinnacle 9-2 - PLAN #1 8-17-10 R	1,050.0	1,047.0	85.6	83.3	38.470	CC, ES
P_PINNACLE 9-2 - P_Pinnacle 9-2 - PLAN #1 8-17-10 R	1,179.4	1,172.6	90.8	88.3	36.315	SF

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Reference Site:	WELD_PINNACLE 2-2HZ	MD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Site Error:	0.0 ft	North Reference:	True
Reference Well:	P_PINNACLE 2-2HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	P_PINNACLE 2-2HZ	Database:	edm5000p
Reference Design:	P_Pinnacle 2-2HZ (wp03)	Offset TVD Reference:	Offset Datum

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						
WELD_PINNACLE 17-2 PAD						
A_COSSLETT #1 - A_COSSLETT #1 - A_COSSLETT #1						Out of range
A_COSSLETT #2 - A_COSSLETT #2 - A_COSSLETT #2						Out of range
A_HSR-LEPPLA #7-2 - A_HSR-LEPPLA #7-2 - A_HSR-LEPPLA #7-2						Out of range
A_HSR-LEPPLA #7-2 - A_HSR-LEPPLA #7-2 - A_HSR-LEPPLA #7-2	10,886.5	7,505.9	232.3			
A_LEPPLA ESTATE #2 DA - A_LEPPLA ESTATE #2 DA						Out of range
A_LEPPLA ESTATE #2X - A_LEPPLA ESTATE #2X - A_LEPPLA ESTATE #2X						Out of range
A_LEPPLA ESTATE #3 - A_LEPPLA ESTATE #3 - A_LEPPLA ESTATE #3						Out of range
P_PINNACLE 1-2 - P_PINNACLE 1-2 - Plan #2 9-8-10 R						Out of range
P_PINNACLE 17-2 - P_PINNACLE 17-2 - Plan #2 9-8-10 R	11,234.1	7,496.0	760.8	744.6	46.897	CC, ES, SF
P_PINNACLE 2-2 - P_PINNACLE 2-2 - Plan #2 9-8-10 R	11,834.7	7,532.6	295.1	276.5	15.874	CC, ES, SF
P_PINNACLE 24-2 - P_PINNACLE 24-2 - Plan #2 9-8-10 R	9,887.8	7,744.9	614.5	582.5	19.231	CC, ES, SF
P_PINNACLE 25-2 - P_PINNACLE 25-2 - Plan #2 9-8-10 R	9,912.1	7,913.2	510.4	474.8	14.330	CC, ES, SF
P_PINNACLE 34-36 - P_PINNACLE 34-36 - Plan #2 9-8-10 R						Out of range
P_PINNACLE 40-2 - P_PINNACLE 40-2 - Plan #2 9-8-10 R						Out of range
P_PINNACLE 8-2 - P_PINNACLE 8-2 - Plan #2 9-8-10 R						Out of range

Offset Design												WELD_PINNACLE 15-2 PAD - A_COSSLETT UNIT F#1 - A_COSSLETT UNIT F#1 - A_COSSLETT UN		Offset Site Error:		0.0 ft					
Survey Program: 0-Reference												Offset		Semi Major Axis		Distance		Offset Well Error:		0.0 ft	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore +N/-S (ft)	Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning								
0.0	0.0	0.0	0.0	0.0		42.15	732.2	662.7	988.0												
100.0	100.0	61.2	61.2	0.0		42.13	732.5	662.7	987.8												
200.0	200.0	149.8	149.8	0.0		42.07	734.2	662.7	989.2												
300.0	300.0	243.3	243.3	0.0		41.95	737.2	662.7	991.6												
400.0	400.0	343.3	343.1	0.0		41.82	740.7	662.7	994.2												
500.0	500.0	443.2	443.0	0.0		41.68	744.2	662.7	996.8												
600.0	600.0	543.1	542.9	0.0		41.55	747.7	662.7	999.4												

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Reference Site:	WELD_PINNACLE 2-2HZ	MD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Site Error:	0.0 ft	North Reference:	True
Reference Well:	P_PINNACLE 2-2HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	P_PINNACLE 2-2HZ	Database:	edm5000p
Reference Design:	P_Pinnacle 2-2HZ (wp03)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
WELD_PINNACLE 15-2 PAD - A_HSR-LEPPLA #16-2 - A_HSR-LEPPLA #16-2 - A_HSR-LEPPLA #16-												Offset Well Error:	0.0 ft
Survey Program: 0-													
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
8,200.0	7,535.9	7,506.8	7,502.3	0.0		89.03	1,155.7	893.5	997.1				
8,300.0	7,535.8	7,510.2	7,505.7	0.0		89.26	1,155.8	893.5	958.8				
8,400.0	7,535.7	7,513.5	7,509.0	0.0		89.47	1,156.0	893.5	929.8				
8,500.0	7,535.5	7,516.9	7,512.4	0.0		89.69	1,156.1	893.5	910.8				
8,600.0	7,535.3	7,520.2	7,515.7	0.0		89.90	1,156.2	893.5	902.6				
8,624.3	7,535.2	7,521.0	7,516.5	0.0		89.95	1,156.2	893.5	902.3				
8,700.0	7,535.1	7,523.4	7,518.9	0.0		90.11	1,156.3	893.5	905.5				
8,800.0	7,534.8	7,526.6	7,522.1	0.0		90.31	1,156.4	893.5	919.2				
8,900.0	7,534.5	7,529.8	7,525.3	0.0		90.50	1,156.5	893.5	943.5				
9,000.0	7,534.2	7,533.0	7,528.5	0.0		90.70	1,156.6	893.5	977.4				

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Reference Site:	WELD_PINNACLE 2-2HZ	MD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Site Error:	0.0 ft	North Reference:	True
Reference Well:	P_PINNACLE 2-2HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	P_PINNACLE 2-2HZ	Database:	edm5000p
Reference Design:	P_Pinnacle 2-2HZ (wp03)	Offset TVD Reference:	Offset Datum

Offset Design		WELD_PINNACLE 15-2 PAD - A_LEPPLA ESTATE #1 - A_LEPPLA ESTATE #1 - A_LEPPLA ESTATE										Offset Site Error:		0.0 ft
Survey Program: 0-Reference		Offset		Semi Major Axis		Distance		Distance		Minimum Separation		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)	Separation Factor			
0.0	0.0	0.0	0.0	0.0		28.72	216.0	118.4	247.4					
100.0	100.0	74.2	74.2	0.0		28.67	216.5	118.4	246.8					
200.0	200.0	170.5	170.5	0.0		28.44	218.6	118.4	248.6					
300.0	300.0	269.3	269.3	0.0		28.07	221.9	118.4	251.6					
400.0	400.0	369.3	369.1	0.0		27.71	225.4	118.4	254.7					
500.0	500.0	469.2	469.0	0.0		27.35	228.9	118.4	257.8					
600.0	600.0	569.2	568.9	0.0		26.99	232.4	118.4	260.9					
700.0	700.0	669.1	668.8	0.0		26.65	235.9	118.4	264.0					
800.0	800.0	769.0	768.6	0.0		26.31	239.4	118.4	267.2					
900.0	900.0	869.0	868.5	0.0		25.99	242.9	118.4	270.3					
1,000.0	1,000.0	968.9	968.4	0.0		25.67	246.3	118.4	273.4					
1,050.0	1,050.0	1,018.9	1,018.3	0.0		25.51	248.1	118.4	275.0					
1,100.0	1,100.0	1,068.8	1,068.3	0.0		-149.47	249.8	118.4	277.0					
1,179.4	1,179.3	1,148.0	1,147.4	0.0		-149.92	252.6	118.4	281.6					
1,200.0	1,199.9	1,168.6	1,168.0	0.0		-150.07	253.3	118.4	283.1					
1,300.0	1,299.8	1,268.3	1,267.6	0.0		-150.81	256.8	118.4	290.2					
1,400.0	1,399.7	1,367.9	1,367.2	0.0		-151.50	260.3	118.4	297.3					
1,500.0	1,499.6	1,467.6	1,466.8	0.0		-152.17	263.8	118.4	304.5					
1,600.0	1,599.5	1,567.3	1,566.4	0.0		-152.80	267.2	118.4	311.8					
1,700.0	1,699.4	1,667.0	1,666.1	0.0		-153.40	270.7	118.4	319.0					
1,800.0	1,799.3	1,766.7	1,765.7	0.0		-153.98	274.2	118.4	326.3					
1,900.0	1,899.2	1,866.3	1,865.3	0.0		-154.53	277.7	118.4	333.7					
2,000.0	1,999.1	1,966.0	1,964.9	0.0		-155.06	281.1	118.4	341.0					
2,100.0	2,099.0	2,065.7	2,064.5	0.0		-155.57	284.6	118.4	348.4					
2,200.0	2,198.9	2,165.4	2,164.2	0.0		-156.05	288.1	118.4	355.8					
2,300.0	2,298.8	2,265.1	2,263.8	0.0		-156.52	291.6	118.4	363.3					
2,400.0	2,398.7	2,364.7	2,363.4	0.0		-156.97	295.1	118.4	370.7					
2,500.0	2,498.6	2,464.4	2,463.0	0.0		-157.40	298.5	118.4	378.2					
2,600.0	2,598.5	2,564.1	2,562.6	0.0		-157.81	302.0	118.4	385.7					
2,700.0	2,698.4	2,663.8	2,662.2	0.0		-158.20	305.5	118.4	393.3					
2,800.0	2,798.3	2,763.5	2,761.9	0.0		-158.59	309.0	118.4	400.8					
2,900.0	2,898.2	2,863.2	2,861.5	0.0		-158.95	312.5	118.4	408.4					
3,000.0	2,998.1	2,962.8	2,961.1	0.0		-159.31	315.9	118.4	415.9					
3,100.0	3,098.0	3,062.5	3,060.7	0.0		-159.65	319.4	118.4	423.5					
3,200.0	3,197.9	3,162.2	3,160.3	0.0		-159.98	322.9	118.4	431.1					
3,300.0	3,297.8	3,261.9	3,260.0	0.0		-160.30	326.4	118.4	438.7					
3,400.0	3,397.7	3,361.6	3,359.6	0.0		-160.60	329.8	118.4	446.4					
3,500.0	3,497.6	3,461.2	3,459.2	0.0		-160.90	333.3	118.4	454.0					
3,600.0	3,597.5	3,560.9	3,558.8	0.0		-161.19	336.8	118.4	461.7					
3,700.0	3,697.4	3,660.6	3,658.4	0.0		-161.46	340.3	118.4	469.3					
3,800.0	3,797.3	3,760.3	3,758.1	0.0		-161.73	343.8	118.4	477.0					
3,900.0	3,897.2	3,860.0	3,857.7	0.0		-161.99	347.2	118.4	484.7					
4,000.0	3,997.1	3,959.6	3,957.3	0.0		-162.25	350.7	118.4	492.4					
4,100.0	4,097.0	4,059.3	4,056.9	0.0		-162.49	354.2	118.4	500.1					
4,200.0	4,196.9	4,159.0	4,156.5	0.0		-162.73	357.7	118.4	507.8					
4,300.0	4,296.8	4,258.7	4,256.2	0.0		-162.96	361.2	118.4	515.6					
4,400.0	4,396.7	4,358.4	4,355.8	0.0		-163.18	364.6	118.4	523.3					
4,500.0	4,496.6	4,458.0	4,455.4	0.0		-163.40	368.1	118.4	531.0					
4,600.0	4,596.5	4,557.7	4,555.0	0.0		-163.61	371.6	118.4	538.8					
4,700.0	4,696.4	4,657.4	4,654.6	0.0		-163.81	375.1	118.4	546.5					
4,800.0	4,796.3	4,757.1	4,754.3	0.0		-164.01	378.6	118.4	554.3					
4,900.0	4,896.2	4,856.8	4,853.9	0.0		-164.20	382.0	118.4	562.1					

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

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Site Error:	0.0 ft	North Reference:	True
Reference Well:	P_PINNACLE 2-2HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	P_PINNACLE 2-2HZ	Database:	edm5000p
Reference Design:	P_Pinnacle 2-2HZ (wp03)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
WELD_PINNACLE 15-2 PAD - A_LEPPLA ESTATE #1 - A_LEPPLA ESTATE #1 - A_LEPPLA ESTATE												Offset Well Error:	0.0 ft
Survey Program: 0-													
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
5,000.0	4,996.1	4,956.4	4,953.5	0.0		-164.39	385.5	118.4	569.8				
5,100.0	5,096.0	5,056.1	5,053.1	0.0		-164.57	389.0	118.4	577.6				
5,200.0	5,195.9	5,155.8	5,152.7	0.0		-164.75	392.5	118.4	585.4				
5,300.0	5,295.8	5,235.0	5,231.9	0.0		-164.89	395.2	118.4	593.5				
5,400.0	5,395.7	5,235.0	5,231.9	0.0		-164.89	395.2	118.4	612.9				
5,500.0	5,495.6	5,235.0	5,231.9	0.0		-164.89	395.2	118.4	647.3				
5,600.0	5,595.4	5,235.0	5,231.9	0.0		-164.89	395.2	118.4	694.5				
5,700.0	5,695.3	5,235.0	5,231.9	0.0		-164.89	395.2	118.4	752.1				
5,800.0	5,795.2	5,235.0	5,231.9	0.0		-164.89	395.2	118.4	817.9				
5,900.0	5,895.1	5,235.0	5,231.9	0.0		-164.89	395.2	118.4	890.1				
6,000.0	5,995.0	5,235.0	5,231.9	0.0		-164.89	395.2	118.4	967.3				

