



Piceance Energy, LLC

**Mesa County, CO
Gunderson
Gunderson 29-09M**

Wellbore #1

Plan: Design #1

Standard Planning Report

03 October, 2014

Archer



Project: Mesa County, CO
Site: Gunderson
Well: Gunderson 29-09M
Wellbore: Wellbore #1
Design: Design #1
Latitude: 39.248809
Longitude: -107.788151
Ground Level: 7536.00
WELL @ 7560.00usft (Original Well Elev)

Archer

PROJECT DETAILS: Mesa County, CO

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Central Zone
System Datum: Mean Sea Level

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well Gunderson 29-09M, True North
Vertical (TVD) Reference: WELL @ 7560.00usft (Original Well Elev)
Section (VS) Reference: Slot - (0.00N, 0.00E)
Measured Depth Reference: WELL @ 7560.00usft (Original Well Elev)
Calculation Method: Minimum Curvature

WELL DETAILS: Gunderson 29-09M

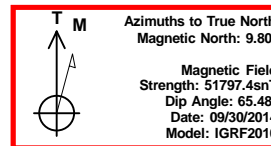
+N/-S	+E/-W	Northing	Ground Level:	7536.00	Latitude	Longitude	Slot
0.00	0.00	1523673.200	Easting	2352083.679	39.248809	-107.788151	

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Gunderson 29-09M tgt	7680.00	270.71	-1372.69	1523978.391	2350718.240	39.249553	-107.792998	Circle (Radius: 50.00)

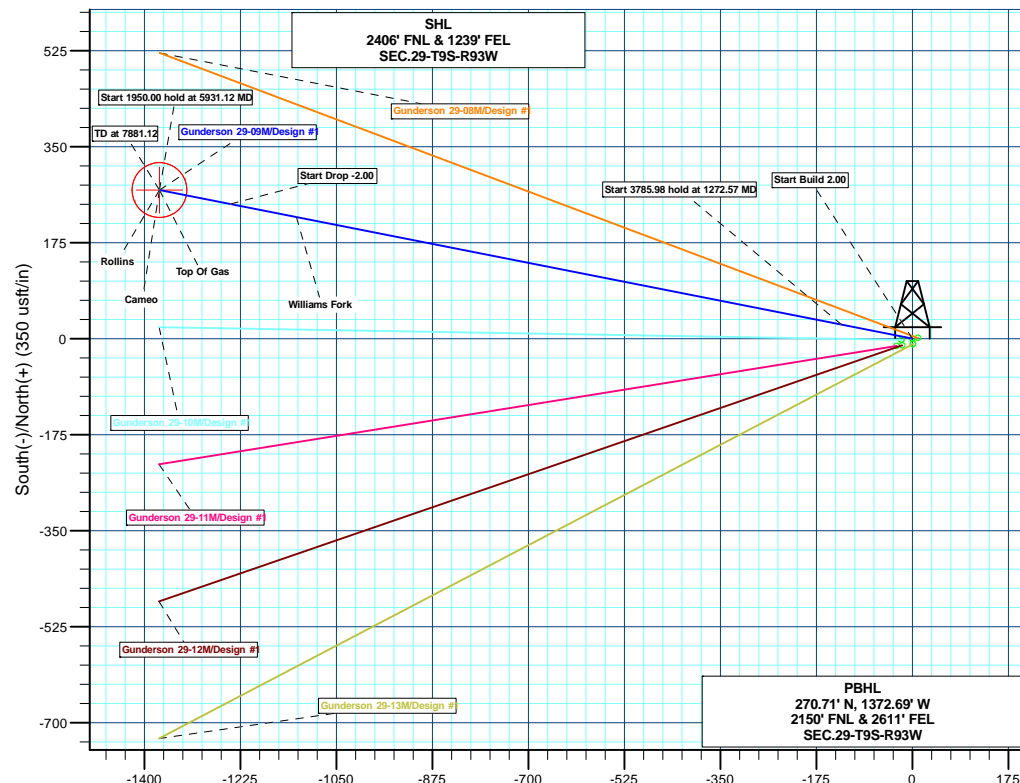
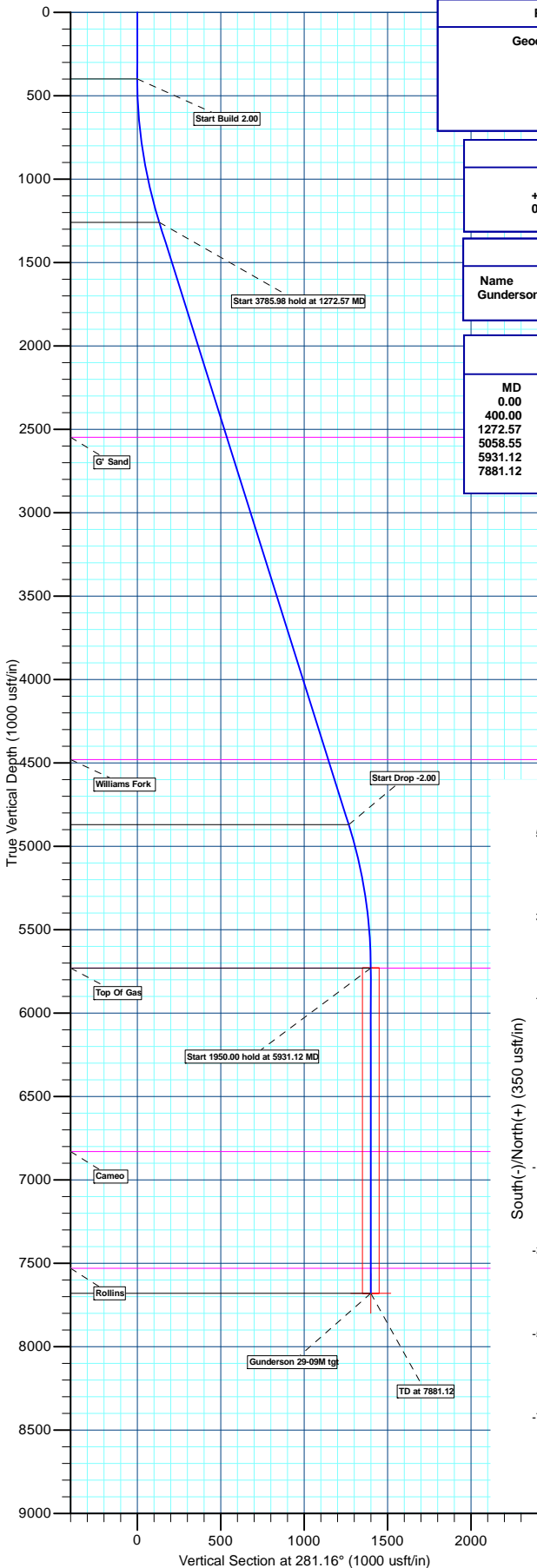
SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00
1272.57	17.45	281.16	1259.14	25.51	-129.37	2.00	281.16	131.86	Start 3785.98 hold at 1272.57 MD
5058.55	17.45	281.16	4870.86	245.19	-1243.32	0.00	0.00	1267.27	Start Drop -2.00
5931.12	0.00	0.00	5730.00	270.71	-1372.69	2.00	180.00	1399.13	Start 1950.00 hold at 5931.12 MD
7881.12	0.00	0.00	7680.00	270.71	-1372.69	0.00	0.00	1399.13	TD at 7881.12



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
2548.00	2623.62	G' Sand
4480.00	4648.83	Williams Fork
5730.00	5931.12	Top Of Gas
6830.00	7031.12	Cameo
7530.00	7731.12	Rollins



Plan: Design #1 (Gunderson 29-09M/Wellbore #1)

Created By: Ricky Osburn Date: 6:41, October 03 2014



Database:	EDMDBBW	Local Co-ordinate Reference:	Well Gunderson 29-09M
Company:	Piceance Energy, LLC	TVD Reference:	WELL @ 7560.00usft (Original Well Elev)
Project:	Mesa County, CO	MD Reference:	WELL @ 7560.00usft (Original Well Elev)
Site:	Gunderson	North Reference:	True
Well:	Gunderson 29-09M	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project	Mesa County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site	Gunderson			
Site Position:		Northing:	1,523,671.416 usft	Latitude: 39.248803
From:	Lat/Long	Easting:	2,352,063.747 usft	Longitude: -107.788221
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"	Grid Convergence: -1.44 °

Well	Gunderson 29-09M					
Well Position	+N/-S	2.29 usft	Northing:	1,523,673.200 usft	Latitude:	39.248809
	+E/-W	19.88 usft	Easting:	2,352,083.679 usft	Longitude:	-107.788150
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	7,536.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	09/30/14	9.80	65.48	51,797

Design	Design #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	281.16

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,272.57	17.45	281.16	1,259.14	25.51	-129.37	2.00	2.00	0.00	281.16	
5,058.55	17.45	281.16	4,870.86	245.19	-1,243.32	0.00	0.00	0.00	0.00	
5,931.12	0.00	0.00	5,730.00	270.71	-1,372.69	2.00	-2.00	0.00	180.00	
7,881.12	0.00	0.00	7,680.00	270.71	-1,372.69	0.00	0.00	0.00	0.00	Gunderson 29-09M tg



Database:	EDMDBBW	Local Co-ordinate Reference:	Well Gunderson 29-09M
Company:	Piceance Energy, LLC	TVD Reference:	WELL @ 7560.00usft (Original Well Elev)
Project:	Mesa County, CO	MD Reference:	WELL @ 7560.00usft (Original Well Elev)
Site:	Gunderson	North Reference:	True
Well:	Gunderson 29-09M	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	2.00	281.16	499.98	0.34	-1.71	1.75	2.00	2.00	0.00
600.00	4.00	281.16	599.84	1.35	-6.85	6.98	2.00	2.00	0.00
700.00	6.00	281.16	699.45	3.04	-15.40	15.69	2.00	2.00	0.00
800.00	8.00	281.16	798.70	5.39	-27.35	27.88	2.00	2.00	0.00
900.00	10.00	281.16	897.47	8.42	-42.70	43.52	2.00	2.00	0.00
1,000.00	12.00	281.16	995.62	12.11	-61.42	62.60	2.00	2.00	0.00
1,100.00	14.00	281.16	1,093.06	16.46	-83.49	85.10	2.00	2.00	0.00
1,200.00	16.00	281.16	1,189.64	21.47	-108.88	110.98	2.00	2.00	0.00
Start 3785.98 hold at 1272.57 MD									
1,272.57	17.45	281.16	1,259.14	25.51	-129.37	131.86	2.00	2.00	0.00
1,300.00	17.45	281.16	1,285.31	27.10	-137.44	140.09	0.00	0.00	0.00
1,400.00	17.45	281.16	1,380.71	32.91	-166.86	170.08	0.00	0.00	0.00
8 5/8" Csg.									
1,500.00	17.45	281.16	1,476.10	38.71	-196.29	200.07	0.00	0.00	0.00
1,600.00	17.45	281.16	1,571.50	44.51	-225.71	230.06	0.00	0.00	0.00
1,700.00	17.45	281.16	1,666.90	50.31	-255.13	260.05	0.00	0.00	0.00
1,800.00	17.45	281.16	1,762.29	56.12	-284.56	290.04	0.00	0.00	0.00
1,900.00	17.45	281.16	1,857.69	61.92	-313.98	320.03	0.00	0.00	0.00
2,000.00	17.45	281.16	1,953.09	67.72	-343.40	350.02	0.00	0.00	0.00
2,100.00	17.45	281.16	2,048.49	73.52	-372.82	380.01	0.00	0.00	0.00
2,200.00	17.45	281.16	2,143.88	79.33	-402.25	410.00	0.00	0.00	0.00
2,300.00	17.45	281.16	2,239.28	85.13	-431.67	439.99	0.00	0.00	0.00
2,400.00	17.45	281.16	2,334.68	90.93	-461.09	469.97	0.00	0.00	0.00
2,500.00	17.45	281.16	2,430.07	96.73	-490.52	499.96	0.00	0.00	0.00
2,600.00	17.45	281.16	2,525.47	102.54	-519.94	529.95	0.00	0.00	0.00
G' Sand									
2,623.62	17.45	281.16	2,548.00	103.91	-526.89	537.04	0.00	0.00	0.00
2,700.00	17.45	281.16	2,620.87	108.34	-549.36	559.94	0.00	0.00	0.00
2,800.00	17.45	281.16	2,716.27	114.14	-578.79	589.93	0.00	0.00	0.00
2,900.00	17.45	281.16	2,811.66	119.94	-608.21	619.92	0.00	0.00	0.00
3,000.00	17.45	281.16	2,907.06	125.75	-637.63	649.91	0.00	0.00	0.00
3,100.00	17.45	281.16	3,002.46	131.55	-667.06	679.90	0.00	0.00	0.00
3,200.00	17.45	281.16	3,097.85	137.35	-696.48	709.89	0.00	0.00	0.00
3,300.00	17.45	281.16	3,193.25	143.15	-725.90	739.88	0.00	0.00	0.00
3,400.00	17.45	281.16	3,288.65	148.96	-755.32	769.87	0.00	0.00	0.00
3,500.00	17.45	281.16	3,384.05	154.76	-784.75	799.86	0.00	0.00	0.00
3,600.00	17.45	281.16	3,479.44	160.56	-814.17	829.85	0.00	0.00	0.00
3,700.00	17.45	281.16	3,574.84	166.36	-843.59	859.84	0.00	0.00	0.00
3,800.00	17.45	281.16	3,670.24	172.17	-873.02	889.83	0.00	0.00	0.00
3,900.00	17.45	281.16	3,765.63	177.97	-902.44	919.82	0.00	0.00	0.00
4,000.00	17.45	281.16	3,861.03	183.77	-931.86	949.81	0.00	0.00	0.00
4,100.00	17.45	281.16	3,956.43	189.57	-961.29	979.80	0.00	0.00	0.00
4,200.00	17.45	281.16	4,051.83	195.38	-990.71	1,009.79	0.00	0.00	0.00
4,300.00	17.45	281.16	4,147.22	201.18	-1,020.13	1,039.78	0.00	0.00	0.00
4,400.00	17.45	281.16	4,242.62	206.98	-1,049.56	1,069.77	0.00	0.00	0.00
4,500.00	17.45	281.16	4,338.02	212.78	-1,078.98	1,099.76	0.00	0.00	0.00
4,600.00	17.45	281.16	4,433.41	218.59	-1,108.40	1,129.75	0.00	0.00	0.00
Williams Fork									



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Company:	Piceance Energy, LLC	TVD Reference:	WELL @ 7560.00usft (Original Well Elev)
Project:	Mesa County, CO	MD Reference:	WELL @ 7560.00usft (Original Well Elev)
Site:	Gunderson	North Reference:	True
Well:	Gunderson 29-09M	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,648.83	17.45	281.16	4,480.00	221.42	-1,122.77	1,144.39	0.00	0.00	0.00
4,700.00	17.45	281.16	4,528.81	224.39	-1,137.82	1,159.74	0.00	0.00	0.00
4,800.00	17.45	281.16	4,624.21	230.19	-1,167.25	1,189.73	0.00	0.00	0.00
4,900.00	17.45	281.16	4,719.61	235.99	-1,196.67	1,219.72	0.00	0.00	0.00
5,000.00	17.45	281.16	4,815.00	241.80	-1,226.09	1,249.71	0.00	0.00	0.00
Start Drop -2.00									
5,058.55	17.45	281.16	4,870.86	245.19	-1,243.32	1,267.27	0.00	0.00	0.00
5,100.00	16.62	281.16	4,910.49	247.54	-1,255.24	1,279.41	2.00	-2.00	0.00
5,200.00	14.62	281.16	5,006.79	252.75	-1,281.66	1,306.34	2.00	-2.00	0.00
5,300.00	12.62	281.16	5,103.97	257.31	-1,304.76	1,329.89	2.00	-2.00	0.00
5,400.00	10.62	281.16	5,201.92	261.21	-1,324.53	1,350.04	2.00	-2.00	0.00
5,500.00	8.62	281.16	5,300.50	264.44	-1,340.92	1,366.75	2.00	-2.00	0.00
5,600.00	6.62	281.16	5,399.62	267.01	-1,353.94	1,380.01	2.00	-2.00	0.00
5,700.00	4.62	281.16	5,499.13	268.90	-1,363.55	1,389.81	2.00	-2.00	0.00
5,800.00	2.62	281.16	5,598.92	270.13	-1,369.75	1,396.13	2.00	-2.00	0.00
5,900.00	0.62	281.16	5,698.88	270.67	-1,372.53	1,398.96	2.00	-2.00	0.00
Start 1950.00 hold at 5931.12 MD - Top Of Gas									
5,931.12	0.00	0.00	5,730.00	270.71	-1,372.69	1,399.13	2.00	-2.00	0.00
6,000.00	0.00	0.00	5,798.88	270.71	-1,372.69	1,399.13	0.00	0.00	0.00
6,100.00	0.00	0.00	5,898.88	270.71	-1,372.69	1,399.13	0.00	0.00	0.00
6,200.00	0.00	0.00	5,998.88	270.71	-1,372.69	1,399.13	0.00	0.00	0.00
6,300.00	0.00	0.00	6,098.88	270.71	-1,372.69	1,399.13	0.00	0.00	0.00
6,400.00	0.00	0.00	6,198.88	270.71	-1,372.69	1,399.13	0.00	0.00	0.00
6,500.00	0.00	0.00	6,298.88	270.71	-1,372.69	1,399.13	0.00	0.00	0.00
6,600.00	0.00	0.00	6,398.88	270.71	-1,372.69	1,399.13	0.00	0.00	0.00
6,700.00	0.00	0.00	6,498.88	270.71	-1,372.69	1,399.13	0.00	0.00	0.00
6,800.00	0.00	0.00	6,598.88	270.71	-1,372.69	1,399.13	0.00	0.00	0.00
6,900.00	0.00	0.00	6,698.88	270.71	-1,372.69	1,399.13	0.00	0.00	0.00
7,000.00	0.00	0.00	6,798.88	270.71	-1,372.69	1,399.13	0.00	0.00	0.00
Cameo									
7,031.12	0.00	0.00	6,830.00	270.71	-1,372.69	1,399.13	0.00	0.00	0.00
7,100.00	0.00	0.00	6,898.88	270.71	-1,372.69	1,399.13	0.00	0.00	0.00
7,200.00	0.00	0.00	6,998.88	270.71	-1,372.69	1,399.13	0.00	0.00	0.00
7,300.00	0.00	0.00	7,098.88	270.71	-1,372.69	1,399.13	0.00	0.00	0.00
7,400.00	0.00	0.00	7,198.88	270.71	-1,372.69	1,399.13	0.00	0.00	0.00
7,500.00	0.00	0.00	7,298.88	270.71	-1,372.69	1,399.13	0.00	0.00	0.00
7,600.00	0.00	0.00	7,398.88	270.71	-1,372.69	1,399.13	0.00	0.00	0.00
7,700.00	0.00	0.00	7,498.88	270.71	-1,372.69	1,399.13	0.00	0.00	0.00
Rollins									
7,731.12	0.00	0.00	7,530.00	270.71	-1,372.69	1,399.13	0.00	0.00	0.00
7,800.00	0.00	0.00	7,598.88	270.71	-1,372.69	1,399.13	0.00	0.00	0.00
TD at 7881.12									
7,881.12	0.00	0.00	7,680.00	270.71	-1,372.69	1,399.13	0.00	0.00	0.00



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Site:	Gunderson	North Reference:	True
Well:	Gunderson 29-09M	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
Gunderson 29-09M tgt	0.00	0.00	7,680.00	270.71	-1,372.69	1,523,978.391	2,350,718.240	39.249553	-107.792998
- plan hits target center									
- Circle (radius 50.00)									

Casing Points				
Measured Depth	Vertical Depth		Casing Diameter	Hole Diameter
(usft)	(usft)	Name	(")	(")
1,500.00	1,476.10	8 5/8" Csg.	8-5/8	12-1/4

Formations					
Measured Depth	Vertical Depth			Dip	Dip Direction
(usft)	(usft)	Name	Lithology	(°)	(°)
2,623.62	2,548.00	G' Sand		0.00	
4,648.83	4,480.00	Williams Fork		0.00	
5,931.12	5,730.00	Top Of Gas		0.00	
7,031.12	6,830.00	Cameo		0.00	
7,731.12	7,530.00	Rollins		0.00	

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		
(usft)	(usft)	+N/-S (usft)	+E/-W (usft)	Comment
400.00	400.00	0.00	0.00	Start Build 2.00
1,272.57	1,259.14	25.51	-129.37	Start 3785.98 hold at 1272.57 MD
5,058.55	4,870.86	245.19	-1,243.32	Start Drop -2.00
5,931.12	5,730.00	270.71	-1,372.69	Start 1950.00 hold at 5931.12 MD
7,881.12	7,680.00	270.71	-1,372.69	TD at 7881.12

Archer

Piceance Energy, LLC

Mesa County, CO

Gunderson

Gunderson 29-09M

Wellbore #1

Design #1

Anticollision Report

03 October, 2014

Archer

Company:	Piceance Energy, LLC	Local Co-ordinate Reference:	Well Gunderson 29-09M
Project:	Mesa County, CO	TVD Reference:	WELL @ 7560.00usft (Original Well Elev)
Reference Site:	Gunderson	MD Reference:	WELL @ 7560.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Gunderson 29-09M	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMDBBW
Reference Design:	Design #1	Offset TVD Reference:	Reference Datum

Reference	Design #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 30.00usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 9,999.98 usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	10/03/14		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	7,881.12	Design #1 (Wellbore #1)	MWD	MWD - Standard	

Summary						
Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance		Separation Factor	Warning
			Between Centres (usft)	Between Ellipses (usft)		
Gunderson						
Gunderson 29-08M - Wellbore #1 - Design #1	425.97	426.22	4.57	2.94	2.791	CC, ES, SF
Gunderson 29-10M - Wellbore #1 - Design #1	834.82	833.11	10.85	7.36	3.108	CC
Gunderson 29-10M - Wellbore #1 - Design #1	870.00	868.18	10.99	7.28	2.967	ES
Gunderson 29-10M - Wellbore #1 - Design #1	930.00	928.02	11.85	7.75	2.892	SF
Gunderson 29-11M - Wellbore #1 - Design #1	777.63	776.33	19.08	15.85	5.898	CC
Gunderson 29-11M - Wellbore #1 - Design #1	780.00	778.68	19.08	15.84	5.877	ES
Gunderson 29-11M - Wellbore #1 - Design #1	810.00	808.44	19.46	16.06	5.728	SF
Gunderson 29-12M - Wellbore #1 - Design #1	703.16	702.59	15.63	12.75	5.423	CC, ES
Gunderson 29-12M - Wellbore #1 - Design #1	750.00	749.13	16.52	13.41	5.309	SF
Gunderson 29-13M - Wellbore #1 - Design #1	390.00	390.00	10.01	8.53	6.787	CC
Gunderson 29-13M - Wellbore #1 - Design #1	450.00	450.00	10.15	8.41	5.833	ES
Gunderson 29-13M - Wellbore #1 - Design #1	540.00	539.94	11.52	9.38	5.386	SF

Offset Design	Gunderson - Gunderson 29-08M - Wellbore #1 - Design #1											Offset Site Error:	0.00 usft
Survey Program:	0-MWD											Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	83.52	1.13	9.94	10.00				
30.00	30.00	30.00	30.00	0.01	0.03	83.52	1.13	9.94	10.00	9.97	0.03	309.085	
60.00	60.00	60.00	60.00	0.04	0.05	83.52	1.13	9.94	10.00	9.91	0.09	109.089	
90.00	90.00	90.00	90.00	0.07	0.08	83.52	1.13	9.94	10.00	9.85	0.15	66.232	
120.00	120.00	120.00	120.00	0.13	0.13	83.52	1.13	9.94	10.00	9.74	0.26	38.369	
150.00	150.00	150.00	150.00	0.20	0.20	83.52	1.13	9.94	10.00	9.61	0.40	25.289	
180.00	180.00	180.00	180.00	0.27	0.27	83.52	1.13	9.94	10.00	9.47	0.53	18.859	
210.00	210.00	210.03	210.03	0.33	0.33	83.47	1.14	9.92	9.99	9.32	0.66	15.024	
240.00	240.00	240.12	240.12	0.40	0.40	82.77	1.23	9.68	9.76	8.96	0.80	12.220	
270.00	270.00	270.20	270.20	0.47	0.46	81.09	1.43	9.13	9.25	8.32	0.93	9.924	
300.00	300.00	300.27	300.25	0.53	0.53	78.11	1.75	8.30	8.48	7.42	1.07	7.961	
330.00	330.00	330.32	330.27	0.60	0.60	73.14	2.17	7.17	7.49	6.29	1.20	6.233	
360.00	360.00	360.33	360.25	0.67	0.67	64.76	2.71	5.74	6.35	5.01	1.34	4.745	
390.00	390.00	390.31	390.17	0.74	0.74	50.21	3.35	4.02	5.24	3.77	1.48	3.553	
420.00	420.00	420.26	420.04	0.80	0.81	27.01	4.11	2.02	4.59	2.98	1.61	2.853	
425.97	425.97	426.22	425.98	0.82	0.82	21.81	4.27	1.58	4.57	2.94	1.64	2.791	CC, ES, SF

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

Company:	Piceance Energy, LLC	Local Co-ordinate Reference:	Well Gunderson 29-09M
Project:	Mesa County, CO	TVD Reference:	WELL @ 7560.00usft (Original Well Elev)
Reference Site:	Gunderson	MD Reference:	WELL @ 7560.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Gunderson 29-09M	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMDBBW
Reference Design:	Design #1	Offset TVD Reference:	Reference Datum