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_PINNACLE 2-2HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Reference Site:	WELD_PINNACLE 2-2HZ	MD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Site Error:	0.0 ft	North Reference:	True
Reference Well:	P_PINNACLE 2-2HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	P_PINNACLE 2-2HZ	Database:	edm5000p
Reference Design:	P_Pinnacle 2-2HZ (wp03)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-												Offset Well Error:	0.0 ft
WELD_PINNACLE 15-2 PAD - P_PINNACLE 10-2 - P_PINNACLE 10-2 - PLAN #2 9-29-10 RHS													
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
0.0	0.0	0.0	0.0	0.0	0.0	13.93	80.1	19.9	82.6				
100.0	100.0	97.0	97.0	0.0	0.1	13.93	80.1	19.9	82.6	82.5	0.09	889.116	
200.0	200.0	197.0	197.0	0.0	0.3	13.93	80.1	19.9	82.6	82.2	0.31	263.150	
300.0	300.0	297.0	297.0	0.0	0.5	13.93	80.1	19.9	82.6	82.0	0.54	153.316	
400.0	400.0	397.0	397.0	0.0	0.8	13.93	80.1	19.9	82.6	81.8	0.76	108.169	
500.0	500.0	497.0	497.0	0.0	1.0	13.93	80.1	19.9	82.6	81.6	0.99	83.562	
600.0	600.0	597.0	597.0	0.0	1.2	13.93	80.1	19.9	82.6	81.4	1.21	68.076	
700.0	700.0	697.0	697.0	0.0	1.4	13.93	80.1	19.9	82.6	81.1	1.44	57.432	
800.0	800.0	797.0	797.0	0.0	1.7	13.93	80.1	19.9	82.6	80.9	1.66	49.667	
900.0	900.0	897.0	897.0	0.0	1.9	13.93	80.1	19.9	82.6	80.7	1.89	43.751	
1,000.0	1,000.0	997.0	997.0	0.0	2.1	13.93	80.1	19.9	82.6	80.5	2.11	39.095	
1,050.0	1,050.0	1,047.0	1,047.0	0.0	2.2	13.93	80.1	19.9	82.6	80.3	2.22	37.119 CC, ES	
1,100.0	1,100.0	1,095.7	1,095.7	0.0	2.3	-160.99	80.5	19.9	83.3	81.0	2.33	35.718	
1,179.4	1,179.3	1,172.6	1,172.6	0.0	2.5	-161.67	82.7	20.2	88.0	85.5	2.50	35.135	
1,200.0	1,199.9	1,192.6	1,192.5	0.0	2.6	-161.92	83.7	20.3	89.8	87.3	2.55	35.236	
1,300.0	1,299.8	1,288.8	1,288.5	0.0	2.8	-163.12	90.0	20.9	100.8	98.0	2.77	36.423	
1,400.0	1,399.7	1,384.1	1,383.4	0.0	3.0	-164.20	99.5	22.0	115.0	112.0	2.98	38.575	
1,500.0	1,499.6	1,478.5	1,476.9	0.0	3.2	-165.12	111.9	23.3	132.6	129.4	3.20	41.486	
1,600.0	1,599.5	1,571.7	1,568.8	0.0	3.5	-165.88	127.2	25.0	153.3	149.9	3.41	44.993	
1,700.0	1,699.4	1,663.4	1,658.8	0.0	3.8	-166.49	145.2	27.0	177.3	173.7	3.62	48.969	
1,800.0	1,799.3	1,753.7	1,746.6	0.0	4.1	-166.98	165.6	29.2	204.3	200.5	3.83	53.314	
1,900.0	1,899.2	1,842.3	1,832.2	0.0	4.4	-167.37	188.4	31.7	234.4	230.3	4.04	57.950	
2,000.0	1,999.1	1,929.1	1,915.4	0.0	4.8	-167.67	213.2	34.4	267.3	263.1	4.26	62.812	
2,100.0	2,099.0	2,014.0	1,995.9	0.0	5.2	-167.91	239.9	37.3	303.1	298.6	4.47	67.852	
2,200.0	2,198.9	2,101.0	2,077.6	0.0	5.7	-168.11	269.4	40.5	341.4	336.7	4.69	72.811	
2,300.0	2,298.8	2,193.1	2,164.1	0.0	6.2	-168.28	301.2	44.0	380.1	375.2	4.93	77.164	
2,400.0	2,398.7	2,285.3	2,250.6	0.0	6.8	-168.42	332.9	47.5	418.9	413.7	5.17	81.042	
2,500.0	2,498.6	2,377.5	2,337.0	0.0	7.3	-168.54	364.6	51.0	457.7	452.3	5.42	84.510	
2,600.0	2,598.5	2,469.7	2,423.5	0.0	7.9	-168.64	396.4	54.4	496.4	490.8	5.67	87.621	
2,700.0	2,698.4	2,561.9	2,510.0	0.0	8.5	-168.72	428.1	57.9	535.2	529.3	5.92	90.420	
2,800.0	2,798.3	2,654.0	2,596.4	0.0	9.0	-168.79	459.9	61.4	574.0	567.8	6.18	92.949	
2,900.0	2,898.2	2,746.2	2,682.9	0.0	9.6	-168.86	491.6	64.8	612.7	606.3	6.43	95.240	
3,000.0	2,998.1	2,838.4	2,769.4	0.0	10.2	-168.91	523.4	68.3	651.5	644.8	6.69	97.322	
3,100.0	3,098.0	2,930.6	2,855.9	0.0	10.8	-168.96	555.1	71.8	690.3	683.3	6.96	99.221	
3,200.0	3,197.9	3,022.7	2,942.3	0.0	11.4	-169.01	586.9	75.2	729.0	721.8	7.22	100.957	
3,300.0	3,297.8	3,114.9	3,028.8	0.0	12.0	-169.04	618.6	78.7	767.8	760.3	7.49	102.549	
3,400.0	3,397.7	3,207.1	3,115.3	0.0	12.6	-169.08	650.4	82.2	806.6	798.8	7.75	104.012	
3,500.0	3,497.6	3,299.3	3,201.7	0.0	13.2	-169.11	682.1	85.6	845.4	837.3	8.02	105.361	
3,600.0	3,597.5	3,391.5	3,288.2	0.0	13.8	-169.14	713.9	89.1	884.1	875.8	8.29	106.607	
3,700.0	3,697.4	3,483.6	3,374.7	0.0	14.4	-169.17	745.6	92.6	922.9	914.3	8.56	107.761	
3,800.0	3,797.3	3,575.8	3,461.1	0.0	15.1	-169.20	777.4	96.1	961.7	952.8	8.84	108.832	
8,200.0	7,535.9	7,798.4	7,532.9	0.0	33.4	90.21	1,675.7	194.2	985.3	951.9	33.34	29.554	
8,300.0	7,535.8	7,798.3	7,532.8	0.0	33.4	90.27	1,675.7	194.2	988.0	954.6	33.34	26.636	
8,400.0	7,535.7	7,798.2	7,532.7	0.0	33.4	90.30	1,675.7	194.2	991.3	958.0	33.34	23.738	
8,500.0	7,535.5	7,798.0	7,532.5	0.0	33.4	90.32	1,675.7	194.2	995.7	962.3	33.34	20.869	
8,600.0	7,535.3	7,797.8	7,532.3	0.0	33.4	90.32	1,675.7	194.2	1001.4	968.1	33.33	18.042	
8,700.0	7,535.1	7,797.6	7,532.1	0.0	33.4	90.31	1,675.7	194.2	1009.4	976.1	33.33	15.281	
8,800.0	7,534.8	7,797.3	7,531.8	0.0	33.4	90.27	1,675.7	194.2	1021.0	987.7	33.33	12.630	
8,900.0	7,534.5	7,797.0	7,531.5	0.0	33.4	90.22	1,675.7	194.2	1039.1	1005.8	33.33	10.174	
9,000.0	7,534.2	7,796.7	7,531.2	0.0	33.4	90.15	1,675.7	194.2	1069.8	1036.5	33.33	8.094	
9,100.0	7,533.8	7,796.3	7,530.8	0.0	33.4	90.06	1,675.7	194.2	1124.9	1115.5	33.33	6.746	
9,161.1	7,533.6	7,796.1	7,530.6	0.0	33.4	90.00	1,675.7	194.2	1216.4	1183.1	33.33	6.493 SF	

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

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_PINNACLE 2-2HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Reference Site:	WELD_PINNACLE 2-2HZ	MD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Site Error:	0.0 ft	North Reference:	True
Reference Well:	P_PINNACLE 2-2HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	P_PINNACLE 2-2HZ	Database:	edm5000p
Reference Design:	P_Pinnacle 2-2HZ (wp03)	Offset TVD Reference:	Offset Datum

Offset Design		WELD_PINNACLE 15-2 PAD - P_PINNACLE 10-2 - P_PINNACLE 10-2 - PLAN #2 9-29-10 RHS										Offset Site Error:	0.0 ft
Survey Program: 0-												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
9,200.0	7,533.4	7,795.9	7,530.4	0.0	33.4	89.96	1,675.7	194.2	219.9	186.6	33.33	6.597	
9,300.0	7,533.0	7,795.5	7,530.0	0.0	33.4	89.83	1,675.7	194.2	257.2	223.9	33.33	7.716	
9,400.0	7,532.5	7,795.0	7,529.5	0.0	33.4	89.69	1,675.7	194.2	322.4	289.1	33.33	9.672	
9,500.0	7,532.0	7,794.5	7,529.0	0.0	33.4	89.54	1,675.7	194.2	402.2	368.8	33.33	12.065	
9,600.0	7,531.5	7,794.0	7,528.5	0.0	33.4	89.36	1,675.7	194.2	489.4	456.1	33.33	14.684	
9,700.0	7,530.9	7,793.4	7,527.9	0.0	33.4	89.17	1,675.7	194.2	580.8	547.5	33.33	17.426	
9,800.0	7,530.3	7,792.8	7,527.3	0.0	33.4	88.96	1,675.7	194.2	674.7	641.3	33.33	20.243	
9,900.0	7,529.7	7,792.2	7,526.7	0.0	33.4	88.73	1,675.7	194.2	770.1	736.7	33.33	23.106	
10,000.0	7,529.0	7,791.5	7,526.0	0.0	33.4	88.48	1,675.7	194.2	866.5	833.2	33.32	26.002	
10,100.0	7,528.3	7,790.8	7,525.3	0.0	33.4	88.21	1,675.7	194.2	963.7	930.3	33.32	28.921	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_PINNACLE 2-2HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Reference Site:	WELD_PINNACLE 2-2HZ	MD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Site Error:	0.0 ft	North Reference:	True
Reference Well:	P_PINNACLE 2-2HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	P_PINNACLE 2-2HZ	Database:	edm5000p
Reference Design:	P_Pinnacle 2-2HZ (wp03)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-												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
0.0	0.0	0.0	0.0	0.0	0.0	7.00	79.8	9.8	80.4				
100.0	100.0	97.0	97.0	0.0	0.1	7.00	79.8	9.8	80.4	80.3	0.09	865.424	
200.0	200.0	197.0	197.0	0.0	0.3	7.00	79.8	9.8	80.4	80.0	0.31	256.138	
300.0	300.0	297.0	297.0	0.0	0.5	7.00	79.8	9.8	80.4	79.8	0.54	149.231	
400.0	400.0	397.0	397.0	0.0	0.8	7.00	79.8	9.8	80.4	79.6	0.76	105.286	
500.0	500.0	497.0	497.0	0.0	1.0	7.00	79.8	9.8	80.4	79.4	0.99	81.335	
600.0	600.0	597.0	597.0	0.0	1.2	7.00	79.8	9.8	80.4	79.2	1.21	66.262	
700.0	700.0	697.0	697.0	0.0	1.4	7.00	79.8	9.8	80.4	78.9	1.44	55.902	
800.0	800.0	797.0	797.0	0.0	1.7	7.00	79.8	9.8	80.4	78.7	1.66	48.343	
900.0	900.0	897.0	897.0	0.0	1.9	7.00	79.8	9.8	80.4	78.5	1.89	42.585	
1,000.0	1,000.0	997.0	997.0	0.0	2.1	7.00	79.8	9.8	80.4	78.3	2.11	38.053	
1,050.0	1,050.0	1,047.0	1,047.0	0.0	2.2	7.00	79.8	9.8	80.4	78.1	2.22	36.130	
1,100.0	1,100.0	1,095.7	1,095.7	0.0	2.3	-167.86	80.1	9.8	81.2	78.8	2.33	34.782	
1,179.4	1,179.3	1,172.7	1,172.7	0.0	2.5	-168.22	82.4	10.1	85.9	83.4	2.51	34.301	
1,200.0	1,199.9	1,192.6	1,192.6	0.0	2.6	-168.35	83.3	10.1	87.8	85.2	2.55	34.429	
1,300.0	1,299.8	1,291.9	1,291.7	0.0	2.8	-168.93	88.5	10.6	97.5	94.7	2.77	35.148	
1,400.0	1,399.7	1,391.4	1,391.1	0.0	3.0	-169.40	93.7	11.2	107.1	104.1	3.00	35.762	
1,500.0	1,499.6	1,491.0	1,490.5	0.0	3.2	-169.80	98.9	11.7	116.8	113.6	3.22	36.290	
1,600.0	1,599.5	1,590.5	1,589.9	0.0	3.5	-170.13	104.1	12.2	126.5	123.1	3.44	36.747	
1,700.0	1,699.4	1,690.0	1,689.3	0.0	3.7	-170.42	109.3	12.7	136.2	132.6	3.67	37.147	
1,800.0	1,799.3	1,789.5	1,788.6	0.0	3.9	-170.67	114.6	13.2	145.9	142.0	3.89	37.499	
1,900.0	1,899.2	1,889.1	1,888.0	0.0	4.2	-170.89	119.8	13.7	155.6	151.5	4.12	37.813	
2,000.0	1,999.1	1,988.6	1,987.4	0.0	4.4	-171.09	125.0	14.2	165.4	161.0	4.34	38.093	
2,100.0	2,099.0	2,088.1	2,086.8	0.0	4.6	-171.26	130.2	14.7	175.1	170.5	4.57	38.345	
2,200.0	2,198.9	2,187.6	2,186.2	0.0	4.9	-171.41	135.4	15.2	184.8	180.0	4.79	38.572	
2,300.0	2,298.8	2,287.2	2,285.6	0.0	5.1	-171.55	140.6	15.8	194.5	189.5	5.02	38.779	
2,400.0	2,398.7	2,386.7	2,385.0	0.0	5.3	-171.67	145.8	16.3	204.2	199.0	5.24	38.967	
2,500.0	2,498.6	2,486.2	2,484.4	0.0	5.6	-171.79	151.1	16.8	213.9	208.5	5.47	39.140	
2,600.0	2,598.5	2,585.7	2,583.7	0.0	5.8	-171.89	156.3	17.3	223.6	217.9	5.69	39.298	
2,700.0	2,698.4	2,685.3	2,683.1	0.0	6.0	-171.99	161.5	17.8	233.4	227.4	5.92	39.445	
2,800.0	2,798.3	2,784.8	2,782.5	0.0	6.3	-172.08	166.7	18.3	243.1	236.9	6.14	39.580	
2,900.0	2,898.2	2,884.3	2,881.9	0.0	6.5	-172.16	171.9	18.8	252.8	246.4	6.37	39.705	
3,000.0	2,998.1	2,983.8	2,981.3	0.0	6.8	-172.23	177.1	19.3	262.5	255.9	6.59	39.822	
3,100.0	3,098.0	3,083.4	3,080.7	0.0	7.0	-172.30	182.3	19.8	272.2	265.4	6.82	39.931	
3,200.0	3,197.9	3,182.9	3,180.1	0.0	7.2	-172.37	187.6	20.4	281.9	274.9	7.04	40.032	
3,300.0	3,297.8	3,282.4	3,279.5	0.0	7.5	-172.43	192.8	20.9	291.7	284.4	7.27	40.128	
3,400.0	3,397.7	3,381.9	3,378.9	0.0	7.7	-172.48	198.0	21.4	301.4	293.9	7.49	40.217	
3,500.0	3,497.6	3,481.5	3,478.2	0.0	8.0	-172.54	203.2	21.9	311.1	303.4	7.72	40.301	
3,600.0	3,597.5	3,581.0	3,577.6	0.0	8.2	-172.59	208.4	22.4	320.8	312.9	7.95	40.380	
3,700.0	3,697.4	3,680.5	3,677.0	0.0	8.4	-172.63	213.6	22.9	330.5	322.4	8.17	40.454	
3,800.0	3,797.3	3,780.1	3,776.4	0.0	8.7	-172.68	218.8	23.4	340.3	331.9	8.40	40.525	
3,900.0	3,897.2	3,879.6	3,875.8	0.0	8.9	-172.72	224.0	23.9	350.0	341.4	8.62	40.591	
4,000.0	3,997.1	3,979.1	3,975.2	0.0	9.2	-172.76	229.3	24.4	359.7	350.9	8.85	40.655	
4,100.0	4,097.0	4,078.6	4,074.6	0.0	9.4	-172.79	234.5	24.9	369.4	360.4	9.07	40.715	
4,200.0	4,196.9	4,178.2	4,174.0	0.0	9.6	-172.83	239.7	25.5	379.1	369.8	9.30	40.771	
4,300.0	4,296.8	4,277.7	4,273.3	0.0	9.9	-172.86	244.9	26.0	388.9	379.3	9.53	40.826	
4,400.0	4,396.7	4,377.2	4,372.7	0.0	10.1	-172.90	250.1	26.5	398.6	388.8	9.75	40.877	
4,500.0	4,496.6	4,476.7	4,472.1	0.0	10.4	-172.93	255.3	27.0	408.3	398.3	9.98	40.926	
4,600.0	4,596.5	4,576.3	4,571.5	0.0	10.6	-172.96	260.5	27.5	418.0	407.8	10.20	40.973	
4,700.0	4,696.4	4,675.8	4,670.9	0.0	10.8	-172.98	265.8	28.0	427.8	417.3	10.43	41.018	
4,800.0	4,796.3	4,775.3	4,770.3	0.0	11.1	-173.01	271.0	28.5	437.5	426.8	10.65	41.061	
4,900.0	4,896.2	4,874.8	4,869.7	0.0	11.3	-173.04	276.2	29.0	447.2	436.3	10.88	41.102	

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

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_PINNACLE 2-2HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Reference Site:	WELD_PINNACLE 2-2HZ	MD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Site Error:	0.0 ft	North Reference:	True
Reference Well:	P_PINNACLE 2-2HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	P_PINNACLE 2-2HZ	Database:	edm5000p
Reference Design:	P_Pinnacle 2-2HZ (wp03)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-													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		
5,000.0	4,996.1	4,974.4	4,969.1	0.0	11.6	-173.06	281.4	29.5	456.9	445.8	11.11	41.141		
5,100.0	5,096.0	5,073.9	5,068.5	0.0	11.8	-173.08	286.6	30.1	466.6	455.3	11.33	41.179		
5,200.0	5,195.9	5,173.4	5,167.8	0.0	12.0	-173.11	291.8	30.6	476.4	464.8	11.56	41.215		
5,300.0	5,295.8	5,272.9	5,267.2	0.0	12.3	-173.13	297.0	31.1	486.1	474.3	11.78	41.250		
5,400.0	5,395.7	5,372.5	5,366.6	0.0	12.5	-173.15	302.3	31.6	495.8	483.8	12.01	41.283		
5,500.0	5,495.6	5,472.0	5,466.0	0.0	12.8	-173.17	307.5	32.1	505.5	493.3	12.24	41.315		
5,600.0	5,595.4	5,571.5	5,565.4	0.0	13.0	-173.19	312.7	32.6	515.3	502.8	12.46	41.346		
5,700.0	5,695.3	5,671.0	5,664.8	0.0	13.2	-173.21	317.9	33.1	525.0	512.3	12.69	41.375		
5,800.0	5,795.2	5,770.6	5,764.2	0.0	13.5	-173.22	323.1	33.6	534.7	521.8	12.91	41.404		
5,900.0	5,895.1	5,870.1	5,863.6	0.0	13.7	-173.24	328.3	34.1	544.4	531.3	13.14	41.431		
6,000.0	5,995.0	5,969.6	5,962.9	0.0	14.0	-173.26	333.5	34.6	554.1	540.8	13.37	41.458		
6,100.0	6,094.9	6,069.2	6,062.3	0.0	14.2	-173.27	338.8	35.2	563.9	550.3	13.59	41.484		
6,200.0	6,194.8	6,168.7	6,161.7	0.0	14.4	-173.29	344.0	35.7	573.6	559.8	13.82	41.508		
6,300.0	6,294.7	6,268.2	6,261.1	0.0	14.7	-173.30	349.2	36.2	583.3	569.3	14.04	41.532		
6,400.0	6,394.6	6,368.9	6,361.7	0.0	14.9	-173.33	353.7	36.6	591.6	577.3	14.26	41.549		
6,500.0	6,494.5	6,468.7	6,461.5	0.0	15.1	-173.39	354.1	36.7	596.4	581.9	14.46	41.571		
6,600.0	6,594.4	6,568.6	6,561.4	0.0	15.3	-173.43	354.1	36.7	600.9	586.2	14.68	40.920		
6,700.0	6,694.3	6,668.5	6,661.3	0.0	15.5	-173.48	354.1	36.7	605.4	590.5	14.91	40.611		
6,793.3	6,787.5	6,761.7	6,754.5	0.0	15.7	-173.53	354.1	36.7	609.5	594.4	15.11	40.330		
6,800.0	6,794.2	6,768.4	6,761.2	0.0	15.7	-172.54	354.1	36.7	609.8	594.7	15.14	40.285		
6,850.0	6,844.2	6,818.4	6,811.2	0.0	15.8	-2.41	354.1	36.7	609.8	594.6	15.28	39.904		
6,900.0	6,894.1	6,868.3	6,861.1	0.0	15.9	0.99	354.1	36.7	606.4	591.0	15.37	39.454		
6,950.0	6,943.6	6,917.8	6,910.6	0.0	16.1	1.69	354.1	36.7	599.5	584.1	15.40	38.935		
7,000.0	6,992.5	6,966.7	6,959.5	0.0	16.2	2.05	354.1	36.7	589.1	573.8	15.36	38.345		
7,050.0	7,040.6	7,014.8	7,007.6	0.0	16.3	2.31	354.1	36.7	575.4	560.1	15.27	37.680		
7,100.0	7,087.6	7,061.7	7,054.5	0.0	16.4	2.56	354.1	36.7	558.4	543.2	15.12	36.931		
7,150.0	7,133.2	7,107.4	7,100.2	0.0	16.5	2.82	354.1	36.7	538.1	523.2	14.91	36.091		
7,200.0	7,177.4	7,151.6	7,144.4	0.0	16.5	3.13	354.1	36.7	514.7	500.0	14.64	35.146		
7,250.0	7,219.8	7,194.0	7,186.8	0.0	16.6	3.49	354.1	36.7	488.2	473.9	14.33	34.080		
7,300.0	7,260.3	7,234.5	7,227.3	0.0	16.7	3.96	354.1	36.7	458.9	445.0	13.96	32.870		
7,350.0	7,298.6	7,272.8	7,265.6	0.0	16.8	4.55	354.1	36.7	426.9	413.3	13.56	31.491		
7,400.0	7,334.6	7,308.8	7,301.6	0.0	16.9	5.33	354.1	36.7	392.3	379.1	13.12	29.905		
7,450.0	7,368.1	7,342.3	7,335.1	0.0	17.0	6.39	354.1	36.7	355.2	342.6	12.66	28.065		
7,500.0	7,398.9	7,403.1	7,395.9	0.0	17.0	7.88	354.1	36.7	316.0	303.8	12.20	25.909		
7,550.0	7,426.9	7,431.1	7,423.9	0.0	17.1	10.06	354.1	36.7	274.7	262.9	11.77	23.345		
7,600.0	7,451.9	7,456.1	7,448.9	0.0	17.1	13.41	354.1	36.7	231.7	220.2	11.45	20.240		
7,650.0	7,473.8	7,478.0	7,470.8	0.0	17.2	18.91	354.1	36.7	187.1	175.7	11.40	16.406		
7,700.0	7,492.6	7,496.8	7,489.6	0.0	17.2	28.54	354.1	36.7	141.4	129.3	12.06	11.721		
7,750.0	7,508.1	7,512.3	7,505.1	0.0	17.3	45.74	354.1	36.7	95.0	81.0	14.06	6.759		
7,800.0	7,520.2	7,524.4	7,517.2	0.0	17.3	70.96	354.1	36.7	50.2	33.5	16.62	3.018		
7,843.6	7,528.0	7,532.2	7,525.0	0.0	17.3	90.00	354.1	36.7	26.0	8.7	17.30	1.500 CC, ES, SF		
7,850.0	7,528.9	7,533.1	7,525.9	0.0	17.3	91.95	354.1	36.7	26.7	9.4	17.29	1.545		
7,900.0	7,534.2	7,538.4	7,531.2	0.0	17.3	98.66	354.1	36.7	61.7	44.6	17.16	3.599		
7,950.6	7,536.0	7,540.2	7,533.0	0.0	17.3	90.00	354.1	36.7	109.7	92.4	17.31	6.335		
8,000.0	7,536.0	7,540.2	7,533.0	0.0	17.3	89.94	354.1	36.7	158.1	140.8	17.31	9.133		
8,100.0	7,536.0	7,540.2	7,533.0	0.0	17.3	89.72	354.1	36.7	257.3	240.0	17.31	14.861		
8,200.0	7,535.9	7,540.1	7,532.9	0.0	17.3	89.34	354.1	36.7	356.9	339.6	17.31	20.616		
8,300.0	7,535.8	7,540.0	7,532.8	0.0	17.3	88.82	354.1	36.7	456.7	439.4	17.31	26.382		
8,400.0	7,535.7	7,539.9	7,532.7	0.0	17.3	88.15	354.1	36.7	556.6	539.3	17.31	32.158		
8,500.0	7,535.5	7,539.7	7,532.5	0.0	17.3	87.32	354.1	36.7	656.5	639.2	17.30	37.946		
8,600.0	7,535.3	7,539.5	7,532.3	0.0	17.3	86.34	354.1	36.7	756.4	739.2	17.29	43.752		
8,700.0	7,535.1	7,539.3	7,532.1	0.0	17.3	85.20	354.1	36.7	856.4	839.1	17.27	49.587		