Offset Design Gunderson - Gunderson 29-08M - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
450.00	450.00	450.18	449.86	0.87	0.88	1.75	4.97	-0.28	4.89	3.14	1.75	2.791		
480.00	479.99	480.08	479.63	0.93	0.96	-17.17	5.94	-2.87	6.00	4.12	1.89	3.180		
510.00	509.97	509.95	509.35	1.00	1.04	-29.02	7.02	-5.74	7.59	5.57	2.02	3.752		
540.00	539.94	539.81	539.01	1.06	1.12	-36.31	8.21	-8.90	9.41	7.26	2.16	4.361		
570.00	569.90	569.64	568.61	1.13	1.21	-40.95	9.51	-12.35	11.37	9.08	2.29	4.959		
600.00	599.84	599.44	598.15	1.19	1.30	-44.02	10.91	-16.09	13.40	10.98	2.42	5.528		
630.00	629.75	629.23	627.63	1.27	1.39	-46.10	12.42	-20.10	15.48	12.92	2.57	6.035		
660.00	659.64	658.99	657.03	1.34	1.49	-47.52	14.04	-24.41	17.60	14.90	2.71	6.505		
690.00	689.50	688.73	686.37	1.41	1.59	-48.49	15.76	-28.99	19.75	16.90	2.85	6.941		
720.00	719.33	718.45	716.63	1.49	1.70	-49.14	17.59	-33.85	21.92	18.93	2.99	7.328		
750.00	749.13	748.15	744.81	1.57	1.81	-49.55	19.52	-39.00	24.11	20.97	3.14	7.678		
780.00	778.89	777.82	773.91	1.65	1.93	-49.77	21.56	-44.42	26.32	23.03	3.29	8.006		
810.00	808.60	807.47	802.93	1.74	2.05	-49.86	23.70	-50.12	28.55	25.11	3.44	8.304		
840.00	838.27	837.09	831.86	1.83	2.18	-49.83	25.95	-56.10	30.79	27.19	3.60	8.560		
870.00	867.89	866.70	860.70	1.92	2.31	-49.72	28.30	-62.35	33.05	29.30	3.76	8.800		
900.00	897.47	896.28	889.44	2.02	2.44	-49.53	30.75	-68.88	35.33	31.42	3.91	9.027		
930.00	926.98	925.83	918.09	2.12	2.59	-49.28	33.31	-75.67	37.62	33.54	4.09	9.207		
960.00	956.44	955.37	946.65	2.23	2.73	-48.99	35.96	-82.74	39.93	35.67	4.26	9.376		
990.00	985.84	984.88	975.10	2.34	2.88	-48.65	38.72	-90.08	42.26	37.83	4.43	9.535		
1,020.00	1,015.17	1,014.37	1,003.44	2.46	3.04	-48.27	41.58	-97.68	44.61	39.99	4.61	9.666		
1,050.00	1,044.44	1,043.83	1,031.68	2.59	3.21	-47.86	44.54	-105.55	46.97	42.16	4.81	9.774		
1,080.00	1,073.63	1,073.27	1,059.81	2.71	3.37	-47.42	47.59	-113.69	49.35	44.35	5.00	9.878		
1,110.00	1,102.75	1,103.03	1,088.17	2.85	3.55	-46.98	50.76	-122.12	51.68	46.48	5.20	9.945		
1,140.00	1,131.80	1,132.95	1,116.68	2.99	3.73	-46.42	53.96	-130.62	53.76	48.35	5.41	9.934		
1,170.00	1,160.76	1,162.89	1,145.21	3.14	3.91	-45.72	57.15	-139.12	55.57	49.94	5.63	9.870		
1,200.00	1,189.64	1,192.84	1,173.75	3.28	4.09	-44.90	60.34	-147.62	57.13	51.28	5.86	9.757		
1,230.00	1,218.44	1,222.79	1,202.30	3.44	4.27	-43.95	63.54	-156.12	58.44	52.33	6.11	9.569		
1,260.00	1,247.14	1,252.76	1,230.85	3.61	4.45	-42.86	66.74	-164.63	59.50	53.14	6.37	9.348		
1,290.00	1,275.77	1,282.72	1,259.40	3.77	4.64	-41.67	69.93	-173.13	60.37	53.74	6.64	9.097		
1,320.00	1,304.39	1,312.68	1,287.95	3.95	4.82	-40.50	73.13	-181.64	61.25	54.32	6.93	8.842		
1,350.00	1,333.01	1,342.64	1,316.50	4.12	5.01	-39.36	76.33	-190.14	62.14	54.92	7.22	8.604		
1,380.00	1,361.63	1,372.61	1,345.05	4.30	5.19	-38.25	79.52	-198.65	63.06	55.53	7.52	8.380		
1,410.00	1,390.25	1,402.57	1,373.61	4.47	5.38	-37.18	82.72	-207.16	64.00	56.16	7.84	8.167		
1,440.00	1,418.86	1,432.53	1,402.16	4.65	5.56	-36.15	85.92	-215.66	64.96	56.81	8.15	7.967		
1,470.00	1,447.48	1,462.50	1,430.71	4.83	5.75	-35.14	89.12	-224.17	65.94	57.47	8.47	7.781		
1,500.00	1,476.10	1,492.46	1,459.26	5.01	5.94	-34.17	92.31	-232.67	66.94	58.14	8.80	7.604		
1,530.00	1,504.72	1,522.42	1,487.81	5.19	6.13	-33.23	95.51	-241.18	67.96	58.82	9.14	7.438		
1,560.00	1,533.34	1,552.38	1,516.36	5.37	6.31	-32.31	98.71	-249.68	68.99	59.52	9.48	7.281		
1,590.00	1,561.96	1,582.35	1,544.92	5.55	6.50	-31.43	101.90	-258.19	70.04	60.22	9.82	7.134		
1,620.00	1,590.58	1,612.31	1,573.47	5.73	6.69	-30.57	105.10	-266.70	71.11	60.94	10.16	6.996		
1,650.00	1,619.20	1,642.27	1,602.02	5.92	6.88	-29.74	108.30	-275.20	72.19	61.67	10.52	6.865		
1,680.00	1,647.82	1,672.24	1,630.57	6.10	7.07	-28.93	111.49	-283.71	73.29	62.42	10.87	6.743		
1,710.00	1,676.44	1,702.20	1,659.12	6.28	7.25	-28.15	114.69	-292.21	74.40	63.17	11.23	6.627		
1,740.00	1,705.06	1,732.16	1,687.68	6.47	7.44	-27.40	117.89	-300.72	75.52	63.93	11.59	6.518		
1,770.00	1,733.67	1,762.12	1,716.23	6.65	7.63	-26.66	121.08	-309.22	76.66	64.71	11.95	6.415		
1,800.00	1,762.29	1,792.09	1,744.78	6.83	7.82	-25.95	124.28	-317.73	77.80	65.49	12.31	6.318		
1,830.00	1,790.91	1,822.05	1,773.33	7.02	8.01	-25.26	127.48	-326.24	78.96	66.28	12.68	6.226		
1,860.00	1,819.53	1,852.01	1,801.88	7.21	8.20	-24.59	130.67	-334.74	80.13	67.08	13.05	6.139		
1,890.00	1,848.15	1,881.98	1,830.43	7.39	8.39	-23.95	133.87	-343.25	81.32	67.89	13.42	6.057		
1,920.00	1,876.77	1,911.94	1,858.99	7.58	8.58	-23.32	137.07	-351.75	82.51	68.71	13.80	5.980		
1,950.00	1,905.39	1,941.90	1,887.54	7.76	8.77	-22.71	140.26	-360.26	83.71	69.53	14.17	5.906		
1,980.00	1,934.01	1,971.86	1,916.09	7.95	8.96	-22.11	143.46	-368.77	84.92	70.37	14.55	5.837		

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

Company:	Piceance Energy, LLC	Local Co-ordinate Reference:	Well Gunderson 29-09M
Project:	Mesa County, CO	TVD Reference:	WELL @ 7560.00usft (Original Well Elev)
Reference Site:	Gunderson	MD Reference:	WELL @ 7560.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Gunderson 29-09M	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMDBBW
Reference Design:	Design #1	Offset TVD Reference:	Reference Datum

Offset Design Gunderson - Gunderson 29-08M - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
2,010.00	1,962.63	2,001.83	1,944.64	8.14	9.15	-21.54	146.66	-377.27	86.14	71.21	14.93	5.771		
2,040.00	1,991.25	2,031.79	1,973.19	8.32	9.34	-20.98	149.85	-385.78	87.36	72.06	15.31	5.708		
2,070.00	2,019.87	2,061.75	2,001.75	8.51	9.53	-20.44	153.05	-394.28	88.60	72.91	15.69	5.648		
2,100.00	2,048.49	2,091.72	2,030.30	8.70	9.72	-19.91	156.25	-402.79	89.84	73.78	16.07	5.592		
2,130.00	2,077.10	2,121.68	2,058.85	8.88	9.91	-19.40	159.44	-411.29	91.09	74.64	16.45	5.538		
2,160.00	2,105.72	2,151.64	2,087.40	9.07	10.10	-18.90	162.64	-419.80	92.35	75.52	16.83	5.487		
2,190.00	2,134.34	2,181.60	2,115.95	9.26	10.29	-18.42	165.84	-428.31	93.62	76.40	17.22	5.438		
2,220.00	2,162.96	2,211.57	2,144.50	9.45	10.48	-17.95	169.03	-436.81	94.89	77.29	17.60	5.391		
2,250.00	2,191.58	2,241.53	2,173.06	9.63	10.67	-17.49	172.23	-445.32	96.17	78.18	17.98	5.347		
2,280.00	2,220.20	2,271.49	2,201.61	9.82	10.86	-17.04	175.43	-453.82	97.45	79.08	18.37	5.305		
2,310.00	2,248.82	2,301.46	2,230.16	10.01	11.05	-16.61	178.63	-462.33	98.74	79.98	18.76	5.264		
2,340.00	2,277.44	2,331.42	2,258.71	10.20	11.24	-16.19	181.82	-470.83	100.04	80.89	19.14	5.226		
2,370.00	2,306.06	2,361.38	2,287.26	10.39	11.43	-15.78	185.02	-479.34	101.34	81.81	19.53	5.189		
2,400.00	2,334.68	2,391.34	2,315.81	10.57	11.62	-15.38	188.22	-487.85	102.64	82.73	19.92	5.154		
2,430.00	2,363.30	2,421.31	2,344.37	10.76	11.81	-14.99	191.41	-496.35	103.95	83.65	20.30	5.120		
2,460.00	2,391.92	2,451.27	2,372.92	10.95	12.00	-14.61	194.61	-504.86	105.27	84.58	20.69	5.087		
2,490.00	2,420.53	2,481.23	2,401.47	11.14	12.19	-14.24	197.81	-513.36	106.59	85.51	21.08	5.056		
2,520.00	2,449.15	2,511.20	2,430.02	11.33	12.38	-13.87	201.00	-521.87	107.92	86.45	21.47	5.027		
2,550.00	2,477.77	2,541.16	2,458.57	11.52	12.57	-13.52	204.20	-530.38	109.25	87.39	21.86	4.998		
2,580.00	2,506.39	2,571.12	2,487.13	11.71	12.76	-13.18	207.40	-538.88	110.58	88.33	22.25	4.971		
2,610.00	2,535.01	2,601.08	2,515.68	11.89	12.95	-12.84	210.59	-547.39	111.92	89.28	22.64	4.944		
2,640.00	2,563.63	2,631.05	2,544.23	12.08	13.14	-12.52	213.79	-555.89	113.26	90.23	23.02	4.919		
2,670.00	2,592.25	2,661.01	2,572.78	12.27	13.33	-12.20	216.99	-564.40	114.60	91.19	23.41	4.895		
2,700.00	2,620.87	2,690.97	2,601.33	12.46	13.52	-11.89	220.18	-572.90	115.95	92.15	23.80	4.871		
2,730.00	2,649.49	2,720.94	2,629.88	12.65	13.71	-11.58	223.38	-581.41	117.30	93.11	24.19	4.849		
2,760.00	2,678.11	2,750.90	2,658.44	12.84	13.90	-11.28	226.58	-589.92	118.66	94.08	24.58	4.827		
2,790.00	2,706.73	2,780.86	2,686.99	13.03	14.10	-10.99	229.77	-598.42	120.02	95.05	24.97	4.806		
2,820.00	2,735.34	2,810.82	2,715.54	13.22	14.29	-10.71	232.97	-606.93	121.38	96.02	25.36	4.786		
2,850.00	2,763.96	2,840.79	2,744.09	13.41	14.48	-10.43	236.17	-615.43	122.75	97.00	25.75	4.767		
2,880.00	2,792.58	2,870.75	2,772.64	13.60	14.67	-10.16	239.36	-623.94	124.11	97.97	26.14	4.748		
2,910.00	2,821.20	2,900.71	2,801.20	13.78	14.86	-9.90	242.56	-632.44	125.48	98.96	26.53	4.730		
2,940.00	2,849.82	2,930.68	2,829.75	13.97	15.05	-9.64	245.76	-640.95	126.86	99.94	26.92	4.713		
2,970.00	2,878.44	2,960.64	2,858.30	14.16	15.24	-9.38	248.95	-649.46	128.23	100.93	27.31	4.696		
3,000.00	2,907.06	2,990.60	2,886.85	14.35	15.43	-9.14	252.15	-657.96	129.61	101.92	27.70	4.680		
3,030.00	2,935.68	3,020.56	2,915.40	14.54	15.62	-8.89	255.35	-666.47	131.00	102.91	28.09	4.664		
3,060.00	2,964.30	3,050.53	2,943.95	14.73	15.81	-8.66	258.54	-674.97	132.38	103.90	28.48	4.649		
3,090.00	2,992.92	3,080.49	2,972.51	14.92	16.00	-8.42	261.74	-683.48	133.76	104.90	28.87	4.634		
3,120.00	3,021.54	3,110.45	3,001.06	15.11	16.20	-8.20	264.94	-691.98	135.15	105.90	29.26	4.620		
3,150.00	3,050.16	3,140.42	3,029.61	15.30	16.39	-7.97	268.14	-700.49	136.54	106.90	29.65	4.606		
3,180.00	3,078.77	3,170.38	3,058.16	15.49	16.58	-7.75	271.33	-709.00	137.94	107.90	30.03	4.593		
3,210.00	3,107.39	3,200.34	3,086.71	15.68	16.77	-7.54	274.53	-717.50	139.33	108.91	30.42	4.580		
3,240.00	3,136.01	3,230.30	3,115.26	15.87	16.96	-7.33	277.73	-726.01	140.73	109.92	30.81	4.567		
3,270.00	3,164.63	3,260.27	3,143.82	16.06	17.15	-7.13	280.92	-734.51	142.13	110.92	31.20	4.555		
3,300.00	3,193.25	3,290.23	3,172.37	16.25	17.34	-6.92	284.12	-743.02	143.53	111.94	31.59	4.543		
3,330.00	3,221.87	3,320.19	3,200.92	16.44	17.53	-6.73	287.32	-751.53	144.93	112.95	31.98	4.532		
3,360.00	3,250.49	3,350.16	3,229.47	16.63	17.72	-6.53	290.51	-760.03	146.33	113.96	32.37	4.521		
3,390.00	3,279.11	3,380.12	3,258.02	16.82	17.91	-6.34	293.71	-768.54	147.74	114.98	32.76	4.510		
3,420.00	3,307.73	3,410.08	3,286.58	17.01	18.11	-6.16	296.91	-777.04	149.15	116.00	33.15	4.500		
3,450.00	3,336.35	3,440.04	3,315.13	17.20	18.30	-5.97	300.10	-785.55	150.56	117.02	33.54	4.489		
3,480.00	3,364.97	3,470.01	3,343.68	17.39	18.49	-5.79	303.30	-794.05	151.97	118.04	33.93	4.480		
3,510.00	3,393.59	3,499.97	3,372.23	17.58	18.68	-5.62	306.50	-802.56	153.38	119.07	34.31	4.470		
3,540.00	3,422.20	3,529.93	3,400.78	17.77	18.87	-5.45	309.69	-811.07	154.79	120.09	34.70	4.461		

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

Company:	Piceance Energy, LLC	Local Co-ordinate Reference:	Well Gunderson 29-09M
Project:	Mesa County, CO	TVD Reference:	WELL @ 7560.00usft (Original Well Elev)
Reference Site:	Gunderson	MD Reference:	WELL @ 7560.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Gunderson 29-09M	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMDBBW
Reference Design:	Design #1	Offset TVD Reference:	Reference Datum

Offset Design Gunderson - Gunderson 29-08M - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
3,570.00	3,450.82	3,559.90	3,429.33	17.96	19.06	-5.28	312.89	-819.57	156.21	121.12	35.09	4.452		
3,600.00	3,479.44	3,589.86	3,457.89	18.15	19.25	-5.11	316.09	-828.08	157.63	122.15	35.48	4.443		
3,630.00	3,508.06	3,619.82	3,486.44	18.33	19.44	-4.95	319.28	-836.58	159.04	123.18	35.87	4.434		
3,660.00	3,536.68	3,649.78	3,514.99	18.52	19.64	-4.79	322.48	-845.09	160.46	124.21	36.26	4.426		
3,690.00	3,565.30	3,679.75	3,543.54	18.71	19.83	-4.63	325.68	-853.59	161.88	125.24	36.64	4.418		
3,720.00	3,593.92	3,709.71	3,572.09	18.90	20.02	-4.47	328.87	-862.10	163.31	126.27	37.03	4.410		
3,750.00	3,622.54	3,739.67	3,600.65	19.09	20.21	-4.32	332.07	-870.61	164.73	127.31	37.42	4.402		
3,780.00	3,651.16	3,769.64	3,629.20	19.28	20.40	-4.17	335.27	-879.11	166.16	128.35	37.81	4.395		
3,810.00	3,679.78	3,799.60	3,657.75	19.47	20.59	-4.02	338.46	-887.62	167.58	129.38	38.20	4.387		
3,840.00	3,708.40	3,829.56	3,686.30	19.66	20.78	-3.88	341.66	-896.12	169.01	130.42	38.58	4.380		
3,870.00	3,737.01	3,859.52	3,714.85	19.85	20.97	-3.74	344.86	-904.63	170.44	131.46	38.97	4.373		
3,900.00	3,765.63	3,889.49	3,743.40	20.04	21.17	-3.60	348.05	-913.14	171.86	132.50	39.36	4.366		
3,930.00	3,794.25	3,919.45	3,771.96	20.23	21.36	-3.46	351.25	-921.64	173.30	133.55	39.75	4.360		
3,960.00	3,822.87	3,949.41	3,800.51	20.42	21.55	-3.33	354.45	-930.15	174.73	134.59	40.14	4.353		
3,990.00	3,851.49	3,979.38	3,829.06	20.61	21.74	-3.19	357.65	-938.65	176.16	135.64	40.52	4.347		
4,020.00	3,880.11	4,009.34	3,857.61	20.80	21.93	-3.06	360.84	-947.16	177.59	136.68	40.91	4.341		
4,050.00	3,908.73	4,039.30	3,886.16	20.99	22.12	-2.93	364.04	-955.66	179.03	137.73	41.30	4.335		
4,080.00	3,937.35	4,069.26	3,914.72	21.18	22.31	-2.81	367.24	-964.17	180.46	138.78	41.69	4.329		
4,110.00	3,965.97	4,099.23	3,943.27	21.37	22.50	-2.68	370.43	-972.68	181.90	139.82	42.07	4.323		
4,140.00	3,994.59	4,129.19	3,971.82	21.56	22.70	-2.56	373.63	-981.18	183.33	140.87	42.46	4.318		
4,170.00	4,023.21	4,159.15	4,000.37	21.75	22.89	-2.44	376.83	-989.69	184.77	141.93	42.85	4.312		
4,200.00	4,051.83	4,189.12	4,028.92	21.94	23.08	-2.32	380.02	-998.19	186.21	142.98	43.23	4.307		
4,230.00	4,080.44	4,219.08	4,057.47	22.13	23.27	-2.20	383.22	-1,006.70	187.65	144.03	43.62	4.302		
4,260.00	4,109.06	4,249.04	4,086.03	22.33	23.46	-2.09	386.42	-1,015.20	189.09	145.08	44.01	4.297		
4,290.00	4,137.68	4,279.00	4,114.58	22.52	23.65	-1.98	389.61	-1,023.71	190.53	146.14	44.39	4.292		
4,320.00	4,166.30	4,308.97	4,143.13	22.71	23.84	-1.86	392.81	-1,032.22	191.97	147.19	44.78	4.287		
4,350.00	4,194.92	4,338.93	4,171.68	22.90	24.03	-1.75	396.01	-1,040.72	193.42	148.25	45.17	4.282		
4,380.00	4,223.54	4,368.89	4,200.23	23.09	24.23	-1.65	399.20	-1,049.23	194.86	149.31	45.56	4.277		
4,410.00	4,252.16	4,398.86	4,228.78	23.28	24.42	-1.54	402.40	-1,057.73	196.30	150.36	45.94	4.273		
4,440.00	4,280.78	4,428.82	4,257.34	23.47	24.61	-1.43	405.60	-1,066.24	197.75	151.42	46.33	4.268		
4,470.00	4,309.40	4,458.78	4,285.89	23.66	24.80	-1.33	408.79	-1,074.75	199.20	152.48	46.71	4.264		
4,500.00	4,338.02	4,488.74	4,314.44	23.85	24.99	-1.23	411.99	-1,083.25	200.64	153.54	47.10	4.260		
4,530.00	4,366.64	4,518.71	4,342.99	24.04	25.18	-1.13	415.19	-1,091.76	202.09	154.60	47.49	4.256		
4,560.00	4,395.26	4,548.67	4,371.54	24.23	25.37	-1.03	418.38	-1,100.26	203.54	155.66	47.87	4.252		
4,590.00	4,423.87	4,578.63	4,400.10	24.42	25.57	-0.93	421.58	-1,108.77	204.98	156.72	48.26	4.247		
4,620.00	4,452.49	4,608.60	4,428.65	24.61	25.76	-0.83	424.78	-1,117.27	206.43	157.79	48.65	4.244		
4,650.00	4,481.11	4,638.56	4,457.20	24.80	25.95	-0.74	427.97	-1,125.78	207.88	158.85	49.03	4.240		
4,680.00	4,509.73	4,668.52	4,485.75	24.99	26.14	-0.65	431.17	-1,134.29	209.33	159.91	49.42	4.236		
4,710.00	4,538.35	4,698.48	4,514.30	25.18	26.33	-0.55	434.37	-1,142.79	210.78	160.98	49.80	4.232		
4,740.00	4,566.97	4,728.45	4,542.85	25.37	26.52	-0.46	437.56	-1,151.30	212.24	162.04	50.19	4.229		
4,770.00	4,595.59	4,758.41	4,571.41	25.56	26.71	-0.37	440.76	-1,159.80	213.69	163.11	50.58	4.225		
4,800.00	4,624.21	4,788.37	4,599.96	25.75	26.90	-0.28	443.96	-1,168.31	215.14	164.18	50.96	4.222		
4,830.00	4,652.83	4,818.34	4,628.51	25.94	27.10	-0.20	447.16	-1,176.81	216.59	165.24	51.35	4.218		
4,860.00	4,681.45	4,848.30	4,657.06	26.13	27.29	-0.11	450.35	-1,185.32	218.05	166.31	51.73	4.215		
4,890.00	4,710.07	4,878.26	4,685.61	26.32	27.48	-0.03	453.55	-1,193.83	219.50	167.38	52.12	4.211		
4,920.00	4,738.68	4,908.22	4,714.17	26.51	27.67	0.06	456.75	-1,202.33	220.96	168.45	52.51	4.208		
4,950.00	4,767.30	4,938.19	4,742.72	26.70	27.86	0.14	459.94	-1,210.84	222.41	169.52	52.89	4.205		
4,980.00	4,795.92	4,968.15	4,771.27	26.89	28.05	0.22	463.14	-1,219.34	223.87	170.59	53.28	4.202		
5,010.00	4,824.54	4,998.11	4,799.82	27.08	28.24	0.30	466.34	-1,227.85	225.32	171.66	53.66	4.199		
5,040.00	4,853.16	5,028.08	4,828.37	27.27	28.44	0.38	469.53	-1,236.35	226.78	172.73	54.05	4.196		
5,070.00	4,881.79	5,058.04	4,856.92	27.45	28.63	0.46	472.73	-1,244.86	228.24	173.82	54.42	4.194		
5,100.00	4,910.49	5,088.75	4,886.23	27.62	28.80	0.44	475.97	-1,253.47	229.71	174.95	54.76	4.195		

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

Company:	Piceance Energy, LLC	Local Co-ordinate Reference:	Well Gunderson 29-09M
Project:	Mesa County, CO	TVD Reference:	WELL @ 7560.00usft (Original Well Elev)
Reference Site:	Gunderson	MD Reference:	WELL @ 7560.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Gunderson 29-09M	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMDBBW
Reference Design:	Design #1	Offset TVD Reference:	Reference Datum