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

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_PINNACLE 2-2HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Reference Site:	WELD_PINNACLE 2-2HZ	MD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Site Error:	0.0 ft	North Reference:	True
Reference Well:	P_PINNACLE 2-2HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	P_PINNACLE 2-2HZ	Database:	edm5000p
Reference Design:	P_Pinnacle 2-2HZ (wp03)	Offset TVD Reference:	Offset Datum

Offset Design		WELD_PINNACLE 15-2 PAD - P_PINNACLE 15-2 - P_PINNACLE 15-2 - PLAN #1 8-17-10 RHS										Offset Site Error:	0.0 ft
Survey Program: 0-Reference												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,800.0	7,534.8	7,539.0	7,531.8	0.0	17.3	83.91	354.1	36.7	956.4	939.1	17.24	55.463	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_PINNACLE 2-2HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Reference Site:	WELD_PINNACLE 2-2HZ	MD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Site Error:	0.0 ft	North Reference:	True
Reference Well:	P_PINNACLE 2-2HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	P_PINNACLE 2-2HZ	Database:	edm5000p
Reference Design:	P_Pinnacle 2-2HZ (wp03)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-												Offset Well Error:	0.0 ft
WELD_PINNACLE 15-2 PAD - P_PINNACLE 16-2 - P_PINNACLE 16-2 - PLAN #1 8-17-10 RHS													
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
0.0	0.0	0.0	0.0	0.0	0.0	36.65	80.5	59.9	100.4				
100.0	100.0	97.0	97.0	0.0	0.1	36.65	80.5	59.9	100.3	100.2	0.09	1,080.526	
200.0	200.0	197.0	197.0	0.0	0.3	36.65	80.5	59.9	100.3	100.0	0.31	319.802	
300.0	300.0	297.0	297.0	0.0	0.5	36.65	80.5	59.9	100.3	99.8	0.54	186.323	
400.0	400.0	397.0	397.0	0.0	0.8	36.65	80.5	59.9	100.3	99.6	0.76	131.456	
500.0	500.0	497.0	497.0	0.0	1.0	36.65	80.5	59.9	100.3	99.3	0.99	101.551	
600.0	600.0	597.0	597.0	0.0	1.2	36.65	80.5	59.9	100.3	99.1	1.21	82.731	
700.0	700.0	697.0	697.0	0.0	1.4	36.65	80.5	59.9	100.3	98.9	1.44	69.796	
800.0	800.0	797.0	797.0	0.0	1.7	36.65	80.5	59.9	100.3	98.7	1.66	60.359	
900.0	900.0	897.0	897.0	0.0	1.9	36.65	80.5	59.9	100.3	98.5	1.89	53.170	
1,000.0	1,000.0	997.0	997.0	0.0	2.1	36.65	80.5	59.9	100.3	98.2	2.11	47.511	
1,050.0	1,050.0	1,047.0	1,047.0	0.0	2.2	36.65	80.5	59.9	100.3	98.1	2.22	45.111	CC, ES
1,100.0	1,100.0	1,095.8	1,095.8	0.0	2.3	-138.16	80.6	60.2	100.9	98.6	2.33	43.347	
1,179.4	1,179.3	1,173.0	1,173.0	0.0	2.5	-138.16	81.0	62.5	104.5	102.0	2.49	42.019	
1,200.0	1,199.9	1,193.1	1,193.0	0.0	2.5	-138.15	81.2	63.4	105.9	103.4	2.53	41.887	
1,300.0	1,299.8	1,289.9	1,289.7	0.0	2.7	-137.43	82.5	69.7	114.3	111.5	2.74	41.754	SF
1,400.0	1,399.7	1,386.2	1,385.5	0.0	3.0	-135.83	84.4	79.2	125.1	122.2	2.95	42.390	
1,500.0	1,499.6	1,481.7	1,480.1	0.0	3.2	-133.66	86.8	91.7	138.8	135.6	3.18	43.661	
1,600.0	1,599.5	1,576.3	1,573.3	0.0	3.5	-131.20	89.9	107.2	155.2	151.8	3.41	45.468	
1,700.0	1,699.4	1,669.6	1,664.8	0.0	3.8	-128.66	93.5	125.4	174.6	170.9	3.66	47.738	
1,800.0	1,799.3	1,761.6	1,754.3	0.0	4.1	-126.18	97.7	146.1	197.0	193.1	3.91	50.410	
1,900.0	1,899.2	1,852.1	1,841.7	0.0	4.5	-123.86	102.3	169.3	222.5	218.3	4.16	53.428	
2,000.0	1,999.1	1,941.0	1,926.7	0.0	4.9	-121.73	107.3	194.7	250.9	246.5	4.42	56.763	
2,100.0	2,099.0	2,033.4	2,014.4	0.0	5.4	-119.76	113.0	223.1	281.8	277.1	4.70	60.010	
2,200.0	2,198.9	2,128.0	2,104.2	0.0	5.9	-118.13	118.8	252.4	313.0	308.1	4.98	62.902	
2,300.0	2,298.8	2,222.6	2,194.0	0.0	6.4	-116.79	124.6	281.7	344.5	339.2	5.26	65.508	
2,400.0	2,398.7	2,317.3	2,283.8	0.0	7.0	-115.67	130.5	311.0	376.1	370.5	5.54	67.861	
2,500.0	2,498.6	2,411.9	2,373.6	0.0	7.6	-114.72	136.3	340.3	407.7	401.9	5.83	69.990	
2,600.0	2,598.5	2,506.6	2,463.5	0.0	8.1	-113.91	142.1	369.5	439.5	433.4	6.11	71.922	
2,700.0	2,698.4	2,601.2	2,553.3	0.0	8.7	-113.22	147.9	398.8	471.4	465.0	6.40	73.679	
2,800.0	2,798.3	2,695.9	2,643.1	0.0	9.3	-112.60	153.8	428.1	503.3	496.6	6.69	75.280	
2,900.0	2,898.2	2,790.5	2,732.9	0.0	9.9	-112.06	159.6	457.4	535.2	528.2	6.97	76.744	
3,000.0	2,998.1	2,885.2	2,822.7	0.0	10.5	-111.59	165.4	486.7	567.2	559.9	7.26	78.088	
3,100.0	3,098.0	2,979.8	2,912.5	0.0	11.1	-111.16	171.2	516.0	599.2	591.6	7.55	79.324	
3,200.0	3,197.9	3,074.5	3,002.3	0.0	11.7	-110.78	177.1	545.2	631.2	623.4	7.85	80.464	
3,300.0	3,297.8	3,169.1	3,092.2	0.0	12.3	-110.43	182.9	574.5	663.3	655.2	8.14	81.517	
3,400.0	3,397.7	3,263.8	3,182.0	0.0	12.9	-110.11	188.7	603.8	695.4	687.0	8.43	82.493	
3,500.0	3,497.6	3,358.4	3,271.8	0.0	13.5	-109.83	194.5	633.1	727.5	718.8	8.72	83.399	
3,600.0	3,597.5	3,453.1	3,361.6	0.0	14.1	-109.56	200.4	662.4	759.6	750.6	9.02	84.242	
3,700.0	3,697.4	3,547.7	3,451.4	0.0	14.7	-109.32	206.2	691.7	791.7	782.4	9.31	85.028	
3,800.0	3,797.3	3,642.4	3,541.2	0.0	15.3	-109.10	212.0	720.9	823.9	814.3	9.61	85.762	
3,900.0	3,897.2	3,737.0	3,631.1	0.0	15.9	-108.89	217.8	750.2	856.0	846.1	9.90	86.449	
4,000.0	3,997.1	3,831.7	3,720.9	0.0	16.5	-108.70	223.7	779.5	888.2	878.0	10.20	87.093	
4,100.0	4,097.0	3,926.3	3,810.7	0.0	17.1	-108.53	229.5	808.8	920.3	909.9	10.49	87.698	
4,200.0	4,196.9	4,020.9	3,900.5	0.0	17.7	-108.36	235.3	838.1	952.5	941.7	10.79	88.267	
4,300.0	4,296.8	4,115.6	3,990.3	0.0	18.4	-108.20	241.1	867.3	984.7	973.6	11.09	88.803	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_PINNACLE 2-2HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Reference Site:	WELD_PINNACLE 2-2HZ	MD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Site Error:	0.0 ft	North Reference:	True
Reference Well:	P_PINNACLE 2-2HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	P_PINNACLE 2-2HZ	Database:	edm5000p
Reference Design:	P_Pinnacle 2-2HZ (wp03)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-												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
0.0	0.0	0.0	0.0	0.0	0.0	-0.20	79.8	-0.3	79.8				
100.0	100.0	97.0	97.0	0.0	0.1	-0.20	79.8	-0.3	79.8	79.7	0.09	859.067	
200.0	200.0	197.0	197.0	0.0	0.3	-0.20	79.8	-0.3	79.8	79.5	0.31	254.257	
300.0	300.0	297.0	297.0	0.0	0.5	-0.20	79.8	-0.3	79.8	79.2	0.54	148.135	
400.0	400.0	397.0	397.0	0.0	0.8	-0.20	79.8	-0.3	79.8	79.0	0.76	104.513	
500.0	500.0	497.0	497.0	0.0	1.0	-0.20	79.8	-0.3	79.8	78.8	0.99	80.738	
600.0	600.0	597.0	597.0	0.0	1.2	-0.20	79.8	-0.3	79.8	78.6	1.21	65.775	
700.0	700.0	697.0	697.0	0.0	1.4	-0.20	79.8	-0.3	79.8	78.3	1.44	55.491	
800.0	800.0	797.0	797.0	0.0	1.7	-0.20	79.8	-0.3	79.8	78.1	1.66	47.988	
900.0	900.0	897.0	897.0	0.0	1.9	-0.20	79.8	-0.3	79.8	77.9	1.89	42.273	
1,000.0	1,000.0	997.0	997.0	0.0	2.1	-0.20	79.8	-0.3	79.8	77.7	2.11	37.773	
1,050.0	1,050.0	1,047.0	1,047.0	0.0	2.2	-0.20	79.8	-0.3	79.8	77.5	2.22	35.865 CC, ES	
1,100.0	1,100.0	1,095.9	1,095.9	0.0	2.3	-175.15	80.1	-0.5	80.5	78.2	2.33	34.517	
1,179.4	1,179.3	1,173.2	1,173.2	0.0	2.5	-176.07	82.0	-1.6	85.0	82.5	2.50	33.966	
1,200.0	1,199.9	1,193.2	1,193.2	0.0	2.5	-176.42	82.8	-2.1	86.8	84.2	2.55	34.065	
1,300.0	1,299.8	1,289.9	1,289.6	0.0	2.8	-178.46	88.4	-5.4	97.2	94.4	2.77	35.140	
1,400.0	1,399.7	1,385.7	1,385.0	0.0	3.0	179.17	96.6	-10.4	110.7	107.7	2.98	37.084	
1,500.0	1,499.6	1,480.6	1,479.0	0.0	3.2	176.76	107.5	-16.9	127.4	124.2	3.21	39.736	
1,600.0	1,599.5	1,574.3	1,571.3	0.0	3.5	174.49	120.8	-24.9	147.3	143.9	3.43	42.963	
1,700.0	1,699.4	1,666.5	1,661.8	0.0	3.8	172.43	136.4	-34.3	170.4	166.7	3.65	46.654	
1,800.0	1,799.3	1,760.6	1,753.5	0.0	4.1	170.60	154.5	-45.1	196.2	192.3	3.88	50.526	
1,900.0	1,899.2	1,857.0	1,847.3	0.0	4.5	169.14	173.3	-56.4	222.4	218.3	4.12	53.969	
2,000.0	1,999.1	1,953.4	1,941.2	0.0	4.9	167.99	192.1	-67.6	248.8	244.4	4.36	57.042	
2,100.0	2,099.0	2,049.7	2,035.0	0.0	5.3	167.05	210.9	-78.9	275.2	270.6	4.60	59.787	
2,200.0	2,198.9	2,146.1	2,128.8	0.0	5.7	166.28	229.7	-90.2	301.6	296.8	4.85	62.248	
2,300.0	2,298.8	2,242.4	2,222.7	0.0	6.1	165.64	248.4	-101.4	328.1	323.1	5.09	64.462	
2,400.0	2,398.7	2,338.8	2,316.5	0.0	6.5	165.09	267.2	-112.7	354.7	349.4	5.34	66.463	
2,500.0	2,498.6	2,435.2	2,410.4	0.0	6.9	164.62	286.0	-123.9	381.3	375.7	5.58	68.276	
2,600.0	2,598.5	2,531.5	2,504.2	0.0	7.3	164.21	304.8	-135.2	407.8	402.0	5.83	69.926	
2,700.0	2,698.4	2,627.9	2,598.1	0.0	7.8	163.85	323.5	-146.5	434.5	428.4	6.08	71.433	
2,800.0	2,798.3	2,724.2	2,691.9	0.0	8.2	163.53	342.3	-157.7	461.1	454.7	6.33	72.812	
2,900.0	2,898.2	2,820.6	2,785.7	0.0	8.7	163.24	361.1	-169.0	487.7	481.1	6.58	74.080	
3,000.0	2,998.1	2,917.0	2,879.6	0.0	9.1	162.99	379.9	-180.3	514.4	507.5	6.84	75.247	
3,100.0	3,098.0	3,013.3	2,973.4	0.0	9.6	162.76	398.6	-191.5	541.0	533.9	7.09	76.326	
3,200.0	3,197.9	3,109.7	3,067.3	0.0	10.0	162.55	417.4	-202.8	567.7	560.3	7.34	77.325	
3,300.0	3,297.8	3,206.1	3,161.1	0.0	10.4	162.36	436.2	-214.0	594.3	586.7	7.60	78.252	
3,400.0	3,397.7	3,302.4	3,254.9	0.0	10.9	162.19	455.0	-225.3	621.0	613.2	7.85	79.115	
3,500.0	3,497.6	3,398.8	3,348.8	0.0	11.3	162.03	473.7	-236.6	647.7	639.6	8.10	79.919	
3,600.0	3,597.5	3,495.1	3,442.6	0.0	11.8	161.88	492.5	-247.8	674.4	666.0	8.36	80.671	
3,700.0	3,697.4	3,591.5	3,536.5	0.0	12.3	161.75	511.3	-259.1	701.0	692.4	8.62	81.374	
3,800.0	3,797.3	3,687.9	3,630.3	0.0	12.7	161.62	530.1	-270.3	727.7	718.9	8.87	82.034	
3,900.0	3,897.2	3,784.2	3,724.1	0.0	13.2	161.50	548.9	-281.6	754.4	745.3	9.13	82.654	
4,000.0	3,997.1	3,880.6	3,818.0	0.0	13.6	161.40	567.6	-292.9	781.1	771.7	9.38	83.238	
4,100.0	4,097.0	3,976.9	3,911.8	0.0	14.1	161.29	586.4	-304.1	807.8	798.2	9.64	83.788	
4,200.0	4,196.9	4,073.3	4,005.7	0.0	14.5	161.20	605.2	-315.4	834.5	824.6	9.90	84.307	
4,300.0	4,296.8	4,169.7	4,099.5	0.0	15.0	161.11	624.0	-326.6	861.2	851.0	10.16	84.798	
4,400.0	4,396.7	4,266.0	4,193.4	0.0	15.4	161.03	642.7	-337.9	887.9	877.5	10.41	85.263	
4,500.0	4,496.6	4,362.4	4,287.2	0.0	15.9	160.95	661.5	-349.2	914.6	903.9	10.67	85.703	
4,600.0	4,596.5	4,458.8	4,381.0	0.0	16.4	160.87	680.3	-360.4	941.3	930.4	10.93	86.121	
4,700.0	4,696.4	4,555.1	4,474.9	0.0	16.8	160.80	699.1	-371.7	968.0	956.8	11.19	86.518	
4,800.0	4,796.3	4,651.5	4,568.7	0.0	17.3	160.74	717.8	-382.9	994.7	983.3	11.45	86.895	
7,700.0	7,492.6	7,610.5	7,489.6	0.0	26.1	-63.34	1,023.3	-566.1	995.2	973.6	21.68	45.901	

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

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_PINNACLE 2-2HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Reference Site:	WELD_PINNACLE 2-2HZ	MD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Site Error:	0.0 ft	North Reference:	True
Reference Well:	P_PINNACLE 2-2HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	P_PINNACLE 2-2HZ	Database:	edm5000p
Reference Design:	P_Pinnacle 2-2HZ (wp03)	Offset TVD Reference:	Offset Datum

Offset Design WELD_PINNACLE 15-2 PAD - P_PINNACLE 23-2 - P_PINNACLE 23-2 - PLAN #1 8-17-10 RHS												Offset Site Error:	0.0 ft
Survey Program: 0-												Offset Well Error:	0.0 ft
Reference	Offset	Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,750.0	7,508.1	7,626.0	7,505.1	0.0	26.2	-69.11	1,023.3	-566.1	956.4	933.7	22.68	42.173	
7,800.0	7,520.2	7,638.1	7,517.2	0.0	26.2	-74.88	1,023.3	-566.1	917.5	894.0	23.48	39.080	
7,850.0	7,528.9	7,646.8	7,525.9	0.0	26.2	-80.41	1,023.3	-566.1	879.1	855.1	24.02	36.595	
7,900.0	7,534.2	7,652.1	7,531.2	0.0	26.2	-85.48	1,023.3	-566.1	841.4	817.1	24.30	34.629	
7,950.6	7,536.0	7,653.9	7,533.0	0.0	26.2	-90.00	1,023.3	-566.1	804.4	780.1	24.34	33.049	
8,000.0	7,536.0	7,653.9	7,533.0	0.0	26.2	-90.01	1,023.3	-566.1	769.7	745.4	24.34	31.624	
8,100.0	7,536.0	7,653.8	7,533.0	0.0	26.2	-90.02	1,023.3	-566.1	704.9	680.6	24.34	28.961	
8,200.0	7,535.9	7,653.8	7,532.9	0.0	26.2	-90.03	1,023.3	-566.1	649.1	624.8	24.34	26.668	
8,300.0	7,535.8	7,653.7	7,532.8	0.0	26.2	-90.03	1,023.3	-566.1	604.8	580.5	24.34	24.847	
8,400.0	7,535.7	7,653.5	7,532.7	0.0	26.2	-90.02	1,023.3	-566.1	574.7	550.3	24.34	23.607	
8,500.0	7,535.5	7,653.4	7,532.5	0.0	26.2	-90.01	1,023.3	-566.1	560.9	536.6	24.34	23.042	
8,528.0	7,535.4	7,653.3	7,532.4	0.0	26.2	-90.00	1,023.3	-566.1	560.2	535.9	24.34	23.013 SF	
8,600.0	7,535.3	7,653.2	7,532.3	0.0	26.2	-89.98	1,023.3	-566.1	564.8	540.5	24.34	23.201	
8,700.0	7,535.1	7,652.9	7,532.1	0.0	26.2	-89.96	1,023.3	-566.1	586.0	561.7	24.35	24.071	
8,800.0	7,534.8	7,652.7	7,531.8	0.0	26.2	-89.92	1,023.3	-566.1	622.7	598.4	24.35	25.577	
8,900.0	7,534.5	7,652.4	7,531.5	0.0	26.2	-89.88	1,023.3	-566.1	672.4	648.0	24.35	27.617	
9,000.0	7,534.2	7,652.0	7,531.2	0.0	26.2	-89.83	1,023.3	-566.1	732.4	708.1	24.35	30.081	
9,100.0	7,533.8	7,651.7	7,530.8	0.0	26.2	-89.78	1,023.3	-566.1	800.5	776.1	24.35	32.875	
9,200.0	7,533.4	7,651.3	7,530.4	0.0	26.2	-89.71	1,023.3	-566.1	874.7	850.3	24.35	35.921	
9,300.0	7,533.0	7,650.8	7,530.0	0.0	26.2	-89.65	1,023.3	-566.1	953.6	929.2	24.35	39.160	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_PINNACLE 2-2HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Reference Site:	WELD_PINNACLE 2-2HZ	MD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Site Error:	0.0 ft	North Reference:	True
Reference Well:	P_PINNACLE 2-2HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	P_PINNACLE 2-2HZ	Database:	edm5000p
Reference Design:	P_Pinnacle 2-2HZ (wp03)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-												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	26.38	80.1	39.7	89.5				
100.0	100.0	97.0	97.0	0.0	0.1	26.38	80.1	39.7	89.4	89.4	0.09	963.264	
200.0	200.0	197.0	197.0	0.0	0.3	26.38	80.1	39.7	89.4	89.1	0.31	285.096	
300.0	300.0	297.0	297.0	0.0	0.5	26.38	80.1	39.7	89.4	88.9	0.54	166.102	
400.0	400.0	397.0	397.0	0.0	0.8	26.38	80.1	39.7	89.4	88.7	0.76	117.190	
500.0	500.0	497.0	497.0	0.0	1.0	26.38	80.1	39.7	89.4	88.5	0.99	90.531	
600.0	600.0	597.0	597.0	0.0	1.2	26.38	80.1	39.7	89.4	88.2	1.21	73.753	
700.0	700.0	697.0	697.0	0.0	1.4	26.38	80.1	39.7	89.4	88.0	1.44	62.222	
800.0	800.0	797.0	797.0	0.0	1.7	26.38	80.1	39.7	89.4	87.8	1.66	53.809	
900.0	900.0	897.0	897.0	0.0	1.9	26.38	80.1	39.7	89.4	87.6	1.89	47.400	
1,000.0	1,000.0	997.0	997.0	0.0	2.1	26.38	80.1	39.7	89.4	87.3	2.11	42.355	
1,050.0	1,050.0	1,047.0	1,047.0	0.0	2.2	26.38	80.1	39.7	89.4	87.2	2.22	40.215 CC, ES	
1,100.0	1,100.0	1,097.0	1,097.0	0.0	2.3	-148.31	80.0	40.1	89.8	87.5	2.33	38.602	
1,179.4	1,179.3	1,176.3	1,176.3	0.0	2.5	-147.61	78.9	42.2	91.9	89.5	2.48	37.117	
1,200.0	1,199.9	1,196.9	1,196.8	0.0	2.5	-147.31	78.5	43.1	92.7	90.2	2.52	36.857	
1,300.0	1,299.8	1,296.6	1,296.3	0.0	2.7	-144.69	75.4	49.2	96.8	94.1	2.72	35.579	
1,400.0	1,399.7	1,395.9	1,395.0	0.0	2.9	-140.37	70.9	58.4	101.4	98.5	2.94	34.454	
1,500.0	1,499.6	1,494.6	1,492.8	0.0	3.2	-134.70	64.9	70.5	107.4	104.2	3.19	33.627	
1,600.0	1,599.5	1,593.8	1,590.9	0.0	3.4	-129.10	58.3	83.7	114.6	111.1	3.46	33.123	
1,700.0	1,699.4	1,692.9	1,688.9	0.0	3.7	-124.21	51.8	96.9	122.8	119.1	3.73	32.897	
1,800.0	1,799.3	1,792.0	1,787.0	0.0	4.0	-119.94	45.2	110.1	131.8	127.8	4.01	32.880 SF	
1,900.0	1,899.2	1,891.2	1,885.0	0.0	4.3	-116.24	38.7	123.3	141.5	137.2	4.29	33.013	
2,000.0	1,999.1	1,990.3	1,983.1	0.0	4.6	-113.02	32.2	136.5	151.6	147.1	4.56	33.253	
2,100.0	2,099.0	2,089.5	2,081.1	0.0	5.0	-110.20	25.6	149.6	162.2	157.4	4.83	33.564	
2,200.0	2,198.9	2,188.6	2,179.1	0.0	5.3	-107.74	19.1	162.8	173.1	168.0	5.10	33.920	
2,300.0	2,298.8	2,287.7	2,277.2	0.0	5.6	-105.57	12.5	176.0	184.3	179.0	5.37	34.303	
2,400.0	2,398.7	2,386.9	2,375.2	0.0	6.0	-103.65	6.0	189.2	195.8	190.1	5.64	34.699	
2,500.0	2,498.6	2,486.0	2,473.3	0.0	6.3	-101.94	-0.5	202.4	207.4	201.5	5.91	35.101	
2,600.0	2,598.5	2,585.2	2,571.3	0.0	6.6	-100.41	-7.1	215.6	219.2	213.0	6.17	35.500	
2,700.0	2,698.4	2,684.3	2,669.4	0.0	7.0	-99.04	-13.6	228.8	231.1	224.7	6.44	35.892	
2,800.0	2,798.3	2,783.5	2,767.4	0.0	7.3	-97.80	-20.2	241.9	243.1	236.4	6.70	36.276	
2,900.0	2,898.2	2,882.6	2,865.4	0.0	7.7	-96.69	-26.7	255.1	255.3	248.3	6.97	36.648	
3,000.0	2,998.1	2,981.7	2,963.5	0.0	8.0	-95.67	-33.2	268.3	267.5	260.3	7.23	37.007	
3,100.0	3,098.0	3,080.9	3,061.5	0.0	8.3	-94.74	-39.8	281.5	279.8	272.3	7.49	37.353	
3,200.0	3,197.9	3,180.0	3,159.6	0.0	8.7	-93.89	-46.3	294.7	292.2	284.4	7.75	37.686	
3,300.0	3,297.8	3,279.2	3,257.6	0.0	9.0	-93.11	-52.8	307.9	304.6	296.6	8.02	38.006	
3,400.0	3,397.7	3,378.3	3,355.7	0.0	9.4	-92.39	-59.4	321.1	317.1	308.8	8.28	38.313	
3,500.0	3,497.6	3,477.5	3,453.7	0.0	9.7	-91.73	-65.9	334.2	329.6	321.1	8.54	38.607	
3,600.0	3,597.5	3,576.6	3,551.8	0.0	10.1	-91.11	-72.5	347.4	342.2	333.4	8.80	38.889	
3,700.0	3,697.4	3,675.7	3,649.8	0.0	10.4	-90.54	-79.0	360.6	354.8	345.7	9.06	39.159	
3,800.0	3,797.3	3,774.9	3,747.8	0.0	10.8	-90.01	-85.5	373.8	367.4	358.1	9.32	39.417	
3,900.0	3,897.2	3,874.0	3,845.9	0.0	11.1	-89.51	-92.1	387.0	380.1	370.5	9.58	39.665	
4,000.0	3,997.1	3,973.2	3,943.9	0.0	11.5	-89.04	-98.6	400.2	392.8	383.0	9.84	39.902	
4,100.0	4,097.0	4,072.3	4,042.0	0.0	11.9	-88.61	-105.2	413.3	405.5	395.4	10.11	40.130	
4,200.0	4,196.9	4,171.5	4,140.0	0.0	12.2	-88.20	-111.7	426.5	418.3	407.9	10.37	40.348	
4,300.0	4,296.8	4,270.6	4,238.1	0.0	12.6	-87.81	-118.2	439.7	431.0	420.4	10.63	40.558	
4,400.0	4,396.7	4,369.7	4,336.1	0.0	12.9	-87.45	-124.8	452.9	443.8	432.9	10.89	40.759	
4,500.0	4,496.6	4,468.9	4,434.1	0.0	13.3	-87.10	-131.3	466.1	456.6	445.4	11.15	40.952	
4,600.0	4,596.5	4,568.0	4,532.2	0.0	13.6	-86.78	-137.9	479.3	469.4	458.0	11.41	41.138	
4,700.0	4,696.4	4,667.2	4,630.2	0.0	14.0	-86.47	-144.4	492.5	482.2	470.5	11.67	41.316	
4,800.0	4,796.3	4,766.3	4,728.3	0.0	14.3	-86.18	-150.9	505.6	495.1	483.1	11.93	41.488	
4,900.0	4,896.2	4,865.4	4,826.3	0.0	14.7	-85.90	-157.5	518.8	507.9	495.7	12.19	41.653	