Offset Design Gunderson - Gunderson 29-08M - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,130.00	4,939.28	5,119.61	4,915.76	27.75	28.96	0.42	479.11	-1,261.83	231.14	176.09	55.05	4.199		
5,160.00	4,968.16	5,150.47	4,945.40	27.89	29.10	0.39	482.14	-1,269.89	232.51	177.18	55.33	4.202		
5,190.00	4,997.12	5,181.34	4,975.13	28.02	29.24	0.37	485.05	-1,277.66	233.83	178.23	55.60	4.206		
5,220.00	5,026.16	5,212.21	5,004.96	28.15	29.37	0.35	487.86	-1,285.12	235.10	179.24	55.86	4.209		
5,250.00	5,055.28	5,243.09	5,034.87	28.27	29.50	0.33	490.55	-1,292.29	236.33	180.22	56.10	4.212		
5,280.00	5,084.47	5,273.98	5,064.88	28.39	29.63	0.30	493.13	-1,299.15	237.49	181.15	56.35	4.215		
5,310.00	5,113.73	5,304.87	5,094.96	28.50	29.75	0.28	495.60	-1,305.71	238.61	182.03	56.58	4.217		
5,340.00	5,143.06	5,335.76	5,125.12	28.61	29.86	0.26	497.95	-1,311.97	239.68	182.88	56.80	4.220		
5,370.00	5,172.46	5,366.66	5,155.36	28.71	29.97	0.24	500.19	-1,317.92	240.69	183.68	57.01	4.222		
5,400.00	5,201.92	5,397.57	5,185.67	28.82	30.08	0.23	502.31	-1,323.57	241.65	184.43	57.22	4.223		
5,430.00	5,231.43	5,428.48	5,216.05	28.91	30.18	0.21	504.32	-1,328.92	242.56	185.15	57.41	4.225		
5,460.00	5,261.00	5,459.39	5,246.49	29.00	30.27	0.19	506.21	-1,333.96	243.42	185.83	57.59	4.227		
5,490.00	5,290.62	5,490.31	5,276.99	29.09	30.37	0.18	507.99	-1,338.69	244.23	186.45	57.77	4.227		
5,520.00	5,320.29	5,521.23	5,307.55	29.17	30.45	0.16	509.65	-1,343.11	244.98	187.04	57.94	4.228		
5,550.00	5,350.00	5,552.16	5,338.16	29.24	30.53	0.15	511.20	-1,347.22	245.68	187.59	58.09	4.229		
5,580.00	5,379.76	5,583.09	5,368.82	29.32	30.61	0.13	512.63	-1,351.03	246.33	188.08	58.24	4.229		
5,610.00	5,409.55	5,614.02	5,399.53	29.39	30.68	0.12	513.94	-1,354.52	246.92	188.54	58.38	4.229		
5,640.00	5,439.38	5,644.95	5,430.27	29.45	30.74	0.11	515.14	-1,357.71	247.46	188.96	58.51	4.230		
5,670.00	5,469.24	5,675.89	5,461.06	29.51	30.81	0.10	516.22	-1,360.58	247.95	189.32	58.63	4.229		
5,700.00	5,499.13	5,706.83	5,491.87	29.57	30.87	0.09	517.19	-1,363.15	248.39	189.64	58.75	4.228		
5,730.00	5,529.04	5,737.77	5,522.72	29.61	30.92	0.09	518.03	-1,365.40	248.77	189.93	58.84	4.228		
5,760.00	5,558.98	5,768.71	5,553.59	29.66	30.97	0.08	518.76	-1,367.34	249.10	190.16	58.94	4.227		
5,790.00	5,588.94	5,799.65	5,584.49	29.71	31.02	0.07	519.37	-1,368.96	249.38	190.35	59.03	4.225		
5,820.00	5,618.91	5,830.60	5,615.40	29.74	31.05	0.07	519.87	-1,370.28	249.60	190.50	59.10	4.223		
5,850.00	5,648.89	5,861.54	5,646.33	29.78	31.09	0.06	520.24	-1,371.28	249.77	190.60	59.17	4.221		
5,880.00	5,678.88	5,892.49	5,677.27	29.81	31.12	0.06	520.50	-1,371.97	249.89	190.65	59.23	4.219		
5,910.00	5,708.88	5,923.44	5,708.21	29.84	31.15	0.06	520.64	-1,372.35	249.95	190.66	59.29	4.216		
5,940.00	5,738.88	5,954.10	5,738.88	29.87	31.18	0.06	520.67	-1,372.43	249.97	190.63	59.34	4.212		
5,970.00	5,768.88	5,984.10	5,768.88	29.89	31.20	0.06	520.67	-1,372.43	249.97	190.58	59.39	4.209		
6,000.00	5,798.88	6,014.10	5,798.88	29.92	31.23	0.06	520.67	-1,372.43	249.97	190.52	59.44	4.205		
6,030.00	5,828.88	6,044.10	5,828.88	29.94	31.25	0.06	520.67	-1,372.43	249.97	190.47	59.50	4.201		
6,060.00	5,858.88	6,074.10	5,858.88	29.97	31.28	0.06	520.67	-1,372.43	249.97	190.41	59.55	4.197		
6,090.00	5,888.88	6,104.10	5,888.88	30.00	31.31	0.06	520.67	-1,372.43	249.97	190.36	59.61	4.193		
6,120.00	5,918.88	6,134.10	5,918.88	30.03	31.33	0.06	520.67	-1,372.43	249.97	190.30	59.67	4.189		
6,150.00	5,948.88	6,164.10	5,948.88	30.06	31.36	0.06	520.67	-1,372.43	249.97	190.24	59.72	4.185		
6,180.00	5,978.88	6,194.10	5,978.88	30.08	31.39	0.06	520.67	-1,372.43	249.97	190.19	59.78	4.182		
6,210.00	6,008.88	6,224.10	6,008.88	30.11	31.42	0.06	520.67	-1,372.43	249.97	190.13	59.84	4.178		
6,240.00	6,038.88	6,254.10	6,038.88	30.14	31.44	0.06	520.67	-1,372.43	249.97	190.07	59.89	4.173		
6,270.00	6,068.88	6,284.10	6,068.88	30.17	31.47	0.06	520.67	-1,372.43	249.97	190.01	59.95	4.169		
6,300.00	6,098.88	6,314.10	6,098.88	30.20	31.50	0.06	520.67	-1,372.43	249.97	189.96	60.01	4.165		
6,330.00	6,128.88	6,344.10	6,128.88	30.23	31.53	0.06	520.67	-1,372.43	249.97	189.90	60.07	4.161		
6,360.00	6,158.88	6,374.10	6,158.88	30.26	31.55	0.06	520.67	-1,372.43	249.97	189.84	60.13	4.157		
6,390.00	6,188.88	6,404.10	6,188.88	30.28	31.58	0.06	520.67	-1,372.43	249.97	189.78	60.18	4.153		
6,420.00	6,218.88	6,434.10	6,218.88	30.31	31.61	0.06	520.67	-1,372.43	249.97	189.72	60.24	4.149		
6,450.00	6,248.88	6,464.10	6,248.88	30.34	31.64	0.06	520.67	-1,372.43	249.97	189.66	60.30	4.145		
6,480.00	6,278.88	6,494.10	6,278.88	30.37	31.67	0.06	520.67	-1,372.43	249.97	189.60	60.36	4.141		
6,510.00	6,308.88	6,524.10	6,308.88	30.40	31.70	0.06	520.67	-1,372.43	249.97	189.55	60.42	4.137		
6,540.00	6,338.88	6,554.10	6,338.88	30.43	31.72	0.06	520.67	-1,372.43	249.97	189.49	60.48	4.133		
6,570.00	6,368.88	6,584.10	6,368.88	30.46	31.75	0.06	520.67	-1,372.43	249.97	189.43	60.54	4.129		
6,600.00	6,398.88	6,614.10	6,398.88	30.49	31.78	0.06	520.67	-1,372.43	249.97	189.37	60.60	4.125		
6,630.00	6,428.88	6,644.10	6,428.88	30.52	31.81	0.06	520.67	-1,372.43	249.97	189.30	60.66	4.121		
6,660.00	6,458.88	6,674.10	6,458.88	30.55	31.84	0.06	520.67	-1,372.43	249.97	189.24	60.72	4.117		

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

Company:	Piceance Energy, LLC	Local Co-ordinate Reference:	Well Gunderson 29-09M
Project:	Mesa County, CO	TVD Reference:	WELL @ 7560.00usft (Original Well Elev)
Reference Site:	Gunderson	MD Reference:	WELL @ 7560.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Gunderson 29-09M	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMDBBW
Reference Design:	Design #1	Offset TVD Reference:	Reference Datum

Offset Design Gunderson - Gunderson 29-08M - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
6,690.00	6,488.88	6,704.10	6,488.88	30.58	31.87	0.06	520.67	-1,372.43	249.97	189.18	60.78	4.112		
6,720.00	6,518.88	6,734.10	6,518.88	30.61	31.90	0.06	520.67	-1,372.43	249.97	189.12	60.84	4.108		
6,750.00	6,548.88	6,764.10	6,548.88	30.64	31.93	0.06	520.67	-1,372.43	249.97	189.06	60.91	4.104		
6,780.00	6,578.88	6,794.10	6,578.88	30.67	31.96	0.06	520.67	-1,372.43	249.97	189.00	60.97	4.100		
6,810.00	6,608.88	6,824.10	6,608.88	30.70	31.99	0.06	520.67	-1,372.43	249.97	188.94	61.03	4.096		
6,840.00	6,638.88	6,854.10	6,638.88	30.74	32.02	0.06	520.67	-1,372.43	249.97	188.87	61.09	4.092		
6,870.00	6,668.88	6,884.10	6,668.88	30.77	32.05	0.06	520.67	-1,372.43	249.97	188.81	61.15	4.087		
6,900.00	6,698.88	6,914.10	6,698.88	30.80	32.08	0.06	520.67	-1,372.43	249.97	188.75	61.22	4.083		
6,930.00	6,728.88	6,944.10	6,728.88	30.83	32.11	0.06	520.67	-1,372.43	249.97	188.69	61.28	4.079		
6,960.00	6,758.88	6,974.10	6,758.88	30.86	32.14	0.06	520.67	-1,372.43	249.97	188.62	61.34	4.075		
6,990.00	6,788.88	7,004.10	6,788.88	30.89	32.17	0.06	520.67	-1,372.43	249.97	188.56	61.41	4.071		
7,020.00	6,818.88	7,034.10	6,818.88	30.92	32.20	0.06	520.67	-1,372.43	249.97	188.50	61.47	4.066		
7,050.00	6,848.88	7,064.10	6,848.88	30.95	32.23	0.06	520.67	-1,372.43	249.97	188.43	61.53	4.062		
7,080.00	6,878.88	7,094.10	6,878.88	30.99	32.26	0.06	520.67	-1,372.43	249.97	188.37	61.60	4.058		
7,110.00	6,908.88	7,124.10	6,908.88	31.02	32.29	0.06	520.67	-1,372.43	249.97	188.30	61.66	4.054		
7,140.00	6,938.88	7,154.10	6,938.88	31.05	32.32	0.06	520.67	-1,372.43	249.97	188.24	61.73	4.050		
7,170.00	6,968.88	7,184.10	6,968.88	31.08	32.35	0.06	520.67	-1,372.43	249.97	188.17	61.79	4.045		
7,200.00	6,998.88	7,214.10	6,998.88	31.11	32.38	0.06	520.67	-1,372.43	249.97	188.11	61.86	4.041		
7,230.00	7,028.88	7,244.10	7,028.88	31.15	32.41	0.06	520.67	-1,372.43	249.97	188.04	61.92	4.037		
7,260.00	7,058.88	7,274.10	7,058.88	31.18	32.45	0.06	520.67	-1,372.43	249.97	187.98	61.99	4.033		
7,290.00	7,088.88	7,304.10	7,088.88	31.21	32.48	0.06	520.67	-1,372.43	249.97	187.91	62.05	4.028		
7,320.00	7,118.88	7,334.10	7,118.88	31.24	32.51	0.06	520.67	-1,372.43	249.97	187.85	62.12	4.024		
7,350.00	7,148.88	7,364.10	7,148.88	31.28	32.54	0.06	520.67	-1,372.43	249.97	187.78	62.19	4.020		
7,380.00	7,178.88	7,394.10	7,178.88	31.31	32.57	0.06	520.67	-1,372.43	249.97	187.71	62.25	4.015		
7,410.00	7,208.88	7,424.10	7,208.88	31.34	32.60	0.06	520.67	-1,372.43	249.97	187.65	62.32	4.011		
7,440.00	7,238.88	7,454.10	7,238.88	31.38	32.64	0.06	520.67	-1,372.43	249.97	187.58	62.38	4.007		
7,470.00	7,268.88	7,484.10	7,268.88	31.41	32.67	0.06	520.67	-1,372.43	249.97	187.51	62.45	4.003		
7,500.00	7,298.88	7,514.10	7,298.88	31.44	32.70	0.06	520.67	-1,372.43	249.97	187.45	62.52	3.998		
7,530.00	7,328.88	7,544.10	7,328.88	31.48	32.73	0.06	520.67	-1,372.43	249.97	187.38	62.59	3.994		
7,560.00	7,358.88	7,574.10	7,358.88	31.51	32.77	0.06	520.67	-1,372.43	249.97	187.31	62.65	3.990		
7,590.00	7,388.88	7,604.10	7,388.88	31.54	32.80	0.06	520.67	-1,372.43	249.97	187.24	62.72	3.985		
7,620.00	7,418.88	7,634.10	7,418.88	31.58	32.83	0.06	520.67	-1,372.43	249.97	187.18	62.79	3.981		
7,650.00	7,448.88	7,664.10	7,448.88	31.61	32.86	0.06	520.67	-1,372.43	249.97	187.11	62.86	3.977		
7,680.00	7,478.88	7,694.10	7,478.88	31.65	32.90	0.06	520.67	-1,372.43	249.97	187.04	62.93	3.972		
7,710.00	7,508.88	7,724.10	7,508.88	31.68	32.93	0.06	520.67	-1,372.43	249.97	186.97	63.00	3.968		
7,740.00	7,538.88	7,754.10	7,538.88	31.71	32.96	0.06	520.67	-1,372.43	249.97	186.90	63.06	3.964		
7,770.00	7,568.88	7,784.10	7,568.88	31.75	33.00	0.06	520.67	-1,372.43	249.97	186.83	63.13	3.959		
7,800.00	7,598.88	7,814.10	7,598.88	31.78	33.03	0.06	520.67	-1,372.43	249.97	186.76	63.20	3.955		
7,830.00	7,628.88	7,844.10	7,628.88	31.82	33.06	0.06	520.67	-1,372.43	249.97	186.69	63.27	3.951		
7,860.00	7,658.88	7,874.10	7,658.88	31.85	33.10	0.06	520.67	-1,372.43	249.97	186.62	63.34	3.946		
7,881.12	7,680.00	7,895.23	7,680.00	31.88	33.12	0.06	520.67	-1,372.43	249.97	186.58	63.39	3.943		

Company:	Piceance Energy, LLC	Local Co-ordinate Reference:	Well Gunderson 29-09M
Project:	Mesa County, CO	TVD Reference:	WELL @ 7560.00usft (Original Well Elev)
Reference Site:	Gunderson	MD Reference:	WELL @ 7560.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Gunderson 29-09M	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMDBBW
Reference Design:	Design #1	Offset TVD Reference:	Reference Datum

Offset Design Gunderson - Gunderson 29-10M - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-96.56	-2.29	-19.88	20.01					
30.00	30.00	30.00	30.00	0.01	0.03	-96.56	-2.29	-19.88	20.01	19.98	0.03	618.266		
60.00	60.00	60.00	60.00	0.04	0.05	-96.56	-2.29	-19.88	20.01	19.92	0.09	218.211		
90.00	90.00	90.00	90.00	0.07	0.08	-96.56	-2.29	-19.88	20.01	19.86	0.15	132.485		
120.00	120.00	120.00	120.00	0.13	0.13	-96.56	-2.29	-19.88	20.01	19.75	0.26	76.750		
150.00	150.00	150.00	150.00	0.20	0.20	-96.56	-2.29	-19.88	20.01	19.62	0.40	50.585		
180.00	180.00	180.00	180.00	0.27	0.27	-96.56	-2.29	-19.88	20.01	19.48	0.53	37.725		
210.00	210.00	210.00	210.00	0.33	0.33	-96.56	-2.29	-19.88	20.01	19.35	0.67	30.078		
240.00	240.00	240.00	240.00	0.40	0.40	-96.56	-2.29	-19.88	20.01	19.21	0.80	25.009		
270.00	270.00	270.00	270.00	0.47	0.47	-96.56	-2.29	-19.88	20.01	19.08	0.94	21.402		
300.00	300.00	300.00	300.00	0.53	0.53	-96.56	-2.29	-19.88	20.01	18.94	1.07	18.704		
330.00	330.00	330.00	330.00	0.60	0.60	-96.56	-2.29	-19.88	20.01	18.81	1.20	16.610		
360.00	360.00	360.00	360.00	0.67	0.67	-96.56	-2.29	-19.88	20.01	18.67	1.34	14.938		
390.00	390.00	390.00	390.00	0.74	0.74	-96.56	-2.29	-19.88	20.01	18.54	1.47	13.572		
420.00	420.00	420.00	420.00	0.80	0.80	-96.62	-2.29	-19.88	19.94	18.34	1.61	12.405		
450.00	450.00	450.00	450.00	0.87	0.87	-96.95	-2.29	-19.88	19.60	17.86	1.74	11.258		
480.00	479.99	479.99	479.99	0.93	0.94	-97.59	-2.29	-19.88	18.95	17.08	1.87	10.115		
510.00	509.97	509.91	509.91	1.00	1.01	-98.59	-2.29	-19.90	18.03	16.02	2.00	8.993		
540.00	539.94	539.71	539.71	1.06	1.07	-99.94	-2.28	-20.16	17.06	14.92	2.13	7.997		
570.00	569.90	569.53	569.52	1.13	1.13	-101.63	-2.27	-20.72	16.11	13.85	2.26	7.131		
600.00	599.84	599.35	599.33	1.19	1.20	-103.73	-2.26	-21.60	15.20	12.81	2.38	6.374		
630.00	629.75	629.18	629.14	1.27	1.26	-106.32	-2.24	-22.79	14.33	11.82	2.51	5.702		
660.00	659.64	659.02	658.94	1.34	1.32	-109.44	-2.21	-24.29	13.51	10.87	2.64	5.118		
690.00	689.50	688.87	688.74	1.41	1.39	-113.19	-2.18	-26.10	12.77	10.00	2.77	4.613		
720.00	719.33	718.74	718.52	1.49	1.45	-117.60	-2.14	-28.23	12.11	9.21	2.90	4.173		
750.00	749.13	748.61	748.29	1.57	1.52	-122.70	-2.10	-30.66	11.57	8.52	3.04	3.801		
780.00	778.89	778.49	778.05	1.65	1.59	-128.47	-2.06	-33.40	11.16	7.97	3.19	3.498		
810.00	808.60	808.38	807.78	1.74	1.67	-134.80	-2.00	-36.46	10.92	7.57	3.35	3.261		
834.82	833.15	833.11	832.36	1.81	1.73	-140.32	-1.96	-39.22	10.85	7.36	3.49	3.108 CC		
840.00	838.27	838.28	837.49	1.83	1.74	-141.49	-1.95	-39.83	10.85	7.33	3.52	3.082		
870.00	867.89	868.18	867.17	1.92	1.82	-148.29	-1.88	-43.50	10.99	7.28	3.70	2.967 ES		
900.00	897.47	898.10	896.82	2.02	1.90	-154.91	-1.82	-47.49	11.32	7.43	3.89	2.912		
930.00	926.98	928.02	926.43	2.12	1.99	-161.13	-1.74	-51.79	11.85	7.75	4.10	2.892 SF		
960.00	956.44	957.96	956.01	2.23	2.08	-166.77	-1.66	-56.40	12.56	8.25	4.31	2.916		
990.00	985.84	987.90	985.55	2.34	2.17	-171.76	-1.58	-61.32	13.44	8.92	4.51	2.977		
1,020.00	1,015.17	1,017.85	1,015.04	2.46	2.27	-176.10	-1.49	-66.55	14.46	9.72	4.73	3.054		
1,050.00	1,044.44	1,047.81	1,044.48	2.59	2.38	-179.81	-1.40	-72.09	15.60	10.64	4.96	3.146		
1,080.00	1,073.63	1,077.78	1,073.87	2.71	2.48	-177.04	-1.30	-77.94	16.86	11.68	5.18	3.254		
1,110.00	1,102.75	1,107.75	1,103.20	2.85	2.60	-174.38	-1.19	-84.10	18.22	12.81	5.41	3.368		
1,140.00	1,131.80	1,137.74	1,132.48	2.99	2.72	-172.14	-1.08	-90.56	19.67	14.01	5.66	3.475		
1,170.00	1,160.76	1,167.73	1,161.70	3.14	2.84	-170.26	-0.97	-97.33	21.19	15.29	5.91	3.589		
1,200.00	1,189.64	1,197.72	1,190.85	3.28	2.96	-168.69	-0.85	-104.41	22.79	16.65	6.15	3.707		
1,230.00	1,218.44	1,227.73	1,219.93	3.44	3.11	-167.37	-0.72	-111.80	24.46	18.04	6.42	3.808		
1,260.00	1,247.14	1,257.74	1,248.94	3.61	3.25	-166.27	-0.59	-119.49	26.19	19.49	6.70	3.911		
1,290.00	1,275.77	1,287.76	1,277.87	3.77	3.39	-165.45	-0.45	-127.49	27.95	20.98	6.98	4.007		
1,320.00	1,304.39	1,317.80	1,306.74	3.95	3.54	-165.25	-0.31	-135.80	29.65	22.37	7.28	4.073		
1,350.00	1,333.01	1,347.85	1,335.52	4.12	3.70	-165.61	-0.17	-144.41	31.25	23.65	7.60	4.112		
1,380.00	1,361.63	1,377.85	1,364.19	4.30	3.86	-166.35	-0.02	-153.27	32.79	24.85	7.94	4.131		
1,410.00	1,390.25	1,407.80	1,392.80	4.47	4.03	-167.06	0.14	-162.14	34.32	26.04	8.28	4.145		
1,440.00	1,418.86	1,437.76	1,421.41	4.65	4.20	-167.71	0.29	-171.02	35.85	27.22	8.63	4.156		
1,470.00	1,447.48	1,467.72	1,450.02	4.83	4.37	-168.30	0.44	-179.90	37.39	28.42	8.98	4.166		
1,500.00	1,476.10	1,497.68	1,478.64	5.01	4.54	-168.85	0.59	-188.77	38.94	29.61	9.32	4.176		

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

Company:	Piceance Energy, LLC	Local Co-ordinate Reference:	Well Gunderson 29-09M
Project:	Mesa County, CO	TVD Reference:	WELL @ 7560.00usft (Original Well Elev)
Reference Site:	Gunderson	MD Reference:	WELL @ 7560.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Gunderson 29-09M	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMDBBW
Reference Design:	Design #1	Offset TVD Reference:	Reference Datum

Offset Design Gunderson - Gunderson 29-10M - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
1,530.00	1,504.72	1,527.64	1,507.25	5.19	4.72	169.35	0.74	-197.65	40.49	30.80	9.68	4.182		
1,560.00	1,533.34	1,557.59	1,535.86	5.37	4.89	169.82	0.89	-206.52	42.04	32.00	10.04	4.189		
1,590.00	1,561.96	1,587.55	1,564.47	5.55	5.07	170.25	1.04	-215.40	43.59	33.20	10.39	4.195		
1,620.00	1,590.58	1,617.51	1,593.08	5.73	5.24	170.66	1.19	-224.28	45.15	34.40	10.75	4.199		
1,650.00	1,619.20	1,647.47	1,621.70	5.92	5.42	171.04	1.34	-233.15	46.71	35.59	11.11	4.203		
1,680.00	1,647.82	1,677.42	1,650.31	6.10	5.60	171.39	1.49	-242.03	48.27	36.79	11.47	4.207		
1,710.00	1,676.44	1,707.38	1,678.92	6.28	5.78	171.72	1.65	-250.91	49.83	38.00	11.83	4.211		
1,740.00	1,705.06	1,737.34	1,707.53	6.47	5.95	172.03	1.80	-259.78	51.39	39.20	12.20	4.213		
1,770.00	1,733.67	1,767.30	1,736.15	6.65	6.13	172.32	1.95	-268.66	52.96	40.40	12.56	4.216		
1,800.00	1,762.29	1,797.26	1,764.76	6.83	6.31	172.59	2.10	-277.54	54.53	41.60	12.93	4.218		
1,830.00	1,790.91	1,827.21	1,793.37	7.02	6.50	172.85	2.25	-286.41	56.10	42.80	13.29	4.220		
1,860.00	1,819.53	1,857.17	1,821.98	7.21	6.68	173.10	2.40	-295.29	57.67	44.01	13.66	4.222		
1,890.00	1,848.15	1,887.13	1,850.59	7.39	6.86	173.33	2.55	-304.16	59.24	45.21	14.03	4.223		
1,920.00	1,876.77	1,917.09	1,879.21	7.58	7.04	173.55	2.70	-313.04	60.81	46.42	14.39	4.225		
1,950.00	1,905.39	1,947.04	1,907.82	7.76	7.22	173.76	2.85	-321.92	62.38	47.62	14.76	4.226		
1,980.00	1,934.01	1,977.00	1,936.43	7.95	7.41	173.96	3.01	-330.79	63.96	48.82	15.13	4.227		
2,010.00	1,962.63	2,006.96	1,965.04	8.14	7.59	174.15	3.16	-339.67	65.53	50.03	15.50	4.228		
2,040.00	1,991.25	2,036.92	1,993.65	8.32	7.77	174.33	3.31	-348.55	67.11	51.24	15.87	4.228		
2,070.00	2,019.87	2,066.88	2,022.27	8.51	7.96	174.50	3.46	-357.42	68.68	52.44	16.24	4.229		
2,100.00	2,048.49	2,096.83	2,050.88	8.70	8.14	174.67	3.61	-366.30	70.26	53.65	16.61	4.230		
2,130.00	2,077.10	2,126.79	2,079.49	8.88	8.32	174.82	3.76	-375.17	71.84	54.86	16.98	4.230		
2,160.00	2,105.72	2,156.75	2,108.10	9.07	8.51	174.97	3.91	-384.05	73.41	56.06	17.35	4.231		
2,190.00	2,134.34	2,186.71	2,136.72	9.26	8.69	175.12	4.06	-392.93	74.99	57.27	17.72	4.231		
2,220.00	2,162.96	2,216.67	2,165.33	9.45	8.88	175.26	4.21	-401.80	76.57	58.48	18.10	4.231		
2,250.00	2,191.58	2,246.62	2,193.94	9.63	9.06	175.39	4.37	-410.68	78.15	59.68	18.47	4.232		
2,280.00	2,220.20	2,276.58	2,222.55	9.82	9.25	175.52	4.52	-419.56	79.73	60.89	18.84	4.232		
2,310.00	2,248.82	2,306.54	2,251.16	10.01	9.43	175.64	4.67	-428.43	81.31	62.10	19.21	4.232		
2,340.00	2,277.44	2,336.50	2,279.78	10.20	9.62	175.76	4.82	-437.31	82.89	63.31	19.58	4.232		
2,370.00	2,306.06	2,366.45	2,308.39	10.39	9.80	175.87	4.97	-446.18	84.47	64.52	19.96	4.233		
2,400.00	2,334.68	2,396.41	2,337.00	10.57	9.99	175.98	5.12	-455.06	86.05	65.72	20.33	4.233		
2,430.00	2,363.30	2,426.37	2,365.61	10.76	10.17	176.08	5.27	-463.94	87.64	66.93	20.70	4.233		
2,460.00	2,391.92	2,456.33	2,394.23	10.95	10.36	176.19	5.42	-472.81	89.22	68.14	21.08	4.233		
2,490.00	2,420.53	2,486.29	2,422.84	11.14	10.54	176.28	5.57	-481.69	90.80	69.35	21.45	4.233		
2,520.00	2,449.15	2,516.24	2,451.45	11.33	10.73	176.38	5.72	-490.57	92.38	70.56	21.82	4.233		
2,550.00	2,477.77	2,546.20	2,480.06	11.52	10.92	176.47	5.88	-499.44	93.97	71.77	22.20	4.233		
2,580.00	2,506.39	2,576.16	2,508.67	11.71	11.10	176.56	6.03	-508.32	95.55	72.98	22.57	4.233		
2,610.00	2,535.01	2,606.12	2,537.29	11.89	11.29	176.64	6.18	-517.20	97.13	74.19	22.95	4.233		
2,640.00	2,563.63	2,636.07	2,565.90	12.08	11.47	176.73	6.33	-526.07	98.72	75.40	23.32	4.233		
2,670.00	2,592.25	2,666.03	2,594.51	12.27	11.66	176.81	6.48	-534.95	100.30	76.61	23.69	4.233		
2,700.00	2,620.87	2,695.99	2,623.12	12.46	11.85	176.88	6.63	-543.82	101.88	77.82	24.07	4.233		
2,730.00	2,649.49	2,725.95	2,651.74	12.65	12.03	176.96	6.78	-552.70	103.47	79.02	24.44	4.233		
2,760.00	2,678.11	2,755.91	2,680.35	12.84	12.22	177.03	6.93	-561.58	105.05	80.23	24.82	4.233		
2,790.00	2,706.73	2,785.86	2,708.96	13.03	12.41	177.10	7.08	-570.45	106.64	81.44	25.19	4.233		
2,820.00	2,735.34	2,815.82	2,737.57	13.22	12.59	177.17	7.24	-579.33	108.22	82.65	25.57	4.233		
2,850.00	2,763.96	2,845.78	2,766.18	13.41	12.78	177.24	7.39	-588.21	109.81	83.86	25.94	4.233		
2,880.00	2,792.58	2,875.74	2,794.80	13.60	12.97	177.30	7.54	-597.08	111.39	85.07	26.32	4.233		
2,910.00	2,821.20	2,905.69	2,823.41	13.78	13.15	177.36	7.69	-605.96	112.98	86.28	26.69	4.233		
2,940.00	2,849.82	2,935.65	2,852.02	13.97	13.34	177.43	7.84	-614.83	114.56	87.50	27.07	4.232		
2,970.00	2,878.44	2,965.61	2,880.63	14.16	13.53	177.49	7.99	-623.71	116.15	88.71	27.44	4.232		
3,000.00	2,907.06	2,995.57	2,909.25	14.35	13.72	177.54	8.14	-632.59	117.73	89.92	27.82	4.232		
3,030.00	2,935.68	3,025.53	2,937.86	14.54	13.90	177.60	8.29	-641.46	119.32	91.13	28.19	4.232		
3,060.00	2,964.30	3,055.48	2,966.47	14.73	14.09	177.65	8.44	-650.34	120.91	92.34	28.57	4.232		