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

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_PINNACLE 2-2HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Reference Site:	WELD_PINNACLE 2-2HZ	MD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Site Error:	0.0 ft	North Reference:	True
Reference Well:	P_PINNACLE 2-2HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	P_PINNACLE 2-2HZ	Database:	edm5000p
Reference Design:	P_Pinnacle 2-2HZ (wp03)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-												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	
5,000.0	4,996.1	4,964.6	4,924.4	0.0	15.1	-85.64	-164.0	532.0	520.8	508.3	12.45	41.812	
5,100.0	5,096.0	5,063.7	5,022.4	0.0	15.4	-85.39	-170.6	545.2	533.6	520.9	12.72	41.965	
5,200.0	5,195.9	5,162.9	5,120.5	0.0	15.8	-85.15	-177.1	558.4	546.5	533.5	12.98	42.113	
5,300.0	5,295.8	5,262.0	5,218.5	0.0	16.1	-84.92	-183.6	571.6	559.4	546.2	13.24	42.255	
5,400.0	5,395.7	5,361.2	5,316.5	0.0	16.5	-84.71	-190.2	584.8	572.3	558.8	13.50	42.393	
5,500.0	5,495.6	5,460.3	5,414.6	0.0	16.8	-84.50	-196.7	597.9	585.2	571.4	13.76	42.525	
5,600.0	5,595.4	5,559.4	5,512.6	0.0	17.2	-84.30	-203.3	611.1	598.1	584.1	14.02	42.653	
5,700.0	5,695.3	5,658.6	5,610.7	0.0	17.6	-84.11	-209.8	624.3	611.0	596.7	14.28	42.777	
5,800.0	5,795.2	5,757.7	5,708.7	0.0	17.9	-83.93	-216.3	637.5	623.9	609.4	14.55	42.897	
5,900.0	5,895.1	5,856.9	5,806.8	0.0	18.3	-83.75	-222.9	650.7	636.9	622.1	14.81	43.012	
6,000.0	5,995.0	5,956.0	5,904.8	0.0	18.6	-83.58	-229.4	663.9	649.8	634.7	15.07	43.124	
6,100.0	6,094.9	6,057.3	6,005.0	0.0	19.0	-83.42	-236.1	677.3	662.7	647.4	15.33	43.226	
6,200.0	6,194.8	6,183.4	6,130.1	0.0	19.3	-83.34	-243.0	691.2	673.4	657.8	15.60	43.178	
6,300.0	6,294.7	6,310.3	6,256.6	0.0	19.6	-83.46	-247.4	700.2	680.0	664.2	15.84	42.924	
6,400.0	6,394.6	6,437.6	6,383.9	0.0	19.8	-83.78	-249.4	704.2	682.7	666.6	16.09	42.431	
6,500.0	6,494.5	6,545.3	6,491.5	0.0	19.9	-84.18	-249.5	704.4	682.4	666.1	16.31	41.842	
6,600.0	6,594.4	6,645.2	6,591.4	0.0	20.1	-84.56	-249.5	704.4	681.9	665.4	16.51	41.302	
6,700.0	6,694.3	6,745.1	6,691.3	0.0	20.2	-84.94	-249.5	704.4	681.5	664.8	16.71	40.775	
6,793.3	6,787.5	6,838.3	6,784.5	0.0	20.3	-85.29	-249.5	704.4	681.2	664.3	16.90	40.294	
6,800.0	6,794.2	6,845.0	6,791.2	0.0	20.4	-84.32	-249.5	704.4	681.1	664.2	16.92	40.262	
6,850.0	6,844.2	6,895.0	6,841.2	0.0	20.4	85.84	-249.5	704.4	681.0	664.0	17.00	40.053	
6,900.0	6,894.1	6,944.9	6,891.1	0.0	20.5	89.52	-249.5	704.4	680.9	663.8	17.06	39.907	
6,917.4	6,911.4	6,962.2	6,908.4	0.0	20.5	90.00	-249.5	704.4	680.9	663.8	17.08	39.871	
6,950.0	6,943.6	6,994.4	6,940.6	0.0	20.6	90.76	-249.5	704.4	680.9	663.8	17.10	39.825	
7,000.0	6,992.5	7,043.3	6,989.5	0.0	20.6	91.87	-249.5	704.4	681.2	664.1	17.11	39.808	
7,050.0	7,040.6	7,091.4	7,037.6	0.0	20.7	93.08	-249.5	704.4	681.8	664.7	17.11	39.857	
7,100.0	7,087.6	7,138.3	7,084.6	0.0	20.8	94.43	-249.5	704.4	683.0	665.9	17.09	39.975	
7,150.0	7,133.2	7,184.0	7,130.2	0.0	20.9	95.89	-249.5	704.4	685.0	667.9	17.05	40.169	
7,200.0	7,177.4	7,228.2	7,174.4	0.0	20.9	97.41	-249.5	704.4	688.1	671.0	17.01	40.445	
7,250.0	7,219.8	7,270.6	7,216.8	0.0	21.0	98.94	-249.5	704.4	692.5	675.5	16.97	40.813	
7,300.0	7,260.3	7,311.1	7,257.3	0.0	21.1	100.43	-249.5	704.4	698.6	681.6	16.92	41.284	
7,350.0	7,298.6	7,349.4	7,295.6	0.0	21.1	101.81	-249.5	704.4	706.6	689.7	16.88	41.862	
7,400.0	7,334.6	7,385.4	7,331.6	0.0	21.2	103.02	-249.5	704.4	716.7	699.9	16.84	42.553	
7,450.0	7,368.1	7,418.9	7,365.1	0.0	21.2	104.01	-249.5	704.4	729.3	712.5	16.82	43.350	
7,500.0	7,398.9	7,449.7	7,395.9	0.0	21.3	104.71	-249.5	704.4	744.5	727.6	16.83	44.241	
7,550.0	7,426.9	7,477.7	7,423.9	0.0	21.3	105.07	-249.5	704.4	762.3	745.4	16.86	45.206	
7,600.0	7,451.9	7,502.7	7,448.9	0.0	21.3	105.04	-249.5	704.4	782.8	765.9	16.94	46.218	
7,650.0	7,473.8	7,524.6	7,470.8	0.0	21.4	104.57	-249.5	704.4	806.0	789.0	17.06	47.250	
7,700.0	7,492.6	7,543.4	7,489.6	0.0	21.4	103.61	-249.5	704.4	831.9	814.7	17.23	48.283	
7,750.0	7,508.1	7,558.9	7,505.1	0.0	21.4	102.12	-249.5	704.4	860.2	842.7	17.44	49.314	
7,800.0	7,520.2	7,571.0	7,517.2	0.0	21.5	100.04	-249.5	704.4	890.8	873.1	17.69	50.364	
7,850.0	7,528.9	7,579.7	7,525.9	0.0	21.5	97.35	-249.5	704.4	923.4	905.4	17.93	51.485	
7,900.0	7,534.2	7,585.0	7,531.2	0.0	21.5	94.02	-249.5	704.4	957.8	939.6	18.15	52.761	
7,950.6	7,536.0	7,586.8	7,533.0	0.0	21.5	90.00	-249.5	704.4	994.1	975.8	18.30	54.330	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_PINNACLE 2-2HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Reference Site:	WELD_PINNACLE 2-2HZ	MD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Site Error:	0.0 ft	North Reference:	True
Reference Well:	P_PINNACLE 2-2HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	P_PINNACLE 2-2HZ	Database:	edm5000p
Reference Design:	P_Pinnacle 2-2HZ (wp03)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
WELD_PINNACLE 15-2 PAD - P_PINNACLE 39-2 - P_PINNACLE 39-2 - PLAN #1 9-10-10												Offset Well Error:	0.0 ft
Survey Program: 0-Reference													
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	31.75	80.5	49.8	94.7				
100.0	100.0	97.0	97.0	0.0	1.6	31.75	80.5	49.8	94.7	93.0	1.65	57.406	
200.0	200.0	197.0	197.0	0.0	5.6	31.75	80.5	49.8	94.7	89.1	5.58	16.966	
300.0	300.0	297.0	297.0	0.0	9.6	31.75	80.5	49.8	94.7	85.1	9.58	9.882 CC	
400.0	400.0	394.2	394.2	0.0	12.6	32.18	81.3	51.2	96.1	83.4	12.64	7.601 ES	
500.0	500.0	491.1	491.0	0.0	15.4	33.46	83.7	55.3	100.5	85.2	15.35	6.547	
600.0	600.0	587.6	587.1	0.0	18.5	35.36	87.8	62.3	108.1	89.6	18.42	5.868	
700.0	700.0	683.4	682.3	0.0	21.9	37.62	93.4	72.0	118.8	97.1	21.70	5.475	
800.0	800.0	778.4	776.2	0.0	25.5	39.97	100.5	84.3	132.8	107.7	25.09	5.294	
900.0	900.0	872.3	868.5	0.0	29.3	42.23	109.1	99.1	150.1	121.6	28.51	5.266 SF	
1,000.0	1,000.0	965.0	959.1	0.0	33.1	44.30	119.1	116.3	170.7	138.8	31.92	5.348	
1,050.0	1,050.0	1,010.9	1,003.6	0.0	35.1	45.24	124.6	125.7	182.2	148.6	33.61	5.422	
1,100.0	1,100.0	1,056.3	1,047.5	0.0	37.1	-128.56	130.4	135.6	194.8	159.5	35.30	5.518	
1,179.4	1,179.3	1,127.4	1,115.9	0.0	40.3	-127.41	140.1	152.4	217.4	179.5	37.84	5.745	
1,200.0	1,199.9	1,145.6	1,133.4	0.0	41.2	-127.27	142.8	156.9	223.7	185.2	38.51	5.809	
1,300.0	1,299.8	1,233.0	1,216.6	0.0	45.3	-126.63	156.2	180.0	256.2	214.5	41.72	6.140	
1,400.0	1,399.7	1,318.5	1,297.2	0.0	49.5	-126.02	170.5	204.7	291.5	246.6	44.85	6.499	
1,500.0	1,499.6	1,400.0	1,373.2	0.0	53.6	-125.48	185.3	230.2	329.5	281.7	47.81	6.892	
1,600.0	1,599.5	1,483.6	1,450.2	0.0	58.0	-124.95	201.6	258.2	370.1	319.3	50.82	7.284	
1,700.0	1,699.4	1,568.4	1,527.5	0.0	62.6	-124.46	219.2	288.4	413.0	359.2	53.84	7.671	
1,800.0	1,799.3	1,658.5	1,609.5	0.0	67.6	-124.02	238.0	320.7	456.3	399.2	57.06	7.997	
1,900.0	1,899.2	1,748.6	1,691.5	0.0	72.6	-123.66	256.8	353.0	499.6	439.3	60.27	8.288	
2,000.0	1,999.1	1,838.8	1,773.5	0.0	77.7	-123.36	275.5	385.3	542.8	479.3	63.50	8.549	
2,100.0	2,099.0	1,928.9	1,855.5	0.0	82.8	-123.10	294.3	417.6	586.1	519.4	66.72	8.785	
2,200.0	2,198.9	2,019.0	1,937.5	0.0	87.9	-122.88	313.1	449.9	629.4	559.5	69.95	8.998	
2,300.0	2,298.8	2,109.1	2,019.5	0.0	93.1	-122.69	331.9	482.2	672.7	599.6	73.18	9.192	
2,400.0	2,398.7	2,199.2	2,101.5	0.0	98.2	-122.52	350.7	514.5	716.1	639.6	76.42	9.370	
2,500.0	2,498.6	2,289.3	2,183.5	0.0	103.4	-122.36	369.4	546.8	759.4	679.7	79.66	9.533	
2,600.0	2,598.5	2,379.4	2,265.5	0.0	108.6	-122.23	388.2	579.1	802.7	719.8	82.90	9.683	
2,700.0	2,698.4	2,469.5	2,347.5	0.0	113.8	-122.11	407.0	611.5	846.0	759.9	86.14	9.821	
2,800.0	2,798.3	2,559.7	2,429.5	0.0	119.0	-122.00	425.8	643.8	889.4	800.0	89.39	9.950	
2,900.0	2,898.2	2,649.8	2,511.5	0.0	124.2	-121.90	444.6	676.1	932.7	840.1	92.63	10.069	
3,000.0	2,998.1	2,739.9	2,593.5	0.0	129.5	-121.81	463.4	708.4	976.0	880.1	95.88	10.180	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_PINNACLE 2-2HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Reference Site:	WELD_PINNACLE 2-2HZ	MD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Site Error:	0.0 ft	North Reference:	True
Reference Well:	P_PINNACLE 2-2HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	P_PINNACLE 2-2HZ	Database:	edm5000p
Reference Design:	P_Pinnacle 2-2HZ (wp03)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-												Offset Well Error:	0.0 ft
WELD_PINNACLE 15-2 PAD - P_PINNACLE 9-2 - P_Pinnacle 9-2 - PLAN #1 8-17-10 RHS													
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
0.0	0.0	0.0	0.0	0.0	0.0	20.48	80.2	29.9	85.6				
100.0	100.0	97.0	97.0	0.0	0.1	20.48	80.2	29.9	85.6	85.5	0.09	921.475	
200.0	200.0	197.0	197.0	0.0	0.3	20.48	80.2	29.9	85.6	85.3	0.31	272.728	
300.0	300.0	297.0	297.0	0.0	0.5	20.48	80.2	29.9	85.6	85.0	0.54	158.896	
400.0	400.0	397.0	397.0	0.0	0.8	20.48	80.2	29.9	85.6	84.8	0.76	112.106	
500.0	500.0	497.0	497.0	0.0	1.0	20.48	80.2	29.9	85.6	84.6	0.99	86.603	
600.0	600.0	597.0	597.0	0.0	1.2	20.48	80.2	29.9	85.6	84.4	1.21	70.553	
700.0	700.0	697.0	697.0	0.0	1.4	20.48	80.2	29.9	85.6	84.1	1.44	59.522	
800.0	800.0	797.0	797.0	0.0	1.7	20.48	80.2	29.9	85.6	83.9	1.66	51.474	
900.0	900.0	897.0	897.0	0.0	1.9	20.48	80.2	29.9	85.6	83.7	1.89	45.343	
1,000.0	1,000.0	997.0	997.0	0.0	2.1	20.48	80.2	29.9	85.6	83.5	2.11	40.518	
1,050.0	1,050.0	1,047.0	1,047.0	0.0	2.2	20.48	80.2	29.9	85.6	83.3	2.22	38.470 CC, ES	
1,100.0	1,100.0	1,095.7	1,095.7	0.0	2.3	-154.37	80.5	30.1	86.3	84.0	2.33	37.012	
1,179.4	1,179.3	1,172.6	1,172.6	0.0	2.5	-154.66	82.3	31.4	90.8	88.3	2.50	36.315 SF	
1,200.0	1,199.9	1,192.5	1,192.5	0.0	2.5	-154.77	83.1	31.9	92.6	90.1	2.55	36.381	
1,300.0	1,299.8	1,288.8	1,288.5	0.0	2.8	-154.95	88.4	35.5	103.1	100.4	2.76	37.372	
1,400.0	1,399.7	1,384.3	1,383.5	0.0	3.0	-154.72	96.4	40.8	116.9	113.9	2.97	39.299	
1,500.0	1,499.6	1,478.8	1,477.2	0.0	3.2	-154.22	106.8	47.7	133.8	130.7	3.19	41.959	
1,600.0	1,599.5	1,572.2	1,569.3	0.0	3.5	-153.57	119.6	56.3	154.0	150.5	3.41	45.195	
1,700.0	1,699.4	1,664.2	1,659.5	0.0	3.8	-152.87	134.7	66.3	177.2	173.5	3.62	48.889	
1,800.0	1,799.3	1,754.8	1,747.7	0.0	4.1	-152.16	151.9	77.8	203.4	199.6	3.84	52.946	
1,900.0	1,899.2	1,843.7	1,833.6	0.0	4.4	-151.49	171.1	90.6	232.7	228.6	4.06	57.290	
2,000.0	1,999.1	1,930.9	1,917.1	0.0	4.8	-150.86	192.0	104.5	264.8	260.5	4.28	61.863	
2,100.0	2,099.0	2,016.3	1,998.1	0.0	5.3	-150.28	214.5	119.5	299.8	295.3	4.50	66.619	
2,200.0	2,198.9	2,100.0	2,076.6	0.0	5.7	-149.75	238.5	135.5	337.5	332.8	4.72	71.509	
2,300.0	2,298.8	2,181.1	2,151.9	0.0	6.2	-149.28	263.5	152.2	377.9	372.9	4.94	76.476	
2,400.0	2,398.7	2,260.4	2,224.7	0.0	6.7	-148.85	289.8	169.7	420.8	415.6	5.16	81.519	
2,500.0	2,498.6	2,343.7	2,300.3	0.0	7.3	-148.44	318.8	189.1	465.9	460.5	5.40	86.325	
2,600.0	2,598.5	2,432.7	2,381.0	0.0	8.0	-148.08	350.1	210.0	511.3	505.6	5.65	90.468	
2,700.0	2,698.4	2,521.8	2,461.7	0.0	8.6	-147.77	381.5	230.8	556.7	550.8	5.91	94.197	
2,800.0	2,798.3	2,610.8	2,542.4	0.0	9.3	-147.51	412.8	251.7	602.1	596.0	6.17	97.552	
2,900.0	2,898.2	2,699.9	2,623.1	0.0	10.0	-147.28	444.1	272.6	647.6	641.1	6.44	100.579	
3,000.0	2,998.1	2,788.9	2,703.8	0.0	10.7	-147.09	475.4	293.5	693.0	686.3	6.71	103.302	
3,100.0	3,098.0	2,878.0	2,784.6	0.0	11.4	-146.92	506.7	314.4	738.5	731.5	6.98	105.777	
3,200.0	3,197.9	2,967.1	2,865.3	0.0	12.1	-146.77	538.0	335.2	783.9	776.7	7.26	108.032	
3,300.0	3,297.8	3,056.1	2,946.0	0.0	12.8	-146.63	569.3	356.1	829.4	821.9	7.53	110.090	
3,400.0	3,397.7	3,145.2	3,026.7	0.0	13.5	-146.51	600.7	377.0	874.8	867.0	7.81	111.975	
3,500.0	3,497.6	3,234.2	3,107.4	0.0	14.2	-146.40	632.0	397.9	920.3	912.2	8.09	113.705	
3,600.0	3,597.5	3,323.3	3,188.1	0.0	15.0	-146.30	663.3	418.8	965.8	957.4	8.38	115.297	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_PINNACLE 2-2HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Reference Site:	WELD_PINNACLE 2-2HZ	MD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Site Error:	0.0 ft	North Reference:	True
Reference Well:	P_PINNACLE 2-2HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	P_PINNACLE 2-2HZ	Database:	edm5000p
Reference Design:	P_Pinnacle 2-2HZ (wp03)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-												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	
10,000.0	7,529.0	7,482.3	7,477.9	0.0		83.82	3,400.6	163.7	916.3				
10,100.0	7,528.3	7,485.1	7,480.6	0.0		84.57	3,400.7	163.7	820.0				
10,200.0	7,527.6	7,487.9	7,483.4	0.0		85.31	3,400.8	163.7	724.7				
10,300.0	7,526.8	7,490.6	7,486.1	0.0		86.03	3,400.9	163.7	630.8				
10,400.0	7,526.0	7,493.3	7,488.8	0.0		86.74	3,401.0	163.7	539.1				
10,500.0	7,525.2	7,495.9	7,491.5	0.0		87.43	3,401.1	163.7	451.0				
10,600.0	7,524.3	7,498.6	7,494.1	0.0		88.10	3,401.2	163.7	368.9				
10,700.0	7,523.4	7,501.2	7,496.7	0.0		88.76	3,401.3	163.7	298.0				
10,800.0	7,522.5	7,503.7	7,499.2	0.0		89.40	3,401.4	163.7	247.9				
10,886.5	7,521.6	7,505.9	7,501.4	0.0		89.94	3,401.4	163.7	232.3				
10,900.0	7,521.5	7,506.2	7,501.7	0.0		90.03	3,401.5	163.7	232.7				
10,976.0	7,520.7	7,508.1	7,503.6	0.0		90.49	3,401.5	163.7	248.9				
11,000.0	7,520.5	7,508.7	7,504.2	0.0		90.64	3,401.5	163.7	258.5				
11,100.0	7,519.5	7,511.2	7,506.7	0.0		91.25	3,401.6	163.7	315.4				
11,200.0	7,518.5	7,513.7	7,509.2	0.0		91.86	3,401.7	163.7	390.1				
11,300.0	7,517.5	7,516.2	7,511.7	0.0		92.47	3,401.8	163.7	474.1				
11,400.0	7,516.5	7,518.6	7,514.1	0.0		93.08	3,401.9	163.7	563.4				
11,500.0	7,515.5	7,521.1	7,516.6	0.0		93.69	3,402.0	163.7	655.8				
11,600.0	7,514.5	7,523.6	7,519.1	0.0		94.30	3,402.1	163.7	750.1				
11,700.0	7,513.4	7,526.1	7,521.6	0.0		94.91	3,402.2	163.7	845.7				
11,800.0	7,512.4	7,528.6	7,524.1	0.0		95.51	3,402.2	163.7	942.3				