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

Company:	Piceance Energy, LLC	Local Co-ordinate Reference:	Well Gunderson 29-09M
Project:	Mesa County, CO	TVD Reference:	WELL @ 7560.00usft (Original Well Elev)
Reference Site:	Gunderson	MD Reference:	WELL @ 7560.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Gunderson 29-09M	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMDBBW
Reference Design:	Design #1	Offset TVD Reference:	Reference Datum

Offset Design Gunderson - Gunderson 29-10M - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
3,090.00	2,992.92	3,085.44	2,995.08	14.92	14.28	177.71	8.59	-659.22	122.49	93.55	28.94	4.232		
3,120.00	3,021.54	3,115.40	3,023.69	15.11	14.46	177.76	8.75	-668.09	124.08	94.76	29.32	4.232		
3,150.00	3,050.16	3,145.36	3,052.31	15.30	14.65	177.81	8.90	-676.97	125.66	95.97	29.70	4.232		
3,180.00	3,078.77	3,175.32	3,080.92	15.49	14.84	177.86	9.05	-685.85	127.25	97.18	30.07	4.232		
3,210.00	3,107.39	3,205.27	3,109.53	15.68	15.03	177.91	9.20	-694.72	128.84	98.39	30.45	4.232		
3,240.00	3,136.01	3,235.23	3,138.14	15.87	15.21	177.96	9.35	-703.60	130.42	99.60	30.82	4.231		
3,270.00	3,164.63	3,265.19	3,166.76	16.06	15.40	178.00	9.50	-712.47	132.01	100.81	31.20	4.231		
3,300.00	3,193.25	3,295.15	3,195.37	16.25	15.59	178.05	9.65	-721.35	133.60	102.02	31.57	4.231		
3,330.00	3,221.87	3,325.10	3,223.98	16.44	15.78	178.09	9.80	-730.23	135.18	103.23	31.95	4.231		
3,360.00	3,250.49	3,355.06	3,252.59	16.63	15.96	178.13	9.95	-739.10	136.77	104.44	32.33	4.231		
3,390.00	3,279.11	3,385.02	3,281.20	16.82	16.15	178.18	10.11	-747.98	138.36	105.66	32.70	4.231		
3,420.00	3,307.73	3,414.98	3,309.82	17.01	16.34	178.22	10.26	-756.86	139.94	106.87	33.08	4.231		
3,450.00	3,336.35	3,444.94	3,338.43	17.20	16.53	178.26	10.41	-765.73	141.53	108.08	33.45	4.231		
3,480.00	3,364.97	3,474.89	3,367.04	17.39	16.71	178.30	10.56	-774.61	143.12	109.29	33.83	4.231		
3,510.00	3,393.59	3,504.85	3,395.65	17.58	16.90	178.33	10.71	-783.48	144.71	110.50	34.21	4.230		
3,540.00	3,422.20	3,534.81	3,424.27	17.77	17.09	178.37	10.86	-792.36	146.29	111.71	34.58	4.230		
3,570.00	3,450.82	3,564.77	3,452.88	17.96	17.28	178.41	11.01	-801.24	147.88	112.92	34.96	4.230		
3,600.00	3,479.44	3,594.72	3,481.49	18.15	17.46	178.44	11.16	-810.11	149.47	114.13	35.33	4.230		
3,630.00	3,508.06	3,624.68	3,510.10	18.33	17.65	178.48	11.31	-818.99	151.06	115.34	35.71	4.230		
3,660.00	3,536.68	3,654.64	3,538.71	18.52	17.84	178.51	11.46	-827.87	152.64	116.56	36.09	4.230		
3,690.00	3,565.30	3,684.60	3,567.33	18.71	18.03	178.55	11.62	-836.74	154.23	117.77	36.46	4.230		
3,720.00	3,593.92	3,714.56	3,595.94	18.90	18.21	178.58	11.77	-845.62	155.82	118.98	36.84	4.230		
3,750.00	3,622.54	3,744.51	3,624.55	19.09	18.40	178.61	11.92	-854.50	157.41	120.19	37.22	4.229		
3,780.00	3,651.16	3,774.47	3,653.16	19.28	18.59	178.64	12.07	-863.37	158.99	121.40	37.59	4.229		
3,810.00	3,679.78	3,804.43	3,681.78	19.47	18.78	178.68	12.22	-872.25	160.58	122.61	37.97	4.229		
3,840.00	3,708.40	3,834.39	3,710.39	19.66	18.97	178.71	12.37	-881.12	162.17	123.82	38.35	4.229		
3,870.00	3,737.01	3,864.34	3,739.00	19.85	19.15	178.74	12.52	-890.00	163.76	125.04	38.72	4.229		
3,900.00	3,765.63	3,894.30	3,767.61	20.04	19.34	178.77	12.67	-898.88	165.35	126.25	39.10	4.229		
3,930.00	3,794.25	3,924.26	3,796.22	20.23	19.53	178.79	12.82	-907.75	166.93	127.46	39.48	4.229		
3,960.00	3,822.87	3,954.22	3,824.84	20.42	19.72	178.82	12.98	-916.63	168.52	128.67	39.85	4.229		
3,990.00	3,851.49	3,984.18	3,853.45	20.61	19.91	178.85	13.13	-925.51	170.11	129.88	40.23	4.229		
4,020.00	3,880.11	4,014.13	3,882.06	20.80	20.09	178.88	13.28	-934.38	171.70	131.09	40.61	4.229		
4,050.00	3,908.73	4,044.09	3,910.67	20.99	20.28	178.90	13.43	-943.26	173.29	132.31	40.98	4.228		
4,080.00	3,937.35	4,074.05	3,939.29	21.18	20.47	178.93	13.58	-952.13	174.88	133.52	41.36	4.228		
4,110.00	3,965.97	4,104.01	3,967.90	21.37	20.66	178.96	13.73	-961.01	176.46	134.73	41.74	4.228		
4,140.00	3,994.59	4,133.97	3,996.51	21.56	20.85	178.98	13.88	-969.89	178.05	135.94	42.11	4.228		
4,170.00	4,023.21	4,163.92	4,025.12	21.75	21.03	179.01	14.03	-978.76	179.64	137.15	42.49	4.228		
4,200.00	4,051.83	4,193.88	4,053.73	21.94	21.22	179.03	14.18	-987.64	181.23	138.36	42.87	4.228		
4,230.00	4,080.44	4,223.84	4,082.35	22.13	21.41	179.05	14.33	-996.52	182.82	139.58	43.24	4.228		
4,260.00	4,109.06	4,253.80	4,110.96	22.33	21.60	179.08	14.49	-1,005.39	184.41	140.79	43.62	4.228		
4,290.00	4,137.68	4,283.75	4,139.57	22.52	21.79	179.10	14.64	-1,014.27	185.99	142.00	44.00	4.228		
4,320.00	4,166.30	4,313.71	4,168.18	22.71	21.97	179.12	14.79	-1,023.14	187.58	143.21	44.37	4.227		
4,350.00	4,194.92	4,343.67	4,196.80	22.90	22.16	179.15	14.94	-1,032.02	189.17	144.42	44.75	4.227		
4,380.00	4,223.54	4,373.63	4,225.41	23.09	22.35	179.17	15.09	-1,040.90	190.76	145.63	45.13	4.227		
4,410.00	4,252.16	4,403.59	4,254.02	23.28	22.54	179.19	15.24	-1,049.77	192.35	146.85	45.50	4.227		
4,440.00	4,280.78	4,433.54	4,282.63	23.47	22.73	179.21	15.39	-1,058.65	193.94	148.06	45.88	4.227		
4,470.00	4,309.40	4,463.50	4,311.24	23.66	22.91	179.23	15.54	-1,067.53	195.53	149.27	46.26	4.227		
4,500.00	4,338.02	4,493.46	4,339.86	23.85	23.10	179.25	15.69	-1,076.40	197.12	150.48	46.63	4.227		
4,530.00	4,366.64	4,523.42	4,368.47	24.04	23.29	179.27	15.85	-1,085.28	198.70	151.69	47.01	4.227		
4,560.00	4,395.26	4,553.37	4,397.08	24.23	23.48	179.29	16.00	-1,094.16	200.29	152.91	47.39	4.227		
4,590.00	4,423.87	4,583.33	4,425.69	24.42	23.67	179.31	16.15	-1,103.03	201.88	154.12	47.76	4.227		
4,620.00	4,452.49	4,613.29	4,454.31	24.61	23.86	179.33	16.30	-1,111.91	203.47	155.33	48.14	4.227		

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

Company:	Piceance Energy, LLC	Local Co-ordinate Reference:	Well Gunderson 29-09M
Project:	Mesa County, CO	TVD Reference:	WELL @ 7560.00usft (Original Well Elev)
Reference Site:	Gunderson	MD Reference:	WELL @ 7560.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Gunderson 29-09M	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMDBBW
Reference Design:	Design #1	Offset TVD Reference:	Reference Datum

Offset Design Gunderson - Gunderson 29-10M - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
4,650.00	4,481.11	4,643.25	4,482.92	24.80	24.04	179.35	16.45	-1,120.78	205.06	156.54	48.52	4.226		
4,680.00	4,509.73	4,673.21	4,511.53	24.99	24.23	179.37	16.60	-1,129.66	206.65	157.75	48.89	4.226		
4,710.00	4,538.35	4,703.16	4,540.14	25.18	24.42	179.39	16.75	-1,138.54	208.24	158.97	49.27	4.226		
4,740.00	4,566.97	4,733.12	4,568.75	25.37	24.61	179.40	16.90	-1,147.41	209.83	160.18	49.65	4.226		
4,770.00	4,595.59	4,763.08	4,597.37	25.56	24.80	179.42	17.05	-1,156.29	211.42	161.39	50.03	4.226		
4,800.00	4,624.21	4,793.04	4,625.98	25.75	24.99	179.44	17.20	-1,165.17	213.00	162.60	50.40	4.226		
4,830.00	4,652.83	4,822.99	4,654.59	25.94	25.17	179.46	17.36	-1,174.04	214.59	163.81	50.78	4.226		
4,860.00	4,681.45	4,852.95	4,683.20	26.13	25.36	179.47	17.51	-1,182.92	216.18	165.03	51.16	4.226		
4,890.00	4,710.07	4,882.91	4,711.82	26.32	25.55	179.49	17.66	-1,191.79	217.77	166.24	51.53	4.226		
4,920.00	4,738.68	4,912.87	4,740.43	26.51	25.74	179.51	17.81	-1,200.67	219.36	167.45	51.91	4.226		
4,950.00	4,767.30	4,942.83	4,769.04	26.70	25.93	179.52	17.96	-1,209.55	220.95	168.66	52.29	4.226		
4,980.00	4,795.92	4,972.78	4,797.65	26.89	26.11	179.54	18.11	-1,218.42	222.54	169.87	52.67	4.226		
5,010.00	4,824.54	5,002.74	4,826.26	27.08	26.30	179.56	18.26	-1,227.30	224.13	171.09	53.04	4.225		
5,040.00	4,853.16	5,032.70	4,854.88	27.27	26.49	179.57	18.41	-1,236.18	225.72	172.30	53.42	4.225		
5,070.00	4,881.79	5,062.65	4,883.48	27.45	26.68	179.59	18.56	-1,245.05	227.30	173.52	53.79	4.226		
5,100.00	4,910.49	5,092.55	4,912.10	27.62	26.84	179.62	18.71	-1,253.73	228.84	174.73	54.12	4.229		
5,130.00	4,939.28	5,122.46	4,940.80	27.75	26.98	179.66	18.85	-1,262.12	230.33	175.94	54.39	4.235		
5,160.00	4,968.16	5,152.37	4,969.59	27.89	27.11	179.69	18.99	-1,270.21	231.76	177.10	54.66	4.240		
5,190.00	4,997.12	5,182.28	4,998.47	28.02	27.25	179.71	19.13	-1,278.00	233.14	178.22	54.93	4.245		
5,220.00	5,026.16	5,212.19	5,027.44	28.15	27.37	179.74	19.25	-1,285.48	234.47	179.29	55.18	4.249		
5,250.00	5,055.28	5,242.11	5,056.48	28.27	27.49	179.77	19.37	-1,292.67	235.74	180.33	55.42	4.254		
5,280.00	5,084.47	5,272.03	5,085.60	28.39	27.61	179.79	19.49	-1,299.55	236.96	181.31	55.65	4.258		
5,310.00	5,113.73	5,301.96	5,114.79	28.50	27.72	179.82	19.60	-1,306.13	238.13	182.24	55.89	4.261		
5,340.00	5,143.06	5,331.89	5,144.05	28.61	27.83	179.84	19.71	-1,312.40	239.24	183.15	56.09	4.265		
5,370.00	5,172.46	5,361.82	5,173.38	28.71	27.93	179.86	19.81	-1,318.37	240.30	184.00	56.30	4.268		
5,400.00	5,201.92	5,391.75	5,202.78	28.82	28.03	179.88	19.91	-1,324.03	241.30	184.79	56.51	4.270		
5,430.00	5,231.43	5,421.69	5,232.23	28.91	28.13	179.90	20.00	-1,329.39	242.25	185.56	56.69	4.273		
5,460.00	5,261.00	5,451.63	5,261.74	29.00	28.21	179.92	20.09	-1,334.43	243.14	186.28	56.87	4.276		
5,490.00	5,290.62	5,481.57	5,291.30	29.09	28.30	179.94	20.17	-1,339.17	243.98	186.94	57.04	4.277		
5,520.00	5,320.29	5,511.51	5,320.92	29.17	28.38	179.95	20.24	-1,343.60	244.77	187.56	57.21	4.279		
5,550.00	5,350.00	5,541.46	5,350.58	29.24	28.46	179.97	20.31	-1,347.72	245.50	188.14	57.35	4.280		
5,580.00	5,379.76	5,571.40	5,380.28	29.32	28.53	179.98	20.38	-1,351.53	246.17	188.67	57.50	4.281		
5,610.00	5,409.55	5,601.35	5,410.02	29.39	28.60	180.00	20.44	-1,355.03	246.79	189.15	57.65	4.281		
5,640.00	5,439.38	5,631.30	5,439.80	29.45	28.66	-179.99	20.49	-1,358.22	247.36	189.59	57.76	4.282		
5,670.00	5,469.24	5,661.26	5,469.62	29.51	28.72	-179.98	20.54	-1,361.10	247.87	189.98	57.88	4.282		
5,700.00	5,499.13	5,691.21	5,499.46	29.57	28.78	-179.97	20.58	-1,363.67	248.32	190.32	58.00	4.281		
5,730.00	5,529.04	5,721.16	5,529.33	29.61	28.83	-179.96	20.62	-1,365.92	248.72	190.62	58.10	4.281		
5,760.00	5,558.98	5,751.12	5,559.22	29.66	28.88	-179.96	20.65	-1,367.86	249.06	190.87	58.19	4.280		
5,790.00	5,588.94	5,781.07	5,589.13	29.71	28.92	-179.95	20.68	-1,369.49	249.35	191.07	58.28	4.278		
5,820.00	5,618.91	5,811.03	5,619.06	29.74	28.96	-179.95	20.70	-1,370.81	249.59	191.23	58.36	4.277		
5,850.00	5,648.89	5,840.99	5,649.00	29.78	29.00	-179.94	20.72	-1,371.81	249.76	191.34	58.42	4.275		
5,880.00	5,678.88	5,870.95	5,678.95	29.81	29.03	-179.94	20.73	-1,372.50	249.89	191.40	58.49	4.272		
5,910.00	5,708.88	5,900.91	5,708.91	29.84	29.06	-179.94	20.74	-1,372.88	249.95	191.40	58.55	4.269		
5,940.00	5,738.88	5,930.88	5,738.88	29.87	29.08	-179.94	20.74	-1,372.96	249.97	191.37	58.60	4.266		
5,970.00	5,768.88	5,960.88	5,768.88	29.89	29.11	-179.94	20.74	-1,372.96	249.97	191.32	58.65	4.262		
6,000.00	5,798.88	5,990.88	5,798.88	29.92	29.14	-179.94	20.74	-1,372.96	249.97	191.27	58.70	4.258		
6,030.00	5,828.88	6,020.88	5,828.88	29.94	29.16	-179.94	20.74	-1,372.96	249.97	191.21	58.76	4.254		
6,060.00	5,858.88	6,050.88	5,858.88	29.97	29.19	-179.94	20.74	-1,372.96	249.97	191.15	58.81	4.250		
6,090.00	5,888.88	6,080.88	5,888.88	30.00	29.22	-179.94	20.74	-1,372.96	249.97	191.10	58.87	4.246		
6,120.00	5,918.88	6,110.88	5,918.88	30.03	29.25	-179.94	20.74	-1,372.96	249.97	191.04	58.92	4.242		
6,150.00	5,948.88	6,140.88	5,948.88	30.06	29.28	-179.94	20.74	-1,372.96	249.97	190.99	58.98	4.238		
6,180.00	5,978.88	6,170.88	5,978.88	30.08	29.31	-179.94	20.74	-1,372.96	249.97	190.93	59.04	4.234		

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

Company:	Piceance Energy, LLC	Local Co-ordinate Reference:	Well Gunderson 29-09M
Project:	Mesa County, CO	TVD Reference:	WELL @ 7560.00usft (Original Well Elev)
Reference Site:	Gunderson	MD Reference:	WELL @ 7560.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Gunderson 29-09M	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMDBBW
Reference Design:	Design #1	Offset TVD Reference:	Reference Datum

Offset Design Gunderson - Gunderson 29-10M - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
6,210.00	6,008.88	6,200.88	6,008.88	30.11	29.33	-179.94	20.74	-1,372.96	249.97	190.87	59.09	4.230		
6,240.00	6,038.88	6,230.88	6,038.88	30.14	29.36	-179.94	20.74	-1,372.96	249.97	190.81	59.15	4.226		
6,270.00	6,068.88	6,260.88	6,068.88	30.17	29.39	-179.94	20.74	-1,372.96	249.97	190.76	59.21	4.222		
6,300.00	6,098.88	6,290.88	6,098.88	30.20	29.42	-179.94	20.74	-1,372.96	249.97	190.70	59.27	4.218		
6,330.00	6,128.88	6,320.88	6,128.88	30.23	29.45	-179.94	20.74	-1,372.96	249.97	190.64	59.33	4.213		
6,360.00	6,158.88	6,350.88	6,158.88	30.26	29.48	-179.94	20.74	-1,372.96	249.97	190.58	59.39	4.209		
6,390.00	6,188.88	6,380.88	6,188.88	30.28	29.51	-179.94	20.74	-1,372.96	249.97	190.52	59.44	4.205		
6,420.00	6,218.88	6,410.88	6,218.88	30.31	29.54	-179.94	20.74	-1,372.96	249.97	190.46	59.50	4.201		
6,450.00	6,248.88	6,440.88	6,248.88	30.34	29.57	-179.94	20.74	-1,372.96	249.97	190.40	59.56	4.197		
6,480.00	6,278.88	6,470.88	6,278.88	30.37	29.60	-179.94	20.74	-1,372.96	249.97	190.34	59.62	4.193		
6,510.00	6,308.88	6,500.88	6,308.88	30.40	29.63	-179.94	20.74	-1,372.96	249.97	190.28	59.68	4.188		
6,540.00	6,338.88	6,530.88	6,338.88	30.43	29.66	-179.94	20.74	-1,372.96	249.97	190.22	59.74	4.184		
6,570.00	6,368.88	6,560.88	6,368.88	30.46	29.69	-179.94	20.74	-1,372.96	249.97	190.16	59.80	4.180		
6,600.00	6,398.88	6,590.88	6,398.88	30.49	29.72	-179.94	20.74	-1,372.96	249.97	190.10	59.86	4.176		
6,630.00	6,428.88	6,620.88	6,428.88	30.52	29.75	-179.94	20.74	-1,372.96	249.97	190.04	59.92	4.171		
6,660.00	6,458.88	6,650.88	6,458.88	30.55	29.78	-179.94	20.74	-1,372.96	249.97	189.98	59.98	4.167		
6,690.00	6,488.88	6,680.88	6,488.88	30.58	29.81	-179.94	20.74	-1,372.96	249.97	189.92	60.05	4.163		
6,720.00	6,518.88	6,710.88	6,518.88	30.61	29.84	-179.94	20.74	-1,372.96	249.97	189.86	60.11	4.159		
6,750.00	6,548.88	6,740.88	6,548.88	30.64	29.87	-179.94	20.74	-1,372.96	249.97	189.80	60.17	4.154		
6,780.00	6,578.88	6,770.88	6,578.88	30.67	29.90	-179.94	20.74	-1,372.96	249.97	189.74	60.23	4.150		
6,810.00	6,608.88	6,800.88	6,608.88	30.70	29.93	-179.94	20.74	-1,372.96	249.97	189.67	60.29	4.146		
6,840.00	6,638.88	6,830.88	6,638.88	30.74	29.96	-179.94	20.74	-1,372.96	249.97	189.61	60.36	4.142		
6,870.00	6,668.88	6,860.88	6,668.88	30.77	30.00	-179.94	20.74	-1,372.96	249.97	189.55	60.42	4.137		
6,900.00	6,698.88	6,890.88	6,698.88	30.80	30.03	-179.94	20.74	-1,372.96	249.97	189.49	60.48	4.133		
6,930.00	6,728.88	6,920.88	6,728.88	30.83	30.06	-179.94	20.74	-1,372.96	249.97	189.42	60.54	4.129		
6,960.00	6,758.88	6,950.88	6,758.88	30.86	30.09	-179.94	20.74	-1,372.96	249.97	189.36	60.61	4.124		
6,990.00	6,788.88	6,980.88	6,788.88	30.89	30.12	-179.94	20.74	-1,372.96	249.97	189.30	60.67	4.120		
7,020.00	6,818.88	7,010.88	6,818.88	30.92	30.15	-179.94	20.74	-1,372.96	249.97	189.23	60.73	4.116		
7,050.00	6,848.88	7,040.88	6,848.88	30.95	30.19	-179.94	20.74	-1,372.96	249.97	189.17	60.80	4.111		
7,080.00	6,878.88	7,070.88	6,878.88	30.99	30.22	-179.94	20.74	-1,372.96	249.97	189.10	60.86	4.107		
7,110.00	6,908.88	7,100.88	6,908.88	31.02	30.25	-179.94	20.74	-1,372.96	249.97	189.04	60.93	4.103		
7,140.00	6,938.88	7,130.88	6,938.88	31.05	30.28	-179.94	20.74	-1,372.96	249.97	188.97	60.99	4.098		
7,170.00	6,968.88	7,160.88	6,968.88	31.08	30.32	-179.94	20.74	-1,372.96	249.97	188.91	61.06	4.094		
7,200.00	6,998.88	7,190.88	6,998.88	31.11	30.35	-179.94	20.74	-1,372.96	249.97	188.84	61.12	4.090		
7,230.00	7,028.88	7,220.88	7,028.88	31.15	30.38	-179.94	20.74	-1,372.96	249.97	188.78	61.19	4.085		
7,260.00	7,058.88	7,250.88	7,058.88	31.18	30.41	-179.94	20.74	-1,372.96	249.97	188.71	61.25	4.081		
7,290.00	7,088.88	7,280.88	7,088.88	31.21	30.45	-179.94	20.74	-1,372.96	249.97	188.65	61.32	4.076		
7,320.00	7,118.88	7,310.88	7,118.88	31.24	30.48	-179.94	20.74	-1,372.96	249.97	188.58	61.39	4.072		
7,350.00	7,148.88	7,340.88	7,148.88	31.28	30.51	-179.94	20.74	-1,372.96	249.97	188.51	61.45	4.068		
7,380.00	7,178.88	7,370.88	7,178.88	31.31	30.55	-179.94	20.74	-1,372.96	249.97	188.45	61.52	4.063		
7,410.00	7,208.88	7,400.88	7,208.88	31.34	30.58	-179.94	20.74	-1,372.96	249.97	188.38	61.59	4.059		
7,440.00	7,238.88	7,430.88	7,238.88	31.38	30.61	-179.94	20.74	-1,372.96	249.97	188.31	61.65	4.054		
7,470.00	7,268.88	7,460.88	7,268.88	31.41	30.65	-179.94	20.74	-1,372.96	249.97	188.25	61.72	4.050		
7,500.00	7,298.88	7,490.88	7,298.88	31.44	30.68	-179.94	20.74	-1,372.96	249.97	188.18	61.79	4.046		
7,530.00	7,328.88	7,520.88	7,328.88	31.48	30.72	-179.94	20.74	-1,372.96	249.97	188.11	61.86	4.041		
7,560.00	7,358.88	7,550.88	7,358.88	31.51	30.75	-179.94	20.74	-1,372.96	249.97	188.04	61.92	4.037		
7,590.00	7,388.88	7,580.88	7,388.88	31.54	30.78	-179.94	20.74	-1,372.96	249.97	187.98	61.99	4.032		
7,620.00	7,418.88	7,610.88	7,418.88	31.58	30.82	-179.94	20.74	-1,372.96	249.97	187.91	62.06	4.028		
7,650.00	7,448.88	7,640.88	7,448.88	31.61	30.85	-179.94	20.74	-1,372.96	249.97	187.84	62.13	4.023		
7,680.00	7,478.88	7,670.88	7,478.88	31.65	30.89	-179.94	20.74	-1,372.96	249.97	187.77	62.20	4.019		
7,710.00	7,508.88	7,700.88	7,508.88	31.68	30.92	-179.94	20.74	-1,372.96	249.97	187.70	62.27	4.015		
7,740.00	7,538.88	7,730.88	7,538.88	31.71	30.96	-179.94	20.74	-1,372.96	249.97	187.63	62.33	4.010		

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

Company:	Piceance Energy, LLC	Local Co-ordinate Reference:	Well Gunderson 29-09M
Project:	Mesa County, CO	TVD Reference:	WELL @ 7560.00usft (Original Well Elev)
Reference Site:	Gunderson	MD Reference:	WELL @ 7560.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Gunderson 29-09M	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMDBBW
Reference Design:	Design #1	Offset TVD Reference:	Reference Datum

Offset Design Gunderson - Gunderson 29-10M - Wellbore #1 - Design #1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
7,770.00	7,568.88	7,760.88	7,568.88	31.75	30.99	-179.94	20.74	-1,372.96	249.97	187.56	62.40	4.006	
7,800.00	7,598.88	7,790.88	7,598.88	31.78	31.03	-179.94	20.74	-1,372.96	249.97	187.49	62.47	4.001	
7,830.00	7,628.88	7,820.88	7,628.88	31.82	31.06	-179.94	20.74	-1,372.96	249.97	187.42	62.54	3.997	
7,860.00	7,658.88	7,850.88	7,658.88	31.85	31.10	-179.94	20.74	-1,372.96	249.97	187.35	62.61	3.992	
7,881.12	7,680.00	7,872.00	7,680.00	31.88	31.12	-179.94	20.74	-1,372.96	249.97	187.30	62.66	3.989	

Company:	Piceance Energy, LLC	Local Co-ordinate Reference:	Well Gunderson 29-09M
Project:	Mesa County, CO	TVD Reference:	WELL @ 7560.00usft (Original Well Elev)
Reference Site:	Gunderson	MD Reference:	WELL @ 7560.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Gunderson 29-09M	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMDBBW
Reference Design:	Design #1	Offset TVD Reference:	Reference Datum

Offset Design Gunderson - Gunderson 29-11M - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-115.00	-13.37	-28.66	31.62					
30.00	30.00	30.00	30.00	0.01	0.03	-115.00	-13.37	-28.66	31.62	31.59	0.03	977.030		
60.00	60.00	60.00	60.00	0.04	0.05	-115.00	-13.37	-28.66	31.62	31.53	0.09	344.834		
90.00	90.00	90.00	90.00	0.07	0.08	-115.00	-13.37	-28.66	31.62	31.47	0.15	209.364		
120.00	120.00	120.00	120.00	0.13	0.13	-115.00	-13.37	-28.66	31.62	31.36	0.26	121.287		
150.00	150.00	150.00	150.00	0.20	0.20	-115.00	-13.37	-28.66	31.62	31.23	0.40	79.939		
180.00	180.00	180.00	180.00	0.27	0.27	-115.00	-13.37	-28.66	31.62	31.09	0.53	59.615		
210.00	210.00	210.00	210.00	0.33	0.33	-115.00	-13.37	-28.66	31.62	30.96	0.67	47.531		
240.00	240.00	240.00	240.00	0.40	0.40	-115.00	-13.37	-28.66	31.62	30.82	0.80	39.520		
270.00	270.00	270.00	270.00	0.47	0.47	-115.00	-13.37	-28.66	31.62	30.69	0.94	33.820		
300.00	300.00	300.00	300.00	0.53	0.53	-115.00	-13.37	-28.66	31.62	30.55	1.07	29.557		
330.00	330.00	330.00	330.00	0.60	0.60	-115.00	-13.37	-28.66	31.62	30.42	1.20	26.249		
360.00	360.00	360.00	360.00	0.67	0.67	-115.00	-13.37	-28.66	31.62	30.28	1.34	23.606		
390.00	390.00	390.00	390.00	0.74	0.74	-115.00	-13.37	-28.66	31.62	30.15	1.47	21.447		
420.00	420.00	420.00	420.00	0.80	0.80	-115.08	-13.37	-28.66	31.57	29.96	1.61	19.635		
450.00	450.00	450.00	450.00	0.87	0.87	-115.48	-13.37	-28.66	31.27	29.53	1.74	17.969		
480.00	479.99	479.99	479.99	0.93	0.94	-116.23	-13.37	-28.66	30.73	28.86	1.87	16.407		
510.00	509.97	509.97	509.97	1.00	1.01	-117.39	-13.37	-28.66	29.94	27.94	2.01	14.932		
540.00	539.94	539.94	539.94	1.06	1.07	-119.00	-13.37	-28.66	28.93	26.79	2.14	13.534		
570.00	569.90	569.90	569.90	1.13	1.14	-121.17	-13.37	-28.66	27.71	25.44	2.27	12.209		
600.00	599.84	599.84	599.84	1.19	1.21	-124.01	-13.37	-28.66	26.31	23.91	2.40	10.958		
630.00	629.75	629.75	629.75	1.27	1.28	-127.70	-13.37	-28.66	24.78	22.24	2.54	9.763		
660.00	659.64	659.64	659.64	1.34	1.34	-132.48	-13.37	-28.66	23.17	20.50	2.68	8.663		
690.00	689.50	689.50	689.50	1.41	1.41	-138.63	-13.37	-28.66	21.59	18.78	2.81	7.676		
720.00	719.33	719.24	719.24	1.49	1.47	-146.34	-13.38	-28.72	20.22	17.27	2.95	6.844		
750.00	749.13	748.95	748.95	1.57	1.54	-155.18	-13.43	-29.07	19.35	16.25	3.10	6.243		
777.63	776.54	776.33	776.32	1.64	1.59	-163.94	-13.53	-29.66	19.08	15.85	3.24	5.898 CC		
780.00	778.89	778.68	778.67	1.65	1.60	-164.70	-13.54	-29.73	19.08	15.84	3.25	5.877 ES		
810.00	808.60	808.44	808.41	1.74	1.66	-174.25	-13.69	-30.69	19.46	16.06	3.40	5.728 SF		
840.00	838.27	838.22	838.17	1.83	1.72	176.82	-13.90	-31.95	20.45	16.90	3.55	5.763		
870.00	867.89	868.03	867.94	1.92	1.78	168.95	-14.15	-33.52	22.00	18.30	3.69	5.955		
900.00	897.47	897.87	897.71	2.02	1.84	162.30	-14.45	-35.40	24.01	20.17	3.83	6.264		
930.00	926.98	927.73	927.49	2.12	1.91	156.85	-14.80	-37.59	26.39	22.40	3.98	6.624		
960.00	956.44	957.62	957.27	2.23	1.98	152.44	-15.20	-40.09	29.07	24.94	4.13	7.038		
990.00	985.84	987.52	987.04	2.34	2.04	148.91	-15.65	-42.89	31.98	27.71	4.27	7.486		
1,020.00	1,015.17	1,017.46	1,016.81	2.46	2.12	146.08	-16.15	-46.01	35.09	30.66	4.42	7.930		
1,050.00	1,044.44	1,047.41	1,046.56	2.59	2.19	143.82	-16.70	-49.43	38.35	33.77	4.58	8.372		
1,080.00	1,073.63	1,077.39	1,076.30	2.71	2.27	142.02	-17.30	-53.17	41.75	37.02	4.74	8.817		
1,110.00	1,102.75	1,107.39	1,106.01	2.85	2.34	140.59	-17.95	-57.21	45.27	40.38	4.89	9.249		
1,140.00	1,131.80	1,137.41	1,135.71	2.99	2.43	139.46	-18.65	-61.57	48.90	43.83	5.07	9.648		
1,170.00	1,160.76	1,167.45	1,165.37	3.14	2.52	138.57	-19.40	-66.23	52.62	47.38	5.24	10.042		
1,200.00	1,189.64	1,197.51	1,195.01	3.28	2.60	137.88	-20.20	-71.20	56.43	51.02	5.41	10.427		
1,230.00	1,218.44	1,227.59	1,224.61	3.44	2.70	137.36	-21.05	-76.49	60.33	54.72	5.60	10.766		
1,260.00	1,247.14	1,257.69	1,254.17	3.61	2.80	136.98	-21.94	-82.09	64.31	58.51	5.80	11.094		
1,290.00	1,275.77	1,287.81	1,283.69	3.77	2.90	136.74	-22.89	-87.99	68.32	62.32	6.00	11.395		
1,320.00	1,304.39	1,317.98	1,313.20	3.95	3.02	136.72	-23.89	-94.22	72.18	65.96	6.21	11.617		
1,350.00	1,333.01	1,348.20	1,342.68	4.12	3.13	136.91	-24.94	-100.76	75.86	69.42	6.44	11.778		
1,380.00	1,361.63	1,378.46	1,372.13	4.30	3.25	137.28	-26.04	-107.61	79.36	72.69	6.67	11.891		
1,410.00	1,390.25	1,408.75	1,401.54	4.47	3.37	137.80	-27.19	-114.78	82.69	75.77	6.92	11.948		
1,440.00	1,418.86	1,439.06	1,430.89	4.65	3.51	138.46	-28.39	-122.26	85.85	78.66	7.19	11.947		
1,470.00	1,447.48	1,469.39	1,460.18	4.83	3.65	139.25	-29.65	-130.06	88.85	81.39	7.46	11.915		
1,500.00	1,476.10	1,499.74	1,489.39	5.01	3.79	140.16	-30.95	-138.16	91.69	83.95	7.74	11.844		

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

Company:	Piceance Energy, LLC	Local Co-ordinate Reference:	Well Gunderson 29-09M
Project:	Mesa County, CO	TVD Reference:	WELL @ 7560.00usft (Original Well Elev)
Reference Site:	Gunderson	MD Reference:	WELL @ 7560.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Gunderson 29-09M	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMDBBW
Reference Design:	Design #1	Offset TVD Reference:	Reference Datum

Offset Design Gunderson - Gunderson 29-11M - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
1,530.00	1,504.72	1,530.08	1,518.52	5.19	3.94	141.17	-32.30	-146.57	94.39	86.34	8.05	11.724		
1,560.00	1,533.34	1,560.43	1,547.55	5.37	4.10	142.30	-33.70	-155.28	96.96	88.59	8.37	11.583		
1,590.00	1,561.96	1,590.77	1,576.48	5.55	4.26	143.52	-35.14	-164.30	99.41	90.71	8.70	11.423		
1,620.00	1,590.58	1,621.04	1,605.25	5.73	4.43	144.83	-36.63	-173.59	101.76	92.70	9.05	11.241		
1,650.00	1,619.20	1,650.86	1,633.56	5.92	4.60	146.06	-38.12	-182.86	104.09	94.68	9.41	11.057		
1,680.00	1,647.82	1,680.68	1,661.86	6.10	4.77	147.24	-39.61	-192.13	106.48	96.70	9.78	10.890		
1,710.00	1,676.44	1,710.50	1,690.16	6.28	4.95	148.37	-41.10	-201.41	108.92	98.77	10.14	10.736		
1,740.00	1,705.06	1,740.32	1,718.47	6.47	5.13	149.44	-42.59	-210.68	111.39	100.88	10.52	10.591		
1,770.00	1,733.67	1,770.14	1,746.77	6.65	5.30	150.47	-44.08	-219.95	113.91	103.02	10.89	10.456		
1,800.00	1,762.29	1,799.96	1,775.07	6.83	5.48	151.45	-45.57	-229.22	116.47	105.19	11.27	10.330		
1,830.00	1,790.91	1,829.78	1,803.38	7.02	5.66	152.38	-47.05	-238.49	119.06	107.40	11.66	10.213		
1,860.00	1,819.53	1,859.60	1,831.68	7.21	5.85	153.28	-48.54	-247.77	121.68	109.64	12.04	10.105		
1,890.00	1,848.15	1,889.42	1,859.98	7.39	6.03	154.13	-50.03	-257.04	124.33	111.91	12.43	10.005		
1,920.00	1,876.77	1,919.24	1,888.29	7.58	6.22	154.95	-51.52	-266.31	127.02	114.20	12.81	9.912		
1,950.00	1,905.39	1,949.07	1,916.59	7.76	6.40	155.74	-53.01	-275.58	129.73	116.53	13.20	9.825		
1,980.00	1,934.01	1,978.89	1,944.89	7.95	6.59	156.49	-54.50	-284.85	132.46	118.87	13.59	9.745		
2,010.00	1,962.63	2,008.71	1,973.20	8.14	6.77	157.21	-55.99	-294.13	135.22	121.24	13.98	9.670		
2,040.00	1,991.25	2,038.53	2,001.50	8.32	6.96	157.90	-57.47	-303.40	138.01	123.63	14.38	9.600		
2,070.00	2,019.87	2,068.35	2,029.80	8.51	7.15	158.57	-58.96	-312.67	140.81	126.04	14.77	9.535		
2,100.00	2,048.49	2,098.17	2,058.11	8.70	7.34	159.20	-60.45	-321.94	143.63	128.48	15.16	9.475		
2,130.00	2,077.10	2,127.99	2,086.41	8.88	7.53	159.82	-61.94	-331.22	146.48	130.92	15.55	9.418		
2,160.00	2,105.72	2,157.81	2,114.71	9.07	7.72	160.41	-63.43	-340.49	149.34	133.39	15.95	9.365		
2,190.00	2,134.34	2,187.63	2,143.02	9.26	7.91	160.97	-64.92	-349.76	152.21	135.87	16.34	9.315		
2,220.00	2,162.96	2,217.45	2,171.32	9.45	8.10	161.52	-66.41	-359.03	155.11	138.37	16.73	9.269		
2,250.00	2,191.58	2,247.27	2,199.63	9.63	8.29	162.04	-67.89	-368.30	158.01	140.89	17.13	9.226		
2,280.00	2,220.20	2,277.09	2,227.93	9.82	8.48	162.55	-69.38	-377.58	160.94	143.42	17.52	9.185		
2,310.00	2,248.82	2,306.91	2,256.23	10.01	8.67	163.04	-70.87	-386.85	163.87	145.96	17.92	9.147		
2,340.00	2,277.44	2,336.73	2,284.54	10.20	8.87	163.51	-72.36	-396.12	166.82	148.51	18.31	9.111		
2,370.00	2,306.06	2,366.55	2,312.84	10.39	9.06	163.96	-73.85	-405.39	169.78	151.08	18.70	9.078		
2,400.00	2,334.68	2,396.38	2,341.14	10.57	9.25	164.40	-75.34	-414.67	172.75	153.65	19.10	9.046		
2,430.00	2,363.30	2,426.20	2,369.45	10.76	9.45	164.82	-76.83	-423.94	175.73	156.24	19.49	9.016		
2,460.00	2,391.92	2,456.02	2,397.75	10.95	9.64	165.23	-78.31	-433.21	178.72	158.84	19.88	8.988		
2,490.00	2,420.53	2,485.84	2,426.05	11.14	9.83	165.63	-79.80	-442.48	181.73	161.45	20.28	8.962		
2,520.00	2,449.15	2,515.66	2,454.36	11.33	10.03	166.01	-81.29	-451.75	184.74	164.07	20.67	8.937		
2,550.00	2,477.77	2,545.48	2,482.66	11.52	10.22	166.38	-82.78	-461.03	187.76	166.69	21.06	8.914		
2,580.00	2,506.39	2,575.30	2,510.96	11.71	10.42	166.74	-84.27	-470.30	190.79	169.33	21.46	8.892		
2,610.00	2,535.01	2,605.12	2,539.27	11.89	10.61	167.08	-85.76	-479.57	193.82	171.97	21.85	8.871		
2,640.00	2,563.63	2,634.94	2,567.57	12.08	10.81	167.42	-87.25	-488.84	196.87	174.63	22.24	8.852		
2,670.00	2,592.25	2,664.76	2,595.87	12.27	11.00	167.75	-88.73	-498.11	199.92	177.29	22.63	8.833		
2,700.00	2,620.87	2,694.58	2,624.18	12.46	11.20	168.06	-90.22	-507.39	202.98	179.95	23.03	8.815		
2,730.00	2,649.49	2,724.40	2,652.48	12.65	11.39	168.37	-91.71	-516.66	206.04	182.63	23.42	8.799		
2,760.00	2,678.11	2,754.22	2,680.78	12.84	11.59	168.67	-93.20	-525.93	209.11	185.30	23.81	8.783		
2,790.00	2,706.73	2,784.04	2,709.09	13.03	11.78	168.96	-94.69	-535.20	212.19	187.99	24.20	8.768		
2,820.00	2,735.34	2,813.87	2,737.39	13.22	11.98	169.24	-96.18	-544.48	215.27	190.68	24.59	8.754		
2,850.00	2,763.96	2,843.69	2,765.69	13.41	12.17	169.51	-97.67	-553.75	218.36	193.38	24.98	8.740		
2,880.00	2,792.58	2,873.51	2,794.00	13.60	12.37	169.78	-99.15	-563.02	221.46	196.08	25.37	8.728		
2,910.00	2,821.20	2,903.33	2,822.30	13.78	12.56	170.03	-100.64	-572.29	224.56	198.79	25.76	8.716		
2,940.00	2,849.82	2,933.15	2,850.60	13.97	12.76	170.29	-102.13	-581.56	227.66	201.51	26.16	8.704		
2,970.00	2,878.44	2,962.97	2,878.91	14.16	12.96	170.53	-103.62	-590.84	230.77	204.23	26.55	8.693		
3,000.00	2,907.06	2,992.79	2,907.21	14.35	13.15	170.77	-105.11	-600.11	233.88	206.95	26.94	8.683		
3,030.00	2,935.68	3,022.61	2,935.51	14.54	13.35	171.00	-106.60	-609.38	237.00	209.68	27.33	8.673		
3,060.00	2,964.30	3,052.43	2,963.82	14.73	13.55	171.22	-108.09	-618.65	240.12	212.41	27.72	8.664		

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

Company:	Piceance Energy, LLC	Local Co-ordinate Reference:	Well Gunderson 29-09M
Project:	Mesa County, CO	TVD Reference:	WELL @ 7560.00usft (Original Well Elev)
Reference Site:	Gunderson	MD Reference:	WELL @ 7560.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Gunderson 29-09M	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMDBBW
Reference Design:	Design #1	Offset TVD Reference:	Reference Datum

Offset Design Gunderson - Gunderson 29-11M - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
3,090.00	2,992.92	3,082.25	2,992.12	14.92	13.74	171.44	-109.57	-627.93	243.25	215.15	28.11	8.655		
3,120.00	3,021.54	3,112.07	3,020.42	15.11	13.94	171.66	-111.06	-637.20	246.38	217.89	28.50	8.646		
3,150.00	3,050.16	3,141.89	3,048.73	15.30	14.14	171.87	-112.55	-646.47	249.52	220.63	28.88	8.638		
3,180.00	3,078.77	3,171.71	3,077.03	15.49	14.33	172.07	-114.04	-655.74	252.65	223.38	29.27	8.631		
3,210.00	3,107.39	3,201.53	3,105.34	15.68	14.53	172.27	-115.53	-665.01	255.79	226.13	29.66	8.623		
3,240.00	3,136.01	3,231.35	3,133.64	15.87	14.73	172.46	-117.02	-674.29	258.94	228.89	30.05	8.616		
3,270.00	3,164.63	3,261.18	3,161.94	16.06	14.92	172.65	-118.51	-683.56	262.08	231.64	30.44	8.610		
3,300.00	3,193.25	3,291.00	3,190.25	16.25	15.12	172.84	-119.99	-692.83	265.24	234.41	30.83	8.603		
3,330.00	3,221.87	3,320.82	3,218.55	16.44	15.32	173.02	-121.48	-702.10	268.39	237.17	31.22	8.597		
3,360.00	3,250.49	3,350.64	3,246.85	16.63	15.52	173.19	-122.97	-711.37	271.54	239.94	31.61	8.592		
3,390.00	3,279.11	3,380.46	3,275.16	16.82	15.71	173.37	-124.46	-720.65	274.70	242.71	31.99	8.586		
3,420.00	3,307.73	3,410.28	3,303.46	17.01	15.91	173.53	-125.95	-729.92	277.87	245.48	32.38	8.581		
3,450.00	3,336.35	3,440.10	3,331.76	17.20	16.11	173.70	-127.44	-739.19	281.03	248.26	32.77	8.576		
3,480.00	3,364.97	3,469.92	3,360.07	17.39	16.31	173.86	-128.93	-748.46	284.20	251.04	33.16	8.571		
3,510.00	3,393.59	3,499.74	3,388.37	17.58	16.50	174.02	-130.41	-757.74	287.37	253.82	33.55	8.567		
3,540.00	3,422.20	3,529.56	3,416.67	17.77	16.70	174.17	-131.90	-767.01	290.54	256.61	33.93	8.562		
3,570.00	3,450.82	3,559.38	3,444.98	17.96	16.90	174.32	-133.39	-776.28	293.71	259.39	34.32	8.558		
3,600.00	3,479.44	3,589.20	3,473.28	18.15	17.10	174.47	-134.88	-785.55	296.89	262.18	34.71	8.554		
3,630.00	3,508.06	3,619.02	3,501.58	18.33	17.29	174.61	-136.37	-794.82	300.07	264.97	35.09	8.550		
3,660.00	3,536.68	3,648.84	3,529.89	18.52	17.49	174.75	-137.86	-804.10	303.25	267.76	35.48	8.547		
3,690.00	3,565.30	3,678.67	3,558.19	18.71	17.69	174.89	-139.35	-813.37	306.43	270.56	35.87	8.543		
3,720.00	3,593.92	3,708.49	3,586.49	18.90	17.89	175.03	-140.83	-822.64	309.61	273.36	36.26	8.540		
3,750.00	3,622.54	3,738.31	3,614.80	19.09	18.08	175.16	-142.32	-831.91	312.80	276.16	36.64	8.537		
3,780.00	3,651.16	3,768.13	3,643.10	19.28	18.28	175.29	-143.81	-841.19	315.99	278.96	37.03	8.533		
3,810.00	3,679.78	3,797.95	3,671.40	19.47	18.48	175.42	-145.30	-850.46	319.18	281.76	37.42	8.531		
3,840.00	3,708.40	3,827.77	3,699.71	19.66	18.68	175.54	-146.79	-859.73	322.37	284.57	37.80	8.528		
3,870.00	3,737.01	3,857.59	3,728.01	19.85	18.88	175.66	-148.28	-869.00	325.56	287.37	38.19	8.525		
3,900.00	3,765.63	3,887.41	3,756.31	20.04	19.07	175.78	-149.77	-878.27	328.76	290.18	38.57	8.523		
3,930.00	3,794.25	3,917.23	3,784.62	20.23	19.27	175.90	-151.25	-887.55	331.95	292.99	38.96	8.520		
3,960.00	3,822.87	3,947.05	3,812.92	20.42	19.47	176.02	-152.74	-896.82	335.15	295.80	39.35	8.518		
3,990.00	3,851.49	3,976.87	3,841.22	20.61	19.67	176.13	-154.23	-906.09	338.35	298.62	39.73	8.516		
4,020.00	3,880.11	4,006.69	3,869.53	20.80	19.87	176.24	-155.72	-915.36	341.55	301.43	40.12	8.513		
4,050.00	3,908.73	4,036.51	3,897.83	20.99	20.06	176.35	-157.21	-924.63	344.75	304.25	40.50	8.511		
4,080.00	3,937.35	4,066.33	3,926.13	21.18	20.26	176.46	-158.70	-933.91	347.96	307.07	40.89	8.509		
4,110.00	3,965.97	4,096.15	3,954.44	21.37	20.46	176.56	-160.19	-943.18	351.16	309.88	41.28	8.508		
4,140.00	3,994.59	4,125.98	3,982.74	21.56	20.66	176.66	-161.67	-952.45	354.37	312.71	41.66	8.506		
4,170.00	4,023.21	4,155.80	4,011.05	21.75	20.86	176.77	-163.16	-961.72	357.57	315.53	42.05	8.504		
4,200.00	4,051.83	4,185.62	4,039.35	21.94	21.06	176.87	-164.65	-971.00	360.78	318.35	42.43	8.502		
4,230.00	4,080.44	4,215.44	4,067.65	22.13	21.25	176.96	-166.14	-980.27	363.99	321.17	42.82	8.501		
4,260.00	4,109.06	4,245.26	4,095.96	22.33	21.45	177.06	-167.63	-989.54	367.20	324.00	43.20	8.499		
4,290.00	4,137.68	4,275.08	4,124.26	22.52	21.65	177.15	-169.12	-998.81	370.42	326.83	43.59	8.498		
4,320.00	4,166.30	4,304.90	4,152.56	22.71	21.85	177.25	-170.61	-1,008.08	373.63	329.65	43.97	8.497		
4,350.00	4,194.92	4,334.72	4,180.87	22.90	22.05	177.34	-172.09	-1,017.36	376.84	332.48	44.36	8.495		
4,380.00	4,223.54	4,364.54	4,209.17	23.09	22.25	177.43	-173.58	-1,026.63	380.06	335.31	44.74	8.494		
4,410.00	4,252.16	4,394.36	4,237.47	23.28	22.44	177.52	-175.07	-1,035.90	383.27	338.15	45.13	8.493		
4,440.00	4,280.78	4,424.18	4,265.78	23.47	22.64	177.60	-176.56	-1,045.17	386.49	340.98	45.51	8.492		
4,470.00	4,309.40	4,454.00	4,294.08	23.66	22.84	177.69	-178.05	-1,054.45	389.71	343.81	45.90	8.491		
4,500.00	4,338.02	4,483.82	4,322.38	23.85	23.04	177.77	-179.54	-1,063.72	392.93	346.65	46.28	8.490		
4,530.00	4,366.64	4,513.64	4,350.69	24.04	23.24	177.85	-181.03	-1,072.99	396.15	349.48	46.67	8.489		
4,560.00	4,395.26	4,543.47	4,378.99	24.23	23.44	177.94	-182.51	-1,082.26	399.37	352.32	47.05	8.488		
4,590.00	4,423.87	4,573.29	4,407.29	24.42	23.63	178.02	-184.00	-1,091.53	402.59	355.15	47.44	8.487		
4,620.00	4,452.49	4,603.11	4,435.60	24.61	23.83	178.09	-185.49	-1,100.81	405.81	357.99	47.82	8.486		