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_PINNACLE 2-2HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Reference Site:	WELD_PINNACLE 2-2HZ	MD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Site Error:	0.0 ft	North Reference:	True
Reference Well:	P_PINNACLE 2-2HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	P_PINNACLE 2-2HZ	Database:	edm5000p
Reference Design:	P_Pinnacle 2-2HZ (wp03)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
WELD_PINNACLE 17-2 PAD - P_PINNACLE 17-2 - P_PINNACLE 17-2 - Plan #2 9-8-10 RHS												Offset Well Error:	0.0 ft
Survey Program: 0-Reference													
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
10,600.0	7,524.3	7,502.1	7,498.3	0.0	16.4	90.42	3,763.7	682.2	990.5	974.2	16.24	61.007	
10,700.0	7,523.4	7,501.2	7,497.4	0.0	16.4	90.37	3,763.7	682.2	929.6	913.4	16.23	57.264	
10,800.0	7,522.5	7,500.3	7,496.5	0.0	16.4	90.31	3,763.7	682.2	875.9	859.7	16.23	53.966	
10,900.0	7,521.5	7,499.3	7,495.5	0.0	16.4	90.25	3,763.7	682.2	830.9	814.7	16.23	51.198	
10,976.0	7,520.7	7,498.6	7,494.7	0.0	16.4	90.20	3,763.7	682.2	803.4	787.2	16.23	49.506	
11,000.0	7,520.5	7,498.3	7,494.5	0.0	16.4	90.18	3,763.7	682.2	796.0	779.8	16.23	49.053	
11,100.0	7,519.5	7,497.3	7,493.5	0.0	16.4	90.10	3,763.7	682.2	772.5	756.3	16.23	47.612	
11,200.0	7,518.5	7,496.3	7,492.5	0.0	16.3	90.03	3,763.7	682.2	761.5	745.3	16.22	46.942	
11,234.1	7,518.1	7,496.0	7,492.1	0.0	16.3	90.00	3,763.7	682.2	760.8	744.6	16.22	46.897 CC, ES, SF	
11,300.0	7,517.5	7,495.3	7,491.5	0.0	16.3	89.95	3,763.7	682.2	763.6	747.4	16.22	47.076	
11,400.0	7,516.5	7,494.3	7,490.5	0.0	16.3	89.87	3,763.7	682.2	778.6	762.4	16.22	48.009	
11,500.0	7,515.5	7,493.3	7,489.5	0.0	16.3	89.80	3,763.7	682.2	805.9	789.7	16.22	49.695	
11,600.0	7,514.5	7,492.3	7,488.5	0.0	16.3	89.72	3,763.7	682.2	844.2	828.0	16.21	52.063	
11,700.0	7,513.4	7,491.3	7,487.4	0.0	16.3	89.65	3,763.7	682.2	892.1	875.9	16.21	55.025	
11,800.0	7,512.4	7,490.2	7,486.4	0.0	16.3	89.57	3,763.7	682.2	948.1	931.9	16.21	58.491	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_PINNACLE 2-2HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Reference Site:	WELD_PINNACLE 2-2HZ	MD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Site Error:	0.0 ft	North Reference:	True
Reference Well:	P_PINNACLE 2-2HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	P_PINNACLE 2-2HZ	Database:	edm5000p
Reference Design:	P_Pinnacle 2-2HZ (wp03)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-												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	
10,900.0	7,521.5	7,542.0	7,495.5	0.0	20.8	91.78	4,351.0	199.8	980.2	961.5	18.63	52.612	
10,976.0	7,520.7	7,541.2	7,494.7	0.0	20.8	91.68	4,351.0	199.8	908.0	889.4	18.63	48.743	
11,000.0	7,520.5	7,541.0	7,494.5	0.0	20.8	91.63	4,351.0	199.8	885.3	866.7	18.63	47.529	
11,100.0	7,519.5	7,540.0	7,493.5	0.0	20.8	91.44	4,351.0	199.8	791.7	773.1	18.62	42.514	
11,200.0	7,518.5	7,539.0	7,492.5	0.0	20.8	91.24	4,351.0	199.8	699.9	681.3	18.62	37.593	
11,300.0	7,517.5	7,537.9	7,491.5	0.0	20.8	91.05	4,351.0	199.8	610.7	592.1	18.61	32.808	
11,400.0	7,516.5	7,536.9	7,490.5	0.0	20.8	90.85	4,351.0	199.8	525.4	506.8	18.61	28.231	
11,500.0	7,515.5	7,535.9	7,489.5	0.0	20.8	90.66	4,351.0	199.8	446.2	427.6	18.61	23.983	
11,600.0	7,514.5	7,534.9	7,488.5	0.0	20.8	90.46	4,351.0	199.8	377.1	358.5	18.60	20.270	
11,700.0	7,513.4	7,533.9	7,487.4	0.0	20.8	90.26	4,351.0	199.8	324.4	305.8	18.60	17.444	
11,800.0	7,512.4	7,532.9	7,486.4	0.0	20.8	90.07	4,351.0	199.8	297.1	278.5	18.59	15.982	
11,834.7	7,512.1	7,532.6	7,486.1	0.0	20.8	90.00	4,351.0	199.8	295.1	276.5	18.59	15.874 CC, ES, SF	
11,900.0	7,511.4	7,531.9	7,485.4	0.0	20.8	89.87	4,351.0	199.8	302.2	283.6	18.59	16.261	
12,000.0	7,510.4	7,530.9	7,484.4	0.0	20.8	89.68	4,351.0	199.8	338.2	319.6	18.58	18.203	
12,041.6	7,510.0	7,530.5	7,484.0	0.0	20.8	89.59	4,351.0	199.8	360.4	341.8	18.58	19.399	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_PINNACLE 2-2HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Reference Site:	WELD_PINNACLE 2-2HZ	MD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Site Error:	0.0 ft	North Reference:	True
Reference Well:	P_PINNACLE 2-2HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	P_PINNACLE 2-2HZ	Database:	edm5000p
Reference Design:	P_Pinnacle 2-2HZ (wp03)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
WELD_PINNACLE 17-2 PAD - P_PINNACLE 24-2 - P_PINNACLE 24-2 - Plan #2 9-8-10 RHS												Offset Well Error:	0.0 ft
Survey Program: 0-Reference													
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
9,100.0	7,533.8	7,748.9	7,507.8	0.0	32.3	90.28	2,413.0	573.0	999.3	967.4	31.96	31.267	
9,200.0	7,533.4	7,748.5	7,507.4	0.0	32.3	90.27	2,413.0	573.0	922.5	890.5	31.96	28.864	
9,300.0	7,533.0	7,748.1	7,507.0	0.0	32.3	90.25	2,413.0	573.0	850.5	818.5	31.96	26.612	
9,400.0	7,532.5	7,747.6	7,506.5	0.0	32.3	90.22	2,413.0	573.0	784.7	752.7	31.96	24.553	
9,500.0	7,532.0	7,747.1	7,506.0	0.0	32.3	90.19	2,413.0	573.0	726.7	694.7	31.96	22.740	
9,600.0	7,531.5	7,746.6	7,505.5	0.0	32.3	90.15	2,413.0	573.0	678.6	646.6	31.96	21.235	
9,700.0	7,530.9	7,746.0	7,504.9	0.0	32.3	90.10	2,413.0	573.0	642.6	610.6	31.95	20.108	
9,800.0	7,530.3	7,745.4	7,504.3	0.0	32.3	90.05	2,413.0	573.0	620.7	588.8	31.95	19.426	
9,887.8	7,529.7	7,744.9	7,503.7	0.0	32.3	90.00	2,413.0	573.0	614.5	582.5	31.95	19.231	CC, ES, SF
9,900.0	7,529.7	7,744.8	7,503.7	0.0	32.3	89.99	2,413.0	573.0	614.6	582.6	31.95	19.235	
10,000.0	7,529.0	7,744.1	7,503.0	0.0	32.3	89.93	2,413.0	573.0	624.6	592.7	31.95	19.550	
10,100.0	7,528.3	7,743.4	7,502.3	0.0	32.3	89.86	2,413.0	573.0	650.1	618.2	31.95	20.348	
10,200.0	7,527.6	7,742.7	7,501.6	0.0	32.3	89.78	2,413.0	573.0	689.3	657.3	31.95	21.576	
10,300.0	7,526.8	7,741.9	7,500.8	0.0	32.3	89.70	2,413.0	573.0	740.0	708.1	31.95	23.165	
10,400.0	7,526.0	7,741.1	7,500.0	0.0	32.3	89.61	2,413.0	573.0	800.1	768.1	31.94	25.047	
10,500.0	7,525.2	7,740.3	7,499.2	0.0	32.3	89.51	2,413.0	573.0	867.5	835.6	31.94	27.161	
10,600.0	7,524.3	7,739.4	7,498.3	0.0	32.3	89.41	2,413.0	573.0	940.8	908.9	31.94	29.458	