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

Company:	Piceance Energy, LLC	Local Co-ordinate Reference:	Well Gunderson 29-09M
Project:	Mesa County, CO	TVD Reference:	WELL @ 7560.00usft (Original Well Elev)
Reference Site:	Gunderson	MD Reference:	WELL @ 7560.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Gunderson 29-09M	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMDBBW
Reference Design:	Design #1	Offset TVD Reference:	Reference Datum

Offset Design Gunderson - Gunderson 29-11M - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
4,650.00	4,481.11	4,632.93	4,463.90	24.80	24.03	178.17	-186.98	-1,110.08	409.04	360.83	48.21	8.485		
4,680.00	4,509.73	4,662.75	4,492.20	24.99	24.23	178.25	-188.47	-1,119.35	412.26	363.67	48.59	8.484		
4,710.00	4,538.35	4,692.57	4,520.51	25.18	24.43	178.32	-189.96	-1,128.62	415.49	366.51	48.98	8.484		
4,740.00	4,566.97	4,722.39	4,548.81	25.37	24.63	178.40	-191.45	-1,137.89	418.71	369.35	49.36	8.483		
4,770.00	4,595.59	4,752.21	4,577.11	25.56	24.83	178.47	-192.93	-1,147.17	421.94	372.20	49.74	8.482		
4,800.00	4,624.21	4,782.03	4,605.42	25.75	25.02	178.54	-194.42	-1,156.44	425.17	375.04	50.13	8.482		
4,830.00	4,652.83	4,811.85	4,633.72	25.94	25.22	178.61	-195.91	-1,165.71	428.40	377.88	50.51	8.481		
4,860.00	4,681.45	4,841.67	4,662.02	26.13	25.42	178.68	-197.40	-1,174.98	431.62	380.73	50.90	8.480		
4,890.00	4,710.07	4,871.49	4,690.33	26.32	25.62	178.75	-198.89	-1,184.26	434.85	383.57	51.28	8.480		
4,920.00	4,738.68	4,901.31	4,718.63	26.51	25.82	178.82	-200.38	-1,193.53	438.08	386.42	51.66	8.479		
4,950.00	4,767.30	4,931.13	4,746.93	26.70	26.02	178.88	-201.87	-1,202.80	441.31	389.27	52.05	8.479		
4,980.00	4,795.92	4,960.96	4,775.24	26.89	26.22	178.95	-203.35	-1,212.07	444.55	392.11	52.43	8.478		
5,010.00	4,824.54	4,990.78	4,803.54	27.08	26.42	179.01	-204.84	-1,221.34	447.78	394.96	52.82	8.478		
5,040.00	4,853.16	5,020.70	4,831.94	27.27	26.61	179.08	-206.34	-1,230.65	451.01	397.81	53.20	8.478		
5,070.00	4,881.79	5,051.25	4,861.01	27.45	26.78	179.15	-207.83	-1,239.95	454.21	400.66	53.55	8.482		
5,100.00	4,910.49	5,081.82	4,890.19	27.62	26.96	179.21	-209.27	-1,248.95	457.31	403.42	53.89	8.486		
5,130.00	4,939.28	5,112.42	4,919.48	27.75	27.12	179.27	-210.67	-1,257.65	460.31	406.12	54.19	8.495		
5,160.00	4,968.16	5,143.03	4,948.89	27.89	27.26	179.33	-212.02	-1,266.05	463.20	408.74	54.46	8.505		
5,190.00	4,997.12	5,173.66	4,978.40	28.02	27.39	179.38	-213.32	-1,274.14	465.98	411.25	54.73	8.514		
5,220.00	5,026.16	5,204.30	5,008.02	28.15	27.53	179.43	-214.57	-1,281.92	468.66	413.66	54.99	8.522		
5,250.00	5,055.28	5,234.97	5,037.73	28.27	27.65	179.49	-215.77	-1,289.39	471.23	415.99	55.24	8.531		
5,280.00	5,084.47	5,265.64	5,067.54	28.39	27.77	179.53	-216.92	-1,296.56	473.69	418.21	55.48	8.538		
5,310.00	5,113.73	5,296.34	5,097.44	28.50	27.90	179.58	-218.02	-1,303.41	476.04	420.32	55.72	8.543		
5,340.00	5,143.06	5,327.05	5,127.43	28.61	28.00	179.63	-219.07	-1,309.94	478.28	422.35	55.94	8.551		
5,370.00	5,172.46	5,357.77	5,157.50	28.71	28.11	179.67	-220.06	-1,316.16	480.41	424.27	56.15	8.556		
5,400.00	5,201.92	5,388.51	5,187.65	28.82	28.22	179.71	-221.01	-1,322.07	482.44	426.08	56.36	8.560		
5,430.00	5,231.43	5,419.26	5,217.87	28.91	28.32	179.75	-221.91	-1,327.66	484.35	427.80	56.55	8.565		
5,460.00	5,261.00	5,450.02	5,248.17	29.00	28.41	179.78	-222.76	-1,332.93	486.16	429.42	56.73	8.569		
5,490.00	5,290.62	5,480.79	5,278.53	29.09	28.50	179.82	-223.55	-1,337.88	487.85	430.93	56.92	8.571		
5,520.00	5,320.29	5,511.58	5,308.95	29.17	28.59	179.85	-224.29	-1,342.50	489.44	432.35	57.08	8.574		
5,550.00	5,350.00	5,542.37	5,339.44	29.24	28.67	179.88	-224.98	-1,346.81	490.91	433.67	57.24	8.577		
5,580.00	5,379.76	5,573.18	5,369.98	29.32	28.74	179.91	-225.62	-1,350.80	492.27	434.88	57.39	8.577		
5,610.00	5,409.55	5,603.99	5,400.56	29.39	28.82	179.93	-226.21	-1,354.46	493.52	435.99	57.54	8.577		
5,640.00	5,439.38	5,634.81	5,431.20	29.45	28.88	179.95	-226.75	-1,357.79	494.66	437.00	57.66	8.579		
5,670.00	5,469.24	5,665.64	5,461.87	29.51	28.95	179.97	-227.23	-1,360.80	495.69	437.91	57.79	8.578		
5,700.00	5,499.13	5,696.47	5,492.59	29.57	29.01	179.99	-227.66	-1,363.49	496.61	438.70	57.91	8.576		
5,730.00	5,529.04	5,727.31	5,523.34	29.61	29.06	-179.99	-228.04	-1,365.85	497.42	439.41	58.01	8.575		
5,760.00	5,558.98	5,758.16	5,554.11	29.66	29.11	-179.98	-228.37	-1,367.88	498.11	440.01	58.10	8.573		
5,790.00	5,588.94	5,789.01	5,584.91	29.71	29.16	-179.96	-228.64	-1,369.59	498.69	440.49	58.20	8.569		
5,820.00	5,618.91	5,819.86	5,615.73	29.74	29.19	-179.95	-228.86	-1,370.97	499.16	440.89	58.28	8.565		
5,850.00	5,648.89	5,850.71	5,646.57	29.78	29.23	-179.95	-229.03	-1,372.02	499.52	441.18	58.34	8.562		
5,880.00	5,678.88	5,881.57	5,677.42	29.81	29.26	-179.94	-229.15	-1,372.74	499.77	441.36	58.41	8.556		
5,910.00	5,708.88	5,912.43	5,708.27	29.84	29.30	-179.94	-229.21	-1,373.14	499.90	441.43	58.47	8.549		
5,940.00	5,738.88	5,943.03	5,738.88	29.87	29.32	-179.94	-229.22	-1,373.22	499.93	441.41	58.52	8.542		
5,970.00	5,768.88	5,973.03	5,768.88	29.89	29.35	-179.94	-229.22	-1,373.22	499.93	441.36	58.58	8.535		
6,000.00	5,798.88	6,003.03	5,798.88	29.92	29.37	-179.94	-229.22	-1,373.22	499.93	441.30	58.63	8.527		
6,030.00	5,828.88	6,033.03	5,828.88	29.94	29.40	-179.94	-229.22	-1,373.22	499.93	441.25	58.68	8.519		
6,060.00	5,858.88	6,063.03	5,858.88	29.97	29.43	-179.94	-229.22	-1,373.22	499.93	441.19	58.74	8.511		
6,090.00	5,888.88	6,093.03	5,888.88	30.00	29.46	-179.94	-229.22	-1,373.22	499.93	441.14	58.79	8.503		
6,120.00	5,918.88	6,123.03	5,918.88	30.03	29.48	-179.94	-229.22	-1,373.22	499.93	441.08	58.85	8.495		
6,150.00	5,948.88	6,153.03	5,948.88	30.06	29.51	-179.94	-229.22	-1,373.22	499.93	441.02	58.91	8.487		
6,180.00	5,978.88	6,183.03	5,978.88	30.08	29.54	-179.94	-229.22	-1,373.22	499.93	440.97	58.96	8.479		

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

Company:	Piceance Energy, LLC	Local Co-ordinate Reference:	Well Gunderson 29-09M
Project:	Mesa County, CO	TVD Reference:	WELL @ 7560.00usft (Original Well Elev)
Reference Site:	Gunderson	MD Reference:	WELL @ 7560.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Gunderson 29-09M	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMDBBW
Reference Design:	Design #1	Offset TVD Reference:	Reference Datum

Offset Design Gunderson - Gunderson 29-11M - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
6,210.00	6,008.88	6,213.03	6,008.88	30.11	29.57	-179.94	-229.22	-1,373.22	499.93	440.91	59.02	8.470		
6,240.00	6,038.88	6,243.03	6,038.88	30.14	29.59	-179.94	-229.22	-1,373.22	499.93	440.85	59.08	8.462		
6,270.00	6,068.88	6,273.03	6,068.88	30.17	29.62	-179.94	-229.22	-1,373.22	499.93	440.80	59.14	8.454		
6,300.00	6,098.88	6,303.03	6,098.88	30.20	29.65	-179.94	-229.22	-1,373.22	499.93	440.74	59.19	8.446		
6,330.00	6,128.88	6,333.03	6,128.88	30.23	29.68	-179.94	-229.22	-1,373.22	499.93	440.68	59.25	8.437		
6,360.00	6,158.88	6,363.03	6,158.88	30.26	29.71	-179.94	-229.22	-1,373.22	499.93	440.62	59.31	8.429		
6,390.00	6,188.88	6,393.03	6,188.88	30.28	29.74	-179.94	-229.22	-1,373.22	499.93	440.56	59.37	8.421		
6,420.00	6,218.88	6,423.03	6,218.88	30.31	29.77	-179.94	-229.22	-1,373.22	499.93	440.50	59.43	8.412		
6,450.00	6,248.88	6,453.03	6,248.88	30.34	29.79	-179.94	-229.22	-1,373.22	499.93	440.45	59.49	8.404		
6,480.00	6,278.88	6,483.03	6,278.88	30.37	29.82	-179.94	-229.22	-1,373.22	499.93	440.39	59.55	8.396		
6,510.00	6,308.88	6,513.03	6,308.88	30.40	29.85	-179.94	-229.22	-1,373.22	499.93	440.33	59.61	8.387		
6,540.00	6,338.88	6,543.03	6,338.88	30.43	29.88	-179.94	-229.22	-1,373.22	499.93	440.27	59.66	8.379		
6,570.00	6,368.88	6,573.03	6,368.88	30.46	29.91	-179.94	-229.22	-1,373.22	499.93	440.21	59.72	8.371		
6,600.00	6,398.88	6,603.03	6,398.88	30.49	29.94	-179.94	-229.22	-1,373.22	499.93	440.15	59.78	8.362		
6,630.00	6,428.88	6,633.03	6,428.88	30.52	29.97	-179.94	-229.22	-1,373.22	499.93	440.09	59.85	8.354		
6,660.00	6,458.88	6,663.03	6,458.88	30.55	30.00	-179.94	-229.22	-1,373.22	499.93	440.03	59.91	8.345		
6,690.00	6,488.88	6,693.03	6,488.88	30.58	30.03	-179.94	-229.22	-1,373.22	499.93	439.97	59.97	8.337		
6,720.00	6,518.88	6,723.03	6,518.88	30.61	30.06	-179.94	-229.22	-1,373.22	499.93	439.90	60.03	8.328		
6,750.00	6,548.88	6,753.03	6,548.88	30.64	30.09	-179.94	-229.22	-1,373.22	499.93	439.84	60.09	8.320		
6,780.00	6,578.88	6,783.03	6,578.88	30.67	30.12	-179.94	-229.22	-1,373.22	499.93	439.78	60.15	8.311		
6,810.00	6,608.88	6,813.03	6,608.88	30.70	30.15	-179.94	-229.22	-1,373.22	499.93	439.72	60.21	8.303		
6,840.00	6,638.88	6,843.03	6,638.88	30.74	30.18	-179.94	-229.22	-1,373.22	499.93	439.66	60.28	8.294		
6,870.00	6,668.88	6,873.03	6,668.88	30.77	30.21	-179.94	-229.22	-1,373.22	499.93	439.59	60.34	8.286		
6,900.00	6,698.88	6,903.03	6,698.88	30.80	30.24	-179.94	-229.22	-1,373.22	499.93	439.53	60.40	8.277		
6,930.00	6,728.88	6,933.03	6,728.88	30.83	30.28	-179.94	-229.22	-1,373.22	499.93	439.47	60.46	8.268		
6,960.00	6,758.88	6,963.03	6,758.88	30.86	30.31	-179.94	-229.22	-1,373.22	499.93	439.41	60.53	8.260		
6,990.00	6,788.88	6,993.03	6,788.88	30.89	30.34	-179.94	-229.22	-1,373.22	499.93	439.34	60.59	8.251		
7,020.00	6,818.88	7,023.03	6,818.88	30.92	30.37	-179.94	-229.22	-1,373.22	499.93	439.28	60.65	8.242		
7,050.00	6,848.88	7,053.03	6,848.88	30.95	30.40	-179.94	-229.22	-1,373.22	499.93	439.21	60.72	8.234		
7,080.00	6,878.88	7,083.03	6,878.88	30.99	30.43	-179.94	-229.22	-1,373.22	499.93	439.15	60.78	8.225		
7,110.00	6,908.88	7,113.03	6,908.88	31.02	30.46	-179.94	-229.22	-1,373.22	499.93	439.09	60.85	8.216		
7,140.00	6,938.88	7,143.03	6,938.88	31.05	30.50	-179.94	-229.22	-1,373.22	499.93	439.02	60.91	8.208		
7,170.00	6,968.88	7,173.03	6,968.88	31.08	30.53	-179.94	-229.22	-1,373.22	499.93	438.96	60.97	8.199		
7,200.00	6,998.88	7,203.03	6,998.88	31.11	30.56	-179.94	-229.22	-1,373.22	499.93	438.89	61.04	8.190		
7,230.00	7,028.88	7,233.03	7,028.88	31.15	30.59	-179.94	-229.22	-1,373.22	499.93	438.83	61.11	8.182		
7,260.00	7,058.88	7,263.03	7,058.88	31.18	30.62	-179.94	-229.22	-1,373.22	499.93	438.76	61.17	8.173		
7,290.00	7,088.88	7,293.03	7,088.88	31.21	30.66	-179.94	-229.22	-1,373.22	499.93	438.70	61.24	8.164		
7,320.00	7,118.88	7,323.03	7,118.88	31.24	30.69	-179.94	-229.22	-1,373.22	499.93	438.63	61.30	8.155		
7,350.00	7,148.88	7,353.03	7,148.88	31.28	30.72	-179.94	-229.22	-1,373.22	499.93	438.56	61.37	8.146		
7,380.00	7,178.88	7,383.03	7,178.88	31.31	30.75	-179.94	-229.22	-1,373.22	499.93	438.50	61.43	8.138		
7,410.00	7,208.88	7,413.03	7,208.88	31.34	30.79	-179.94	-229.22	-1,373.22	499.93	438.43	61.50	8.129		
7,440.00	7,238.88	7,443.03	7,238.88	31.38	30.82	-179.94	-229.22	-1,373.22	499.93	438.36	61.57	8.120		
7,470.00	7,268.88	7,473.03	7,268.88	31.41	30.85	-179.94	-229.22	-1,373.22	499.93	438.30	61.63	8.111		
7,500.00	7,298.88	7,503.03	7,298.88	31.44	30.89	-179.94	-229.22	-1,373.22	499.93	438.23	61.70	8.102		
7,530.00	7,328.88	7,533.03	7,328.88	31.48	30.92	-179.94	-229.22	-1,373.22	499.93	438.16	61.77	8.094		
7,560.00	7,358.88	7,563.03	7,358.88	31.51	30.95	-179.94	-229.22	-1,373.22	499.93	438.10	61.84	8.085		
7,590.00	7,388.88	7,593.03	7,388.88	31.54	30.99	-179.94	-229.22	-1,373.22	499.93	438.03	61.90	8.076		
7,620.00	7,418.88	7,623.03	7,418.88	31.58	31.02	-179.94	-229.22	-1,373.22	499.93	437.96	61.97	8.067		
7,650.00	7,448.88	7,653.03	7,448.88	31.61	31.05	-179.94	-229.22	-1,373.22	499.93	437.89	62.04	8.058		
7,680.00	7,478.88	7,683.03	7,478.88	31.65	31.09	-179.94	-229.22	-1,373.22	499.93	437.82	62.11	8.049		
7,710.00	7,508.88	7,713.03	7,508.88	31.68	31.12	-179.94	-229.22	-1,373.22	499.93	437.75	62.18	8.040		
7,740.00	7,538.88	7,743.03	7,538.88	31.71	31.15	-179.94	-229.22	-1,373.22	499.93	437.68	62.25	8.031		

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

Company:	Piceance Energy, LLC	Local Co-ordinate Reference:	Well Gunderson 29-09M
Project:	Mesa County, CO	TVD Reference:	WELL @ 7560.00usft (Original Well Elev)
Reference Site:	Gunderson	MD Reference:	WELL @ 7560.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Gunderson 29-09M	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMDBBW
Reference Design:	Design #1	Offset TVD Reference:	Reference Datum

Offset Design	Gunderson - Gunderson 29-11M - Wellbore #1 - Design #1											Offset Site Error:	0.00 usft
Survey Program:	0-MWD											Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
7,770.00	7,568.88	7,773.03	7,568.88	31.75	31.19	-179.94	-229.22	-1,373.22	499.93	437.62	62.32	8.022	
7,800.00	7,598.88	7,803.03	7,598.88	31.78	31.22	-179.94	-229.22	-1,373.22	499.93	437.55	62.39	8.014	
7,830.00	7,628.88	7,833.03	7,628.88	31.82	31.26	-179.94	-229.22	-1,373.22	499.93	437.48	62.46	8.005	
7,860.00	7,658.88	7,863.03	7,658.88	31.85	31.29	-179.94	-229.22	-1,373.22	499.93	437.41	62.53	7.996	
7,881.12	7,680.00	7,884.16	7,680.00	31.88	31.32	-179.94	-229.22	-1,373.22	499.93	437.36	62.57	7.989	

Company:	Piceance Energy, LLC	Local Co-ordinate Reference:	Well Gunderson 29-09M
Project:	Mesa County, CO	TVD Reference:	WELL @ 7560.00usft (Original Well Elev)
Reference Site:	Gunderson	MD Reference:	WELL @ 7560.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Gunderson 29-09M	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMDBBW
Reference Design:	Design #1	Offset TVD Reference:	Reference Datum

Offset Design Gunderson - Gunderson 29-12M - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-123.14	-12.24	-18.75	22.39					
30.00	30.00	30.00	30.00	0.01	0.03	-123.14	-12.24	-18.75	22.39	22.36	0.03	691.705		
60.00	60.00	60.00	60.00	0.04	0.05	-123.14	-12.24	-18.75	22.39	22.30	0.09	244.131		
90.00	90.00	90.00	90.00	0.07	0.08	-123.14	-12.24	-18.75	22.39	22.24	0.15	148.223		
120.00	120.00	120.00	120.00	0.13	0.13	-123.14	-12.24	-18.75	22.39	22.13	0.26	85.867		
150.00	150.00	150.00	150.00	0.20	0.20	-123.14	-12.24	-18.75	22.39	21.99	0.40	56.594		
180.00	180.00	180.00	180.00	0.27	0.27	-123.14	-12.24	-18.75	22.39	21.86	0.53	42.206		
210.00	210.00	210.00	210.00	0.33	0.33	-123.14	-12.24	-18.75	22.39	21.72	0.67	33.651		
240.00	240.00	240.00	240.00	0.40	0.40	-123.14	-12.24	-18.75	22.39	21.59	0.80	27.979		
270.00	270.00	270.00	270.00	0.47	0.47	-123.14	-12.24	-18.75	22.39	21.45	0.94	23.944		
300.00	300.00	300.00	300.00	0.53	0.53	-123.14	-12.24	-18.75	22.39	21.32	1.07	20.926		
330.00	330.00	330.00	330.00	0.60	0.60	-123.14	-12.24	-18.75	22.39	21.18	1.20	18.583		
360.00	360.00	360.00	360.00	0.67	0.67	-123.14	-12.24	-18.75	22.39	21.05	1.34	16.712		
390.00	390.00	390.00	390.00	0.74	0.74	-123.14	-12.24	-18.75	22.39	20.91	1.47	15.184		
420.00	420.00	420.00	420.00	0.80	0.80	-123.26	-12.24	-18.75	22.34	20.73	1.61	13.895		
450.00	450.00	450.00	450.00	0.87	0.87	-123.93	-12.24	-18.75	22.08	20.34	1.74	12.687		
480.00	479.99	479.99	479.99	0.93	0.94	-125.20	-12.24	-18.75	21.60	19.73	1.87	11.536		
510.00	509.97	509.97	509.97	1.00	1.01	-127.18	-12.24	-18.75	20.93	18.92	2.00	10.439		
540.00	539.94	539.94	539.94	1.06	1.07	-129.97	-12.24	-18.75	20.08	17.95	2.14	9.396		
570.00	569.90	569.90	569.90	1.13	1.14	-133.76	-12.24	-18.75	19.11	16.84	2.27	8.419		
600.00	599.84	599.84	599.84	1.19	1.21	-138.79	-12.24	-18.75	18.06	15.66	2.40	7.522		
630.00	629.75	629.75	629.75	1.27	1.28	-145.34	-12.24	-18.75	17.05	14.51	2.54	6.713		
660.00	659.64	659.64	659.64	1.34	1.34	-153.69	-12.24	-18.75	16.20	13.52	2.68	6.047		
690.00	689.50	689.50	689.50	1.41	1.41	-163.87	-12.24	-18.75	15.69	12.87	2.82	5.568		
703.16	702.59	702.59	702.59	1.44	1.44	-168.84	-12.24	-18.75	15.63	12.75	2.88	5.423 CC, ES		
720.00	719.33	719.33	719.33	1.49	1.48	-175.51	-12.24	-18.75	15.74	12.78	2.96	5.309		
750.00	749.13	749.13	749.13	1.57	1.54	172.34	-12.24	-18.75	16.52	13.41	3.11	5.309 SF		
780.00	778.89	778.89	778.89	1.65	1.61	160.84	-12.24	-18.75	18.11	14.86	3.25	5.570		
810.00	808.60	808.61	808.61	1.74	1.68	150.88	-12.24	-18.76	20.50	17.11	3.39	6.052		
840.00	838.27	838.37	838.37	1.83	1.74	143.21	-12.32	-18.99	23.53	20.01	3.52	6.685		
870.00	867.89	868.16	868.15	1.92	1.80	137.58	-12.50	-19.51	27.02	23.37	3.65	7.403		
900.00	897.47	897.97	897.95	2.02	1.86	133.47	-12.78	-20.33	30.83	27.05	3.78	8.162		
930.00	926.98	927.81	927.77	2.12	1.92	130.47	-13.17	-21.44	34.87	30.96	3.91	8.922		
960.00	956.44	957.68	957.60	2.23	1.98	128.28	-13.65	-22.85	39.10	35.06	4.04	9.684		
990.00	985.84	987.58	987.44	2.34	2.04	126.68	-14.24	-24.55	43.48	39.31	4.16	10.439		
1,020.00	1,015.17	1,017.50	1,017.29	2.46	2.10	125.53	-14.93	-26.55	47.99	43.69	4.30	11.161		
1,050.00	1,044.44	1,047.44	1,047.13	2.59	2.17	124.71	-15.72	-28.84	52.62	48.18	4.44	11.856		
1,080.00	1,073.63	1,077.40	1,076.97	2.71	2.23	124.16	-16.61	-31.43	57.35	52.77	4.58	12.533		
1,110.00	1,102.75	1,107.38	1,106.79	2.85	2.30	123.82	-17.61	-34.32	62.19	57.47	4.72	13.181		
1,140.00	1,131.80	1,137.38	1,136.60	2.99	2.37	123.64	-18.70	-37.51	67.13	62.26	4.87	13.785		
1,170.00	1,160.76	1,167.40	1,166.40	3.14	2.45	123.59	-19.90	-40.99	72.16	67.14	5.02	14.371		
1,200.00	1,189.64	1,197.44	1,196.16	3.28	2.52	123.65	-21.21	-44.77	77.29	72.12	5.17	14.941		
1,230.00	1,218.44	1,227.49	1,225.90	3.44	2.60	123.80	-22.61	-48.85	82.52	77.18	5.34	15.453		
1,260.00	1,247.14	1,257.55	1,255.61	3.61	2.69	124.01	-24.12	-53.22	87.85	82.34	5.51	15.948		
1,290.00	1,275.77	1,287.64	1,285.29	3.77	2.77	124.30	-25.73	-57.89	93.22	87.54	5.68	16.402		
1,320.00	1,304.39	1,317.79	1,314.97	3.95	2.86	124.70	-27.44	-62.87	98.43	92.56	5.87	16.756		
1,350.00	1,333.01	1,347.98	1,344.65	4.12	2.96	125.20	-29.26	-68.15	103.47	97.40	6.07	17.039		
1,380.00	1,361.63	1,378.23	1,374.31	4.30	3.06	125.80	-31.19	-73.73	108.32	102.05	6.27	17.265		
1,410.00	1,390.25	1,408.51	1,403.95	4.47	3.16	126.49	-33.22	-79.62	113.01	106.52	6.49	17.419		
1,440.00	1,418.86	1,438.83	1,433.55	4.65	3.28	127.25	-35.35	-85.81	117.53	110.82	6.71	17.503		
1,470.00	1,447.48	1,469.18	1,463.11	4.83	3.39	128.08	-37.59	-92.30	121.89	114.95	6.94	17.552		
1,500.00	1,476.10	1,499.54	1,492.61	5.01	3.51	128.98	-39.93	-99.09	126.11	118.92	7.19	17.543		

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

Company:	Piceance Energy, LLC	Local Co-ordinate Reference:	Well Gunderson 29-09M
Project:	Mesa County, CO	TVD Reference:	WELL @ 7560.00usft (Original Well Elev)
Reference Site:	Gunderson	MD Reference:	WELL @ 7560.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Gunderson 29-09M	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMDBBW
Reference Design:	Design #1	Offset TVD Reference:	Reference Datum

Offset Design Gunderson - Gunderson 29-12M - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
1,530.00	1,504.72	1,529.92	1,522.05	5.19	3.64	129.94	-42.38	-106.19	130.18	122.73	7.45	17.472		
1,560.00	1,533.34	1,560.31	1,551.42	5.37	3.77	130.96	-44.92	-113.57	134.12	126.40	7.72	17.369		
1,590.00	1,561.96	1,590.70	1,580.70	5.55	3.91	132.03	-47.57	-121.26	137.94	129.94	8.00	17.239		
1,620.00	1,590.58	1,621.08	1,609.88	5.73	4.06	133.16	-50.32	-129.23	141.65	133.35	8.30	17.063		
1,650.00	1,619.20	1,651.44	1,638.96	5.92	4.21	134.34	-53.17	-137.49	145.26	136.65	8.62	16.861		
1,680.00	1,647.82	1,681.79	1,667.93	6.10	4.37	135.57	-56.11	-146.04	148.79	139.85	8.94	16.646		
1,710.00	1,676.44	1,712.11	1,696.78	6.28	4.53	136.84	-59.16	-154.87	152.24	142.96	9.28	16.405		
1,740.00	1,705.06	1,742.39	1,725.49	6.47	4.71	138.15	-62.29	-163.97	155.63	145.99	9.64	16.141		
1,770.00	1,733.67	1,772.64	1,754.06	6.65	4.88	139.51	-65.53	-173.35	158.98	148.96	10.01	15.880		
1,800.00	1,762.29	1,802.83	1,782.48	6.83	5.06	140.90	-68.85	-183.00	162.29	151.90	10.39	15.621		
1,830.00	1,790.91	1,832.44	1,810.28	7.02	5.24	142.23	-72.17	-192.62	165.63	154.85	10.78	15.363		
1,860.00	1,819.53	1,861.98	1,838.02	7.21	5.43	143.49	-75.48	-202.23	169.07	157.89	11.18	15.125		
1,890.00	1,848.15	1,891.53	1,865.77	7.39	5.62	144.70	-78.79	-211.83	172.59	161.01	11.58	14.906		
1,920.00	1,876.77	1,921.08	1,893.52	7.58	5.81	145.86	-82.10	-221.43	176.20	164.22	11.98	14.703		
1,950.00	1,905.39	1,950.63	1,921.27	7.76	6.00	146.98	-85.41	-231.04	179.88	167.49	12.39	14.516		
1,980.00	1,934.01	1,980.18	1,949.01	7.95	6.19	148.04	-88.72	-240.64	183.64	170.84	12.80	14.346		
2,010.00	1,962.63	2,009.73	1,976.76	8.14	6.39	149.06	-92.03	-250.24	187.46	174.25	13.21	14.191		
2,040.00	1,991.25	2,039.28	2,004.51	8.32	6.59	150.04	-95.34	-259.85	191.35	177.73	13.62	14.047		
2,070.00	2,019.87	2,068.82	2,032.26	8.51	6.78	150.98	-98.65	-269.45	195.30	181.26	14.03	13.915		
2,100.00	2,048.49	2,098.37	2,060.00	8.70	6.98	151.88	-101.96	-279.06	199.30	184.85	14.45	13.795		
2,130.00	2,077.10	2,127.92	2,087.75	8.88	7.18	152.75	-105.27	-288.66	203.36	188.50	14.86	13.683		
2,160.00	2,105.72	2,157.47	2,115.50	9.07	7.38	153.58	-108.58	-298.26	207.47	192.19	15.28	13.581		
2,190.00	2,134.34	2,187.02	2,143.25	9.26	7.58	154.38	-111.89	-307.87	211.62	195.93	15.69	13.488		
2,220.00	2,162.96	2,216.57	2,171.00	9.45	7.78	155.14	-115.20	-317.47	215.82	199.72	16.10	13.402		
2,250.00	2,191.58	2,246.12	2,198.74	9.63	7.99	155.88	-118.51	-327.07	220.06	203.54	16.52	13.323		
2,280.00	2,220.20	2,275.67	2,226.49	9.82	8.19	156.59	-121.82	-336.68	224.34	207.41	16.93	13.250		
2,310.00	2,248.82	2,305.21	2,254.24	10.01	8.39	157.27	-125.13	-346.28	228.66	211.32	17.34	13.184		
2,340.00	2,277.44	2,334.76	2,281.99	10.20	8.60	157.93	-128.44	-355.89	233.02	215.26	17.76	13.123		
2,370.00	2,306.06	2,364.31	2,309.73	10.39	8.80	158.56	-131.75	-365.49	237.40	219.23	18.17	13.067		
2,400.00	2,334.68	2,393.86	2,337.48	10.57	9.01	159.17	-135.06	-375.09	241.82	223.24	18.58	13.015		
2,430.00	2,363.30	2,423.41	2,365.23	10.76	9.21	159.75	-138.37	-384.70	246.27	227.28	18.99	12.968		
2,460.00	2,391.92	2,452.96	2,392.98	10.95	9.42	160.32	-141.68	-394.30	250.75	231.35	19.40	12.924		
2,490.00	2,420.53	2,482.51	2,420.72	11.14	9.62	160.86	-144.99	-403.90	255.25	235.44	19.81	12.884		
2,520.00	2,449.15	2,512.05	2,448.47	11.33	9.83	161.39	-148.30	-413.51	259.78	239.56	20.22	12.848		
2,550.00	2,477.77	2,541.60	2,476.22	11.52	10.04	161.90	-151.61	-423.11	264.33	243.71	20.63	12.814		
2,580.00	2,506.39	2,571.15	2,503.97	11.71	10.25	162.39	-154.93	-432.72	268.91	247.87	21.04	12.783		
2,610.00	2,535.01	2,600.70	2,531.72	11.89	10.45	162.87	-158.24	-442.32	273.51	252.06	21.44	12.755		
2,640.00	2,563.63	2,630.25	2,559.46	12.08	10.66	163.33	-161.55	-451.92	278.13	256.28	21.85	12.729		
2,670.00	2,592.25	2,659.80	2,587.21	12.27	10.87	163.77	-164.86	-461.53	282.76	260.51	22.26	12.705		
2,700.00	2,620.87	2,689.35	2,614.96	12.46	11.08	164.20	-168.17	-471.13	287.42	264.76	22.66	12.684		
2,730.00	2,649.49	2,718.90	2,642.71	12.65	11.29	164.62	-171.48	-480.73	292.09	269.03	23.07	12.664		
2,760.00	2,678.11	2,748.44	2,670.45	12.84	11.50	165.02	-174.79	-490.34	296.79	273.32	23.47	12.646		
2,790.00	2,706.73	2,777.99	2,698.20	13.03	11.71	165.41	-178.10	-499.94	301.49	277.62	23.87	12.629		
2,820.00	2,735.34	2,807.54	2,725.95	13.22	11.91	165.79	-181.41	-509.55	306.22	281.94	24.28	12.614		
2,850.00	2,763.96	2,837.09	2,753.70	13.41	12.12	166.16	-184.72	-519.15	310.95	286.28	24.68	12.601		
2,880.00	2,792.58	2,866.64	2,781.45	13.60	12.33	166.52	-188.03	-528.75	315.71	290.63	25.08	12.588		
2,910.00	2,821.20	2,896.19	2,809.19	13.78	12.54	166.86	-191.34	-538.36	320.47	294.99	25.48	12.577		
2,940.00	2,849.82	2,925.74	2,836.94	13.97	12.75	167.20	-194.65	-547.96	325.25	299.37	25.88	12.567		
2,970.00	2,878.44	2,955.29	2,864.69	14.16	12.96	167.52	-197.96	-557.56	330.04	303.76	26.28	12.558		
3,000.00	2,907.06	2,984.83	2,892.44	14.35	13.17	167.84	-201.27	-567.17	334.84	308.16	26.68	12.550		
3,030.00	2,935.68	3,014.38	2,920.18	14.54	13.39	168.15	-204.58	-576.77	339.65	312.57	27.08	12.543		
3,060.00	2,964.30	3,043.93	2,947.93	14.73	13.60	168.45	-207.89	-586.38	344.48	317.00	27.48	12.536		

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

Company:	Piceance Energy, LLC	Local Co-ordinate Reference:	Well Gunderson 29-09M
Project:	Mesa County, CO	TVD Reference:	WELL @ 7560.00usft (Original Well Elev)
Reference Site:	Gunderson	MD Reference:	WELL @ 7560.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Gunderson 29-09M	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMDBBW
Reference Design:	Design #1	Offset TVD Reference:	Reference Datum

Offset Design Gunderson - Gunderson 29-12M - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
3,090.00	2,992.92	3,073.48	2,975.68	14.92	13.81	168.74	-211.20	-595.98	349.31	321.44	27.88	12.531		
3,120.00	3,021.54	3,103.03	3,003.43	15.11	14.02	169.02	-214.51	-605.58	354.16	325.88	28.27	12.526		
3,150.00	3,050.16	3,132.58	3,031.17	15.30	14.23	169.30	-217.82	-615.19	359.01	330.34	28.67	12.522		
3,180.00	3,078.77	3,162.13	3,058.92	15.49	14.44	169.57	-221.13	-624.79	363.87	334.80	29.07	12.518		
3,210.00	3,107.39	3,191.67	3,086.67	15.68	14.65	169.83	-224.44	-634.39	368.74	339.28	29.46	12.515		
3,240.00	3,136.01	3,221.22	3,114.42	15.87	14.86	170.08	-227.75	-644.00	373.62	343.76	29.86	12.512		
3,270.00	3,164.63	3,250.77	3,142.17	16.06	15.07	170.33	-231.06	-653.60	378.51	348.25	30.26	12.510		
3,300.00	3,193.25	3,280.32	3,169.91	16.25	15.29	170.57	-234.37	-663.21	383.41	352.76	30.65	12.509		
3,330.00	3,221.87	3,309.87	3,197.66	16.44	15.50	170.81	-237.68	-672.81	388.31	357.26	31.05	12.508		
3,360.00	3,250.49	3,339.42	3,225.41	16.63	15.71	171.04	-240.99	-682.41	393.22	361.78	31.44	12.507		
3,390.00	3,279.11	3,368.97	3,253.16	16.82	15.92	171.26	-244.30	-692.02	398.14	366.30	31.83	12.506		
3,420.00	3,307.73	3,398.52	3,280.90	17.01	16.13	171.48	-247.61	-701.62	403.06	370.83	32.23	12.506		
3,450.00	3,336.35	3,428.06	3,308.65	17.20	16.35	171.69	-250.92	-711.22	407.99	375.37	32.62	12.507		
3,480.00	3,364.97	3,457.61	3,336.40	17.39	16.56	171.90	-254.23	-720.83	412.93	379.91	33.02	12.507		
3,510.00	3,393.59	3,487.16	3,364.15	17.58	16.77	172.10	-257.54	-730.43	417.87	384.46	33.41	12.508		
3,540.00	3,422.20	3,516.71	3,391.89	17.77	16.98	172.30	-260.85	-740.04	422.82	389.02	33.80	12.509		
3,570.00	3,450.82	3,546.26	3,419.64	17.96	17.19	172.50	-264.16	-749.64	427.77	393.58	34.19	12.510		
3,600.00	3,479.44	3,575.81	3,447.39	18.15	17.41	172.69	-267.47	-759.24	432.73	398.15	34.59	12.512		
3,630.00	3,508.06	3,605.36	3,475.14	18.33	17.62	172.87	-270.78	-768.85	437.70	402.72	34.98	12.514		
3,660.00	3,536.68	3,634.90	3,502.89	18.52	17.83	173.05	-274.09	-778.45	442.67	407.30	35.37	12.516		
3,690.00	3,565.30	3,664.45	3,530.63	18.71	18.04	173.23	-277.40	-788.05	447.64	411.88	35.76	12.518		
3,720.00	3,593.92	3,694.00	3,558.38	18.90	18.26	173.41	-280.71	-797.66	452.62	416.47	36.15	12.520		
3,750.00	3,622.54	3,723.55	3,586.13	19.09	18.47	173.58	-284.02	-807.26	457.61	421.06	36.54	12.523		
3,780.00	3,651.16	3,753.10	3,613.88	19.28	18.68	173.74	-287.33	-816.87	462.59	425.66	36.93	12.525		
3,810.00	3,679.78	3,782.65	3,641.62	19.47	18.89	173.90	-290.64	-826.47	467.59	430.26	37.32	12.528		
3,840.00	3,708.40	3,812.20	3,669.37	19.66	19.11	174.06	-293.95	-836.07	472.58	434.87	37.71	12.531		
3,870.00	3,737.01	3,841.75	3,697.12	19.85	19.32	174.22	-297.27	-845.68	477.58	439.48	38.10	12.534		
3,900.00	3,765.63	3,871.29	3,724.87	20.04	19.53	174.37	-300.58	-855.28	482.59	444.09	38.49	12.537		
3,930.00	3,794.25	3,900.84	3,752.61	20.23	19.75	174.52	-303.89	-864.88	487.60	448.71	38.88	12.540		
3,960.00	3,822.87	3,930.39	3,780.36	20.42	19.96	174.67	-307.20	-874.49	492.61	453.34	39.27	12.543		
3,990.00	3,851.49	3,959.94	3,808.11	20.61	20.17	174.81	-310.51	-884.09	497.62	457.96	39.66	12.547		
4,020.00	3,880.11	3,989.49	3,835.86	20.80	20.38	174.95	-313.82	-893.70	502.64	462.59	40.05	12.550		
4,050.00	3,908.73	4,019.04	3,863.61	20.99	20.60	175.09	-317.13	-903.30	507.66	467.22	40.44	12.554		
4,080.00	3,937.35	4,048.59	3,891.35	21.18	20.81	175.23	-320.44	-912.90	512.69	471.86	40.83	12.557		
4,110.00	3,965.97	4,078.14	3,919.10	21.37	21.02	175.36	-323.75	-922.51	517.72	476.50	41.22	12.561		
4,140.00	3,994.59	4,107.68	3,946.85	21.56	21.24	175.49	-327.06	-932.11	522.75	481.14	41.61	12.565		
4,170.00	4,023.21	4,137.23	3,974.60	21.75	21.45	175.62	-330.37	-941.71	527.78	485.79	41.99	12.568		
4,200.00	4,051.83	4,166.78	4,002.34	21.94	21.66	175.74	-333.68	-951.32	532.82	490.44	42.38	12.572		
4,230.00	4,080.44	4,196.33	4,030.09	22.13	21.88	175.86	-336.99	-960.92	537.86	495.09	42.77	12.576		
4,260.00	4,109.06	4,225.88	4,057.84	22.33	22.09	175.99	-340.30	-970.53	542.90	499.75	43.16	12.580		
4,290.00	4,137.68	4,255.43	4,085.59	22.52	22.30	176.10	-343.61	-980.13	547.95	504.41	43.54	12.584		
4,320.00	4,166.30	4,284.98	4,113.33	22.71	22.52	176.22	-346.92	-989.73	553.00	509.07	43.93	12.588		
4,350.00	4,194.92	4,314.52	4,141.08	22.90	22.73	176.33	-350.23	-999.34	558.05	513.73	44.32	12.591		
4,380.00	4,223.54	4,344.07	4,168.83	23.09	22.94	176.45	-353.54	-1,008.94	563.10	518.39	44.71	12.595		
4,410.00	4,252.16	4,373.62	4,196.58	23.28	23.16	176.56	-356.85	-1,018.54	568.16	523.06	45.09	12.599		
4,440.00	4,280.78	4,403.17	4,224.33	23.47	23.37	176.67	-360.16	-1,028.15	573.21	527.73	45.48	12.603		
4,470.00	4,309.40	4,432.72	4,252.07	23.66	23.58	176.77	-363.47	-1,037.75	578.27	532.41	45.87	12.607		
4,500.00	4,338.02	4,462.27	4,279.82	23.85	23.80	176.88	-366.78	-1,047.36	583.34	537.08	46.25	12.612		
4,530.00	4,366.64	4,491.82	4,307.57	24.04	24.01	176.98	-370.09	-1,056.96	588.40	541.76	46.64	12.616		
4,560.00	4,395.26	4,521.37	4,335.32	24.23	24.23	177.08	-373.40	-1,066.56	593.47	546.44	47.03	12.620		
4,590.00	4,423.87	4,550.91	4,363.06	24.42	24.44	177.18	-376.71	-1,076.17	598.54	551.12	47.41	12.624		
4,620.00	4,452.49	4,580.46	4,390.81	24.61	24.65	177.28	-380.02	-1,085.77	603.61	555.81	47.80	12.628		

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

Company:	Piceance Energy, LLC	Local Co-ordinate Reference:	Well Gunderson 29-09M
Project:	Mesa County, CO	TVD Reference:	WELL @ 7560.00usft (Original Well Elev)
Reference Site:	Gunderson	MD Reference:	WELL @ 7560.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Gunderson 29-09M	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMDBBW
Reference Design:	Design #1	Offset TVD Reference:	Reference Datum

Offset Design Gunderson - Gunderson 29-12M - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
4,650.00	4,481.11	4,610.01	4,418.56	24.80	24.87	177.37	-383.33	-1,095.37	608.68	560.49	48.19	12.632		
4,680.00	4,509.73	4,639.56	4,446.31	24.99	25.08	177.47	-386.64	-1,104.98	613.75	565.18	48.57	12.636		
4,710.00	4,538.35	4,669.11	4,474.05	25.18	25.29	177.56	-389.95	-1,114.58	618.83	569.87	48.96	12.640		
4,740.00	4,566.97	4,698.66	4,501.80	25.37	25.51	177.65	-393.26	-1,124.19	623.91	574.56	49.34	12.644		
4,770.00	4,595.59	4,728.21	4,529.55	25.56	25.72	177.74	-396.57	-1,133.79	628.98	579.25	49.73	12.648		
4,800.00	4,624.21	4,757.75	4,557.30	25.75	25.93	177.83	-399.88	-1,143.39	634.07	583.95	50.12	12.652		
4,830.00	4,652.83	4,787.30	4,585.05	25.94	26.15	177.92	-403.19	-1,153.00	639.15	588.65	50.50	12.656		
4,860.00	4,681.45	4,816.85	4,612.79	26.13	26.36	178.00	-406.50	-1,162.60	644.23	593.35	50.89	12.660		
4,890.00	4,710.07	4,846.40	4,640.54	26.32	26.58	178.09	-409.81	-1,172.20	649.32	598.05	51.27	12.664		
4,920.00	4,738.68	4,875.95	4,668.29	26.51	26.79	178.17	-413.12	-1,181.81	654.41	602.75	51.66	12.668		
4,950.00	4,767.30	4,905.50	4,696.04	26.70	27.00	178.25	-416.43	-1,191.41	659.50	607.45	52.04	12.672		
4,980.00	4,795.92	4,935.05	4,723.78	26.89	27.22	178.34	-419.74	-1,201.02	664.59	612.16	52.43	12.676		
5,010.00	4,824.54	4,965.14	4,752.05	27.08	27.43	178.43	-423.11	-1,210.79	669.67	616.86	52.81	12.681		
5,040.00	4,853.16	4,997.09	4,782.14	27.27	27.63	178.55	-426.61	-1,220.94	674.69	621.51	53.19	12.686		
5,070.00	4,881.79	5,029.09	4,812.39	27.45	27.80	178.65	-430.01	-1,230.79	679.60	626.07	53.53	12.696		
5,100.00	4,910.49	5,061.14	4,842.82	27.62	27.96	178.75	-433.30	-1,240.34	684.36	630.50	53.86	12.706		
5,130.00	4,939.28	5,093.25	4,873.39	27.75	28.13	178.84	-436.48	-1,249.57	688.96	634.79	54.16	12.720		
5,160.00	4,968.16	5,125.40	4,904.13	27.89	28.28	178.92	-439.56	-1,258.50	693.39	638.94	54.45	12.733		
5,190.00	4,997.12	5,157.60	4,935.01	28.02	28.43	179.01	-442.53	-1,267.11	697.66	642.92	54.74	12.745		
5,220.00	5,026.16	5,189.84	4,966.04	28.15	28.58	179.09	-445.38	-1,275.41	701.77	646.75	55.02	12.755		
5,250.00	5,055.28	5,222.13	4,997.20	28.27	28.72	179.17	-448.13	-1,283.38	705.72	650.44	55.28	12.766		
5,280.00	5,084.47	5,254.46	5,028.50	28.39	28.86	179.24	-450.77	-1,291.03	709.50	653.96	55.54	12.775		
5,310.00	5,113.73	5,286.83	5,059.93	28.50	28.99	179.31	-453.30	-1,298.36	713.11	657.32	55.79	12.782		
5,340.00	5,143.06	5,319.24	5,091.49	28.61	29.12	179.38	-455.71	-1,305.36	716.56	660.54	56.02	12.791		
5,370.00	5,172.46	5,351.68	5,123.16	28.71	29.23	179.45	-458.01	-1,312.02	719.84	663.59	56.25	12.798		
5,400.00	5,201.92	5,384.17	5,154.94	28.82	29.35	179.51	-460.19	-1,318.36	722.95	666.48	56.47	12.801		
5,430.00	5,231.43	5,416.68	5,186.83	28.91	29.46	179.57	-462.26	-1,324.36	725.90	669.22	56.68	12.808		
5,460.00	5,261.00	5,449.23	5,218.83	29.00	29.57	179.63	-464.21	-1,330.02	728.68	671.80	56.87	12.812		
5,490.00	5,290.62	5,481.81	5,250.92	29.09	29.67	179.68	-466.04	-1,335.34	731.28	674.22	57.07	12.814		
5,520.00	5,320.29	5,514.42	5,283.09	29.17	29.76	179.73	-467.76	-1,340.33	733.72	676.48	57.25	12.817		
5,550.00	5,350.00	5,547.05	5,315.36	29.24	29.85	179.77	-469.36	-1,344.97	735.99	678.58	57.41	12.820		
5,580.00	5,379.76	5,579.71	5,347.70	29.32	29.94	179.82	-470.84	-1,349.26	738.09	680.52	57.58	12.820		
5,610.00	5,409.55	5,612.40	5,380.11	29.39	30.02	179.86	-472.20	-1,353.21	740.02	682.29	57.73	12.819		
5,640.00	5,439.38	5,645.10	5,412.59	29.45	30.09	179.89	-473.44	-1,356.81	741.78	683.91	57.86	12.819		
5,670.00	5,469.24	5,677.82	5,445.14	29.51	30.16	179.93	-474.56	-1,360.06	743.36	685.36	58.00	12.817		
5,700.00	5,499.13	5,710.56	5,477.73	29.57	30.23	179.96	-475.56	-1,362.96	744.78	686.65	58.13	12.813		
5,730.00	5,529.04	5,743.32	5,510.38	29.61	30.28	179.98	-476.44	-1,365.52	746.02	687.79	58.23	12.811		
5,760.00	5,558.98	5,776.09	5,543.06	29.66	30.34	-180.00	-477.20	-1,367.71	747.09	688.75	58.34	12.807		
5,790.00	5,588.94	5,808.87	5,575.78	29.71	30.39	-179.98	-477.84	-1,369.56	747.99	689.55	58.44	12.800		
5,820.00	5,618.91	5,841.66	5,608.53	29.74	30.43	-179.96	-478.35	-1,371.05	748.71	690.20	58.52	12.795		
5,850.00	5,648.89	5,874.45	5,641.31	29.78	30.47	-179.95	-478.74	-1,372.19	749.27	690.67	58.59	12.788		
5,880.00	5,678.88	5,907.26	5,674.10	29.81	30.51	-179.94	-479.01	-1,372.97	749.65	690.98	58.67	12.778		
5,910.00	5,708.88	5,940.06	5,706.90	29.84	30.54	-179.94	-479.16	-1,373.40	749.86	691.13	58.73	12.769		
5,940.00	5,738.88	5,972.04	5,738.88	29.87	30.57	-179.94	-479.19	-1,373.49	749.90	691.12	58.78	12.758		
5,970.00	5,768.88	6,002.04	5,768.88	29.89	30.59	-179.94	-479.19	-1,373.49	749.90	691.07	58.83	12.746		
6,000.00	5,798.88	6,032.04	5,798.88	29.92	30.62	-179.94	-479.19	-1,373.49	749.90	691.01	58.88	12.735		
6,030.00	5,828.88	6,062.04	5,828.88	29.94	30.64	-179.94	-479.19	-1,373.49	749.90	690.96	58.94	12.723		
6,060.00	5,858.88	6,092.04	5,858.88	29.97	30.67	-179.94	-479.19	-1,373.49	749.90	690.90	58.99	12.711		
6,090.00	5,888.88	6,122.04	5,888.88	30.00	30.69	-179.94	-479.19	-1,373.49	749.90	690.85	59.05	12.700		
6,120.00	5,918.88	6,152.04	5,918.88	30.03	30.72	-179.94	-479.19	-1,373.49	749.90	690.79	59.10	12.688		
6,150.00	5,948.88	6,182.04	5,948.88	30.06	30.75	-179.94	-479.19	-1,373.49	749.90	690.74	59.16	12.676		
6,180.00	5,978.88	6,212.04	5,978.88	30.08	30.77	-179.94	-479.19	-1,373.49	749.90	690.68	59.22	12.664		

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

Company:	Piceance Energy, LLC	Local Co-ordinate Reference:	Well Gunderson 29-09M
Project:	Mesa County, CO	TVD Reference:	WELL @ 7560.00usft (Original Well Elev)
Reference Site:	Gunderson	MD Reference:	WELL @ 7560.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Gunderson 29-09M	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMDBBW
Reference Design:	Design #1	Offset TVD Reference:	Reference Datum