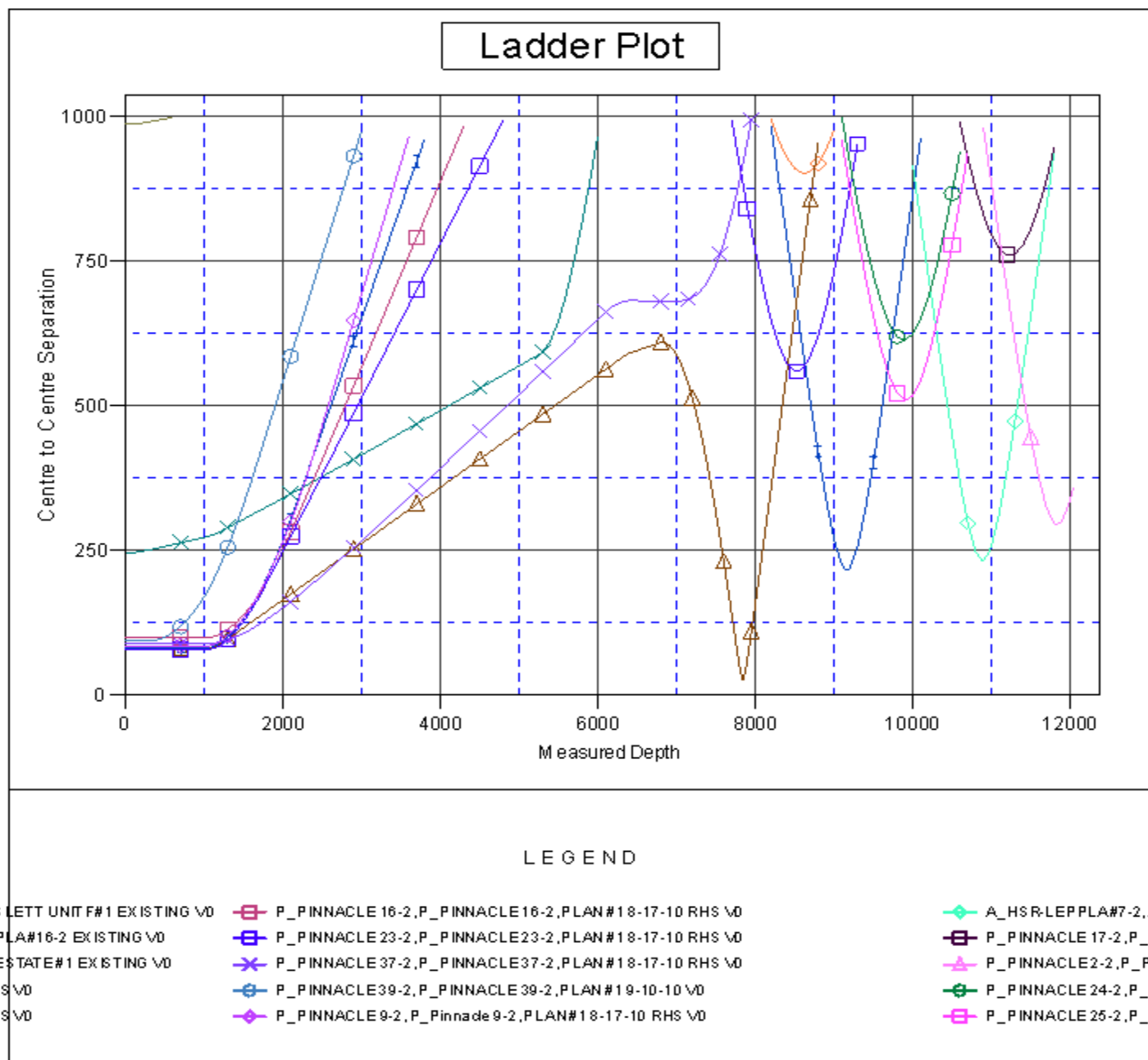
Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_PINNACLE 2-2HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Reference Site:	WELD_PINNACLE 2-2HZ	MD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Site Error:	0.0 ft	North Reference:	True
Reference Well:	P_PINNACLE 2-2HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	P_PINNACLE 2-2HZ	Database:	edm5000p
Reference Design:	P_Pinnacle 2-2HZ (wp03)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
WELD_PINNACLE 17-2 PAD - P_PINNACLE 25-2 - P_PINNACLE 25-2 - Plan #2 9-8-10 RHS												Offset Well Error:	0.0 ft
Survey Program: 0-Reference													
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
9,100.0	7,533.8	7,917.4	7,507.8	0.0	41.7	-90.35	2,407.2	-552.1	959.0	923.3	35.63	26.913	
9,200.0	7,533.4	7,917.0	7,507.4	0.0	41.7	-90.33	2,407.2	-552.1	875.9	840.3	35.63	24.585	
9,300.0	7,533.0	7,916.6	7,507.0	0.0	41.7	-90.31	2,407.2	-552.1	796.8	761.2	35.63	22.366	
9,400.0	7,532.5	7,916.1	7,506.5	0.0	41.7	-90.28	2,407.2	-552.1	722.9	687.3	35.63	20.292	
9,500.0	7,532.0	7,915.6	7,506.0	0.0	41.7	-90.24	2,407.2	-552.1	655.9	620.3	35.62	18.413	
9,600.0	7,531.5	7,915.1	7,505.5	0.0	41.7	-90.19	2,407.2	-552.1	598.2	562.6	35.62	16.794	
9,700.0	7,530.9	7,914.5	7,504.9	0.0	41.7	-90.14	2,407.2	-552.1	552.7	517.1	35.62	15.516	
9,800.0	7,530.3	7,913.9	7,504.3	0.0	41.7	-90.08	2,407.2	-552.1	522.6	487.0	35.62	14.671	
9,900.0	7,529.7	7,913.3	7,503.7	0.0	41.7	-90.01	2,407.2	-552.1	510.6	475.0	35.62	14.334	
9,912.1	7,529.6	7,913.2	7,503.6	0.0	41.7	-90.00	2,407.2	-552.1	510.4	474.8	35.62	14.330 CC, ES, SF	
10,000.0	7,529.0	7,912.6	7,503.0	0.0	41.7	-89.93	2,407.2	-552.1	518.0	482.3	35.62	14.541	
10,100.0	7,528.3	7,911.9	7,502.3	0.0	41.7	-89.85	2,407.2	-552.1	543.9	508.3	35.62	15.269	
10,200.0	7,527.6	7,911.2	7,501.6	0.0	41.7	-89.76	2,407.2	-552.1	586.0	550.4	35.62	16.451	
10,300.0	7,526.8	7,910.4	7,500.8	0.0	41.7	-89.66	2,407.2	-552.1	641.0	605.4	35.62	17.995	
10,400.0	7,526.0	7,909.6	7,500.0	0.0	41.7	-89.55	2,407.2	-552.1	706.0	670.4	35.62	19.819	
10,500.0	7,525.2	7,908.8	7,499.2	0.0	41.7	-89.44	2,407.2	-552.1	778.4	742.8	35.62	21.852	
10,600.0	7,524.3	7,907.9	7,498.3	0.0	41.7	-89.32	2,407.2	-552.1	856.4	820.8	35.62	24.041	
10,700.0	7,523.4	7,907.0	7,497.4	0.0	41.7	-89.19	2,407.2	-552.1	938.6	902.9	35.62	26.346	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_PINNACLE 2-2HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Reference Site:	WELD_PINNACLE 2-2HZ	MD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Site Error:	0.0 ft	North Reference:	True
Reference Well:	P_PINNACLE 2-2HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	P_PINNACLE 2-2HZ	Database:	edm5000p
Reference Design:	P_Pinnacle 2-2HZ (wp03)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to GL 5006' & RKB 17' @ 5023.0ft
Offset Depths are relative to Offset Datum
Central Meridian is 105° 30' 0.00000 W

Coordinates are relative to: P_PINNACLE 2-2HZ
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.34°



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_PINNACLE 2-2HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Reference Site:	WELD_PINNACLE 2-2HZ	MD Reference:	GL 5006' & RKB 17' @ 5023.0ft
Site Error:	0.0 ft	North Reference:	True
Reference Well:	P_PINNACLE 2-2HZ	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	P_PINNACLE 2-2HZ	Database:	edm5000p
Reference Design:	P_Pinnacle 2-2HZ (wp03)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to GL 5006' & RKB 17' @ 5023.0ft
Offset Depths are relative to Offset Datum
Central Meridian is 105° 30' 0.00000 W

Coordinates are relative to: P_PINNACLE 2-2HZ
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.34°