Offset Design Gunderson - Gunderson 29-12M - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
6,210.00	6,008.88	6,242.04	6,008.88	30.11	30.80	-179.94	-479.19	-1,373.49	749.90	690.63	59.27	12.652		
6,240.00	6,038.88	6,272.04	6,038.88	30.14	30.83	-179.94	-479.19	-1,373.49	749.90	690.57	59.33	12.640		
6,270.00	6,068.88	6,302.04	6,068.88	30.17	30.85	-179.94	-479.19	-1,373.49	749.90	690.51	59.39	12.627		
6,300.00	6,098.88	6,332.04	6,098.88	30.20	30.88	-179.94	-479.19	-1,373.49	749.90	690.46	59.44	12.615		
6,330.00	6,128.88	6,362.04	6,128.88	30.23	30.91	-179.94	-479.19	-1,373.49	749.90	690.40	59.50	12.603		
6,360.00	6,158.88	6,392.04	6,158.88	30.26	30.93	-179.94	-479.19	-1,373.49	749.90	690.34	59.56	12.591		
6,390.00	6,188.88	6,422.04	6,188.88	30.28	30.96	-179.94	-479.19	-1,373.49	749.90	690.28	59.62	12.579		
6,420.00	6,218.88	6,452.04	6,218.88	30.31	30.99	-179.94	-479.19	-1,373.49	749.90	690.22	59.67	12.567		
6,450.00	6,248.88	6,482.04	6,248.88	30.34	31.01	-179.94	-479.19	-1,373.49	749.90	690.17	59.73	12.554		
6,480.00	6,278.88	6,512.04	6,278.88	30.37	31.04	-179.94	-479.19	-1,373.49	749.90	690.11	59.79	12.542		
6,510.00	6,308.88	6,542.04	6,308.88	30.40	31.07	-179.94	-479.19	-1,373.49	749.90	690.05	59.85	12.530		
6,540.00	6,338.88	6,572.04	6,338.88	30.43	31.10	-179.94	-479.19	-1,373.49	749.90	689.99	59.91	12.517		
6,570.00	6,368.88	6,602.04	6,368.88	30.46	31.12	-179.94	-479.19	-1,373.49	749.90	689.93	59.97	12.505		
6,600.00	6,398.88	6,632.04	6,398.88	30.49	31.15	-179.94	-479.19	-1,373.49	749.90	689.87	60.03	12.493		
6,630.00	6,428.88	6,662.04	6,428.88	30.52	31.18	-179.94	-479.19	-1,373.49	749.90	689.81	60.09	12.480		
6,660.00	6,458.88	6,692.04	6,458.88	30.55	31.21	-179.94	-479.19	-1,373.49	749.90	689.75	60.15	12.468		
6,690.00	6,488.88	6,722.04	6,488.88	30.58	31.24	-179.94	-479.19	-1,373.49	749.90	689.69	60.21	12.455		
6,720.00	6,518.88	6,752.04	6,518.88	30.61	31.27	-179.94	-479.19	-1,373.49	749.90	689.63	60.27	12.443		
6,750.00	6,548.88	6,782.04	6,548.88	30.64	31.29	-179.94	-479.19	-1,373.49	749.90	689.57	60.33	12.430		
6,780.00	6,578.88	6,812.04	6,578.88	30.67	31.32	-179.94	-479.19	-1,373.49	749.90	689.51	60.39	12.418		
6,810.00	6,608.88	6,842.04	6,608.88	30.70	31.35	-179.94	-479.19	-1,373.49	749.90	689.45	60.45	12.405		
6,840.00	6,638.88	6,872.04	6,638.88	30.74	31.38	-179.94	-479.19	-1,373.49	749.90	689.39	60.51	12.392		
6,870.00	6,668.88	6,902.04	6,668.88	30.77	31.41	-179.94	-479.19	-1,373.49	749.90	689.32	60.57	12.380		
6,900.00	6,698.88	6,932.04	6,698.88	30.80	31.44	-179.94	-479.19	-1,373.49	749.90	689.26	60.64	12.367		
6,930.00	6,728.88	6,962.04	6,728.88	30.83	31.47	-179.94	-479.19	-1,373.49	749.90	689.20	60.70	12.355		
6,960.00	6,758.88	6,992.04	6,758.88	30.86	31.50	-179.94	-479.19	-1,373.49	749.90	689.14	60.76	12.342		
6,990.00	6,788.88	7,022.04	6,788.88	30.89	31.53	-179.94	-479.19	-1,373.49	749.90	689.08	60.82	12.329		
7,020.00	6,818.88	7,052.04	6,818.88	30.92	31.56	-179.94	-479.19	-1,373.49	749.90	689.01	60.89	12.316		
7,050.00	6,848.88	7,082.04	6,848.88	30.95	31.59	-179.94	-479.19	-1,373.49	749.90	688.95	60.95	12.304		
7,080.00	6,878.88	7,112.04	6,878.88	30.99	31.62	-179.94	-479.19	-1,373.49	749.90	688.89	61.01	12.291		
7,110.00	6,908.88	7,142.04	6,908.88	31.02	31.65	-179.94	-479.19	-1,373.49	749.90	688.82	61.08	12.278		
7,140.00	6,938.88	7,172.04	6,938.88	31.05	31.68	-179.94	-479.19	-1,373.49	749.90	688.76	61.14	12.265		
7,170.00	6,968.88	7,202.04	6,968.88	31.08	31.71	-179.94	-479.19	-1,373.49	749.90	688.69	61.20	12.252		
7,200.00	6,998.88	7,232.04	6,998.88	31.11	31.74	-179.94	-479.19	-1,373.49	749.90	688.63	61.27	12.240		
7,230.00	7,028.88	7,262.04	7,028.88	31.15	31.77	-179.94	-479.19	-1,373.49	749.90	688.57	61.33	12.227		
7,260.00	7,058.88	7,292.04	7,058.88	31.18	31.80	-179.94	-479.19	-1,373.49	749.90	688.50	61.40	12.214		
7,290.00	7,088.88	7,322.04	7,088.88	31.21	31.83	-179.94	-479.19	-1,373.49	749.90	688.44	61.46	12.201		
7,320.00	7,118.88	7,352.04	7,118.88	31.24	31.86	-179.94	-479.19	-1,373.49	749.90	688.37	61.53	12.188		
7,350.00	7,148.88	7,382.04	7,148.88	31.28	31.89	-179.94	-479.19	-1,373.49	749.90	688.31	61.59	12.175		
7,380.00	7,178.88	7,412.04	7,178.88	31.31	31.92	-179.94	-479.19	-1,373.49	749.90	688.24	61.66	12.162		
7,410.00	7,208.88	7,442.04	7,208.88	31.34	31.95	-179.94	-479.19	-1,373.49	749.90	688.17	61.72	12.149		
7,440.00	7,238.88	7,472.04	7,238.88	31.38	31.98	-179.94	-479.19	-1,373.49	749.90	688.11	61.79	12.136		
7,470.00	7,268.88	7,502.04	7,268.88	31.41	32.01	-179.94	-479.19	-1,373.49	749.90	688.04	61.86	12.123		
7,500.00	7,298.88	7,532.04	7,298.88	31.44	32.04	-179.94	-479.19	-1,373.49	749.90	687.98	61.92	12.110		
7,530.00	7,328.88	7,562.04	7,328.88	31.48	32.08	-179.94	-479.19	-1,373.49	749.90	687.91	61.99	12.097		
7,560.00	7,358.88	7,592.04	7,358.88	31.51	32.11	-179.94	-479.19	-1,373.49	749.90	687.84	62.06	12.084		
7,590.00	7,388.88	7,622.04	7,388.88	31.54	32.14	-179.94	-479.19	-1,373.49	749.90	687.77	62.12	12.071		
7,620.00	7,418.88	7,652.04	7,418.88	31.58	32.17	-179.94	-479.19	-1,373.49	749.90	687.71	62.19	12.058		
7,650.00	7,448.88	7,682.04	7,448.88	31.61	32.20	-179.94	-479.19	-1,373.49	749.90	687.64	62.26	12.045		
7,680.00	7,478.88	7,712.04	7,478.88	31.65	32.24	-179.94	-479.19	-1,373.49	749.90	687.57	62.33	12.032		
7,710.00	7,508.88	7,742.04	7,508.88	31.68	32.27	-179.94	-479.19	-1,373.49	749.90	687.50	62.40	12.019		
7,740.00	7,538.88	7,772.04	7,538.88	31.71	32.30	-179.94	-479.19	-1,373.49	749.90	687.44	62.46	12.005		

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

Company:	Piceance Energy, LLC	Local Co-ordinate Reference:	Well Gunderson 29-09M
Project:	Mesa County, CO	TVD Reference:	WELL @ 7560.00usft (Original Well Elev)
Reference Site:	Gunderson	MD Reference:	WELL @ 7560.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Gunderson 29-09M	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMDBBW
Reference Design:	Design #1	Offset TVD Reference:	Reference Datum

Offset Design Gunderson - Gunderson 29-12M - Wellbore #1 - Design #1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
7,770.00	7,568.88	7,802.04	7,568.88	31.75	32.33	-179.94	-479.19	-1,373.49	749.90	687.37	62.53	11.992	
7,800.00	7,598.88	7,832.04	7,598.88	31.78	32.37	-179.94	-479.19	-1,373.49	749.90	687.30	62.60	11.979	
7,830.00	7,628.88	7,862.04	7,628.88	31.82	32.40	-179.94	-479.19	-1,373.49	749.90	687.23	62.67	11.966	
7,860.00	7,658.88	7,892.04	7,658.88	31.85	32.43	-179.94	-479.19	-1,373.49	749.90	687.16	62.74	11.953	
7,881.12	7,680.00	7,913.16	7,680.00	31.88	32.45	-179.94	-479.19	-1,373.49	749.90	687.11	62.79	11.943	

Company:	Piceance Energy, LLC	Local Co-ordinate Reference:	Well Gunderson 29-09M
Project:	Mesa County, CO	TVD Reference:	WELL @ 7560.00usft (Original Well Elev)
Reference Site:	Gunderson	MD Reference:	WELL @ 7560.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Gunderson 29-09M	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMDBBW
Reference Design:	Design #1	Offset TVD Reference:	Reference Datum

Offset Design Gunderson - Gunderson 29-13M - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	173.50	-9.94	1.13	10.01					
30.00	30.00	30.00	30.00	0.01	0.03	173.50	-9.94	1.13	10.01	9.98	0.03	309.193		
60.00	60.00	60.00	60.00	0.04	0.05	173.50	-9.94	1.13	10.01	9.92	0.09	109.127		
90.00	90.00	90.00	90.00	0.07	0.08	173.50	-9.94	1.13	10.01	9.86	0.15	66.256		
120.00	120.00	120.00	120.00	0.13	0.13	173.50	-9.94	1.13	10.01	9.75	0.26	38.383		
150.00	150.00	150.00	150.00	0.20	0.20	173.50	-9.94	1.13	10.01	9.61	0.40	25.298		
180.00	180.00	180.00	180.00	0.27	0.27	173.50	-9.94	1.13	10.01	9.48	0.53	18.866		
210.00	210.00	210.00	210.00	0.33	0.33	173.50	-9.94	1.13	10.01	9.34	0.67	15.042		
240.00	240.00	240.00	240.00	0.40	0.40	173.50	-9.94	1.13	10.01	9.21	0.80	12.507		
270.00	270.00	270.00	270.00	0.47	0.47	173.50	-9.94	1.13	10.01	9.07	0.94	10.703		
300.00	300.00	300.00	300.00	0.53	0.53	173.50	-9.94	1.13	10.01	8.94	1.07	9.354		
330.00	330.00	330.00	330.00	0.60	0.60	173.50	-9.94	1.13	10.01	8.80	1.20	8.307		
360.00	360.00	360.00	360.00	0.67	0.67	173.50	-9.94	1.13	10.01	8.67	1.34	7.470		
390.00	390.00	390.00	390.00	0.74	0.74	173.50	-9.94	1.13	10.01	8.53	1.47	6.787 CC		
390.05	390.05	390.05	390.05	0.74	0.74	173.50	-9.94	1.13	10.01	8.53	1.47	6.786		
420.00	420.00	420.00	420.00	0.80	0.80	173.12	-9.94	1.13	10.03	8.42	1.61	6.239		
450.00	450.00	450.00	450.00	0.87	0.87	171.15	-9.94	1.13	10.15	8.41	1.74	5.833 ES		
480.00	479.99	479.99	479.99	0.93	0.94	167.63	-9.94	1.13	10.40	8.53	1.87	5.556		
510.00	509.97	509.97	509.97	1.00	1.01	162.80	-9.94	1.13	10.84	8.83	2.00	5.405		
540.00	539.94	539.94	539.94	1.06	1.07	157.06	-9.94	1.13	11.52	9.38	2.14	5.386 SF		
570.00	569.90	569.90	569.90	1.13	1.14	150.89	-9.94	1.13	12.50	10.23	2.27	5.503		
600.00	599.84	599.84	599.84	1.19	1.21	144.76	-9.94	1.13	13.83	11.42	2.40	5.754		
630.00	629.75	629.75	629.75	1.27	1.28	139.03	-9.94	1.13	15.53	12.99	2.54	6.117		
660.00	659.64	659.64	659.64	1.34	1.34	133.91	-9.94	1.13	17.63	14.95	2.67	6.590		
690.00	689.50	689.50	689.50	1.41	1.41	129.47	-9.94	1.13	20.11	17.30	2.81	7.158		
720.00	719.33	719.33	719.33	1.49	1.48	125.69	-9.94	1.13	22.96	20.02	2.94	7.797		
750.00	749.13	749.13	749.13	1.57	1.54	122.51	-9.94	1.13	26.19	23.11	3.08	8.501		
780.00	778.89	778.89	778.89	1.65	1.61	119.84	-9.94	1.13	29.77	26.56	3.21	9.261		
810.00	808.60	808.66	808.66	1.74	1.68	117.61	-9.95	1.12	33.69	30.35	3.35	10.067		
840.00	838.27	838.58	838.57	1.83	1.74	116.01	-10.06	0.90	37.82	34.34	3.48	10.877		
870.00	867.89	868.51	868.51	1.92	1.80	114.97	-10.32	0.41	42.09	38.48	3.61	11.671		
900.00	897.47	898.47	898.45	2.02	1.86	114.34	-10.73	-0.37	46.47	42.74	3.73	12.450		
930.00	926.98	928.44	928.40	2.12	1.92	114.01	-11.28	-1.42	50.97	47.11	3.86	13.202		
960.00	956.44	958.43	958.35	2.23	1.98	113.93	-11.97	-2.75	55.59	51.60	3.99	13.938		
990.00	985.84	988.44	988.30	2.34	2.04	114.02	-12.81	-4.36	60.31	56.19	4.11	14.659		
1,020.00	1,015.17	1,018.45	1,018.24	2.46	2.10	114.26	-13.80	-6.24	65.14	60.89	4.25	15.339		
1,050.00	1,044.44	1,048.48	1,048.17	2.59	2.16	114.61	-14.93	-8.41	70.08	65.70	4.38	15.993		
1,080.00	1,073.63	1,078.51	1,078.07	2.71	2.23	115.05	-16.21	-10.85	75.14	70.62	4.52	16.632		
1,110.00	1,102.75	1,108.54	1,107.95	2.85	2.29	115.56	-17.64	-13.58	80.31	75.65	4.66	17.243		
1,140.00	1,131.80	1,138.58	1,137.80	2.99	2.37	116.12	-19.21	-16.58	85.60	80.80	4.81	17.810		
1,170.00	1,160.76	1,168.62	1,167.61	3.14	2.44	116.73	-20.92	-19.85	91.02	86.06	4.96	18.366		
1,200.00	1,189.64	1,198.66	1,197.38	3.28	2.51	117.37	-22.78	-23.41	96.56	91.45	5.11	18.911		
1,230.00	1,218.44	1,228.70	1,227.10	3.44	2.59	118.04	-24.78	-27.24	102.23	96.96	5.27	19.395		
1,260.00	1,247.14	1,258.73	1,256.77	3.61	2.68	118.73	-26.93	-31.34	108.03	102.59	5.44	19.867		
1,290.00	1,275.77	1,288.76	1,286.40	3.77	2.76	119.44	-29.22	-35.72	113.92	108.31	5.61	20.299		
1,320.00	1,304.39	1,318.84	1,316.00	3.95	2.85	120.21	-31.66	-40.38	119.68	113.87	5.80	20.623		
1,350.00	1,333.01	1,348.95	1,345.59	4.12	2.95	121.03	-34.25	-45.33	125.29	119.29	6.00	20.878		
1,380.00	1,361.63	1,379.09	1,375.15	4.30	3.05	121.90	-36.98	-50.55	130.77	124.57	6.20	21.081		
1,410.00	1,390.25	1,409.25	1,404.67	4.47	3.15	122.81	-39.86	-56.06	136.11	129.70	6.42	21.212		
1,440.00	1,418.86	1,439.43	1,434.14	4.65	3.26	123.77	-42.88	-61.84	141.34	134.69	6.64	21.272		
1,470.00	1,447.48	1,469.63	1,463.55	4.83	3.38	124.78	-46.05	-67.90	146.44	139.57	6.87	21.303		
1,500.00	1,476.10	1,499.82	1,492.88	5.01	3.49	125.81	-49.37	-74.23	151.45	144.33	7.12	21.275		

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

Company:	Piceance Energy, LLC	Local Co-ordinate Reference:	Well Gunderson 29-09M
Project:	Mesa County, CO	TVD Reference:	WELL @ 7560.00usft (Original Well Elev)
Reference Site:	Gunderson	MD Reference:	WELL @ 7560.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Gunderson 29-09M	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMDBBW
Reference Design:	Design #1	Offset TVD Reference:	Reference Datum

Offset Design Gunderson - Gunderson 29-13M - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
1,530.00	1,504.72	1,530.02	1,522.14	5.19	3.62	126.89	-52.82	-80.84	156.36	148.98	7.38	21.184		
1,560.00	1,533.34	1,560.20	1,551.31	5.37	3.75	128.00	-56.42	-87.72	161.18	153.53	7.65	21.065		
1,590.00	1,561.96	1,590.37	1,580.39	5.55	3.89	129.14	-60.16	-94.87	165.93	158.00	7.93	20.923		
1,620.00	1,590.58	1,620.52	1,609.35	5.73	4.03	130.31	-64.04	-102.28	170.62	162.39	8.23	20.736		
1,650.00	1,619.20	1,650.64	1,638.20	5.92	4.19	131.51	-68.05	-109.95	175.26	166.72	8.54	20.524		
1,680.00	1,647.82	1,680.72	1,666.91	6.10	4.34	132.73	-72.20	-117.88	179.86	171.00	8.86	20.303		
1,710.00	1,676.44	1,710.76	1,695.50	6.28	4.50	133.98	-76.48	-126.07	184.43	175.23	9.19	20.062		
1,740.00	1,705.06	1,740.75	1,723.94	6.47	4.67	135.25	-80.90	-134.51	188.98	179.44	9.55	19.794		
1,770.00	1,733.67	1,770.69	1,752.22	6.65	4.84	136.53	-85.44	-143.20	193.54	183.63	9.91	19.536		
1,800.00	1,762.29	1,800.56	1,780.35	6.83	5.02	137.84	-90.11	-152.13	198.11	187.83	10.27	19.283		
1,830.00	1,790.91	1,830.37	1,808.30	7.02	5.21	139.15	-94.91	-161.29	202.70	192.03	10.67	19.005		
1,860.00	1,819.53	1,860.10	1,836.07	7.21	5.41	140.48	-99.83	-170.69	207.33	196.26	11.07	18.733		
1,890.00	1,848.15	1,889.75	1,863.66	7.39	5.60	141.82	-104.86	-180.32	212.01	200.54	11.48	18.473		
1,920.00	1,876.77	1,919.18	1,890.93	7.58	5.80	143.14	-109.98	-190.11	216.77	204.87	11.89	18.225		
1,950.00	1,905.39	1,948.33	1,917.93	7.76	6.00	144.39	-115.08	-199.86	221.63	209.31	12.32	17.993		
1,980.00	1,934.01	1,977.48	1,944.92	7.95	6.21	145.59	-120.18	-209.61	226.61	213.87	12.74	17.786		
2,010.00	1,962.63	2,006.63	1,971.92	8.14	6.41	146.74	-125.28	-219.36	231.70	218.54	13.17	17.599		
2,040.00	1,991.25	2,035.78	1,998.91	8.32	6.62	147.83	-130.38	-229.10	236.90	223.31	13.59	17.428		
2,070.00	2,019.87	2,064.93	2,025.91	8.51	6.83	148.88	-135.48	-238.85	242.19	228.17	14.02	17.275		
2,100.00	2,048.49	2,094.08	2,052.90	8.70	7.05	149.88	-140.58	-248.60	247.57	233.13	14.45	17.139		
2,130.00	2,077.10	2,123.23	2,079.90	8.88	7.26	150.83	-145.68	-258.35	253.04	238.16	14.87	17.014		
2,160.00	2,105.72	2,152.38	2,106.89	9.07	7.47	151.75	-150.78	-268.10	258.58	243.28	15.30	16.902		
2,190.00	2,134.34	2,181.53	2,133.88	9.26	7.69	152.63	-155.88	-277.84	264.20	248.48	15.72	16.803		
2,220.00	2,162.96	2,210.68	2,160.88	9.45	7.90	153.47	-160.98	-287.59	269.89	253.74	16.15	16.714		
2,250.00	2,191.58	2,239.83	2,187.87	9.63	8.12	154.28	-166.07	-297.34	275.64	259.07	16.57	16.633		
2,280.00	2,220.20	2,268.98	2,214.87	9.82	8.34	155.05	-171.17	-307.09	281.45	264.46	16.99	16.562		
2,310.00	2,248.82	2,298.13	2,241.86	10.01	8.56	155.79	-176.27	-316.84	287.32	269.91	17.41	16.499		
2,340.00	2,277.44	2,327.28	2,268.86	10.20	8.78	156.51	-181.37	-326.58	293.25	275.41	17.84	16.442		
2,370.00	2,306.06	2,356.43	2,295.85	10.39	9.00	157.19	-186.47	-336.33	299.22	280.97	18.26	16.391		
2,400.00	2,334.68	2,385.58	2,322.84	10.57	9.21	157.85	-191.57	-346.08	305.25	286.57	18.67	16.347		
2,430.00	2,363.30	2,414.73	2,349.84	10.76	9.44	158.48	-196.67	-355.83	311.32	292.23	19.09	16.308		
2,460.00	2,391.92	2,443.88	2,376.83	10.95	9.66	159.09	-201.77	-365.58	317.43	297.92	19.51	16.273		
2,490.00	2,420.53	2,473.03	2,403.83	11.14	9.88	159.67	-206.87	-375.33	323.58	303.66	19.92	16.243		
2,520.00	2,449.15	2,502.18	2,430.82	11.33	10.10	160.24	-211.97	-385.07	329.77	309.43	20.33	16.218		
2,550.00	2,477.77	2,531.33	2,457.82	11.52	10.32	160.78	-217.07	-394.82	335.99	315.24	20.75	16.195		
2,580.00	2,506.39	2,560.48	2,484.81	11.71	10.55	161.30	-222.17	-404.57	342.25	321.09	21.16	16.176		
2,610.00	2,535.01	2,589.63	2,511.81	11.89	10.77	161.81	-227.27	-414.32	348.54	326.97	21.57	16.160		
2,640.00	2,563.63	2,618.78	2,538.80	12.08	10.99	162.30	-232.37	-424.07	354.86	332.88	21.98	16.146		
2,670.00	2,592.25	2,647.93	2,565.79	12.27	11.22	162.77	-237.46	-433.81	361.20	338.82	22.39	16.135		
2,700.00	2,620.87	2,677.08	2,592.79	12.46	11.44	163.22	-242.56	-443.56	367.58	344.79	22.79	16.127		
2,730.00	2,649.49	2,706.23	2,619.78	12.65	11.66	163.66	-247.66	-453.31	373.98	350.78	23.20	16.120		
2,760.00	2,678.11	2,735.38	2,646.78	12.84	11.89	164.08	-252.76	-463.06	380.41	356.80	23.61	16.115		
2,790.00	2,706.73	2,764.53	2,673.77	13.03	12.11	164.50	-257.86	-472.81	386.86	362.85	24.01	16.112		
2,820.00	2,735.34	2,793.68	2,700.77	13.22	12.34	164.89	-262.96	-482.55	393.33	368.91	24.41	16.111		
2,850.00	2,763.96	2,822.83	2,727.76	13.41	12.56	165.28	-268.06	-492.30	399.82	375.00	24.82	16.111		
2,880.00	2,792.58	2,851.98	2,754.76	13.60	12.79	165.65	-273.16	-502.05	406.33	381.11	25.22	16.112		
2,910.00	2,821.20	2,881.13	2,781.75	13.78	13.01	166.01	-278.26	-511.80	412.86	387.24	25.62	16.114		
2,940.00	2,849.82	2,910.28	2,808.74	13.97	13.24	166.36	-283.36	-521.55	419.41	393.39	26.02	16.118		
2,970.00	2,878.44	2,939.43	2,835.74	14.16	13.47	166.70	-288.46	-531.30	425.98	399.56	26.42	16.122		
3,000.00	2,907.06	2,968.58	2,862.73	14.35	13.69	167.03	-293.56	-541.04	432.56	405.74	26.82	16.127		
3,030.00	2,935.68	2,997.73	2,889.73	14.54	13.92	167.35	-298.66	-550.79	439.16	411.94	27.22	16.134		
3,060.00	2,964.30	3,026.88	2,916.72	14.73	14.15	167.66	-303.75	-560.54	445.77	418.16	27.62	16.140		

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

Company:	Piceance Energy, LLC	Local Co-ordinate Reference:	Well Gunderson 29-09M
Project:	Mesa County, CO	TVD Reference:	WELL @ 7560.00usft (Original Well Elev)
Reference Site:	Gunderson	MD Reference:	WELL @ 7560.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Gunderson 29-09M	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMDBBW
Reference Design:	Design #1	Offset TVD Reference:	Reference Datum

Offset Design Gunderson - Gunderson 29-13M - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
3,090.00	2,992.92	3,056.03	2,943.72	14.92	14.37	167.96	-308.85	-570.29	452.40	424.39	28.02	16.148		
3,120.00	3,021.54	3,085.18	2,970.71	15.11	14.60	168.25	-313.95	-580.04	459.05	430.63	28.41	16.156		
3,150.00	3,050.16	3,114.33	2,997.70	15.30	14.83	168.53	-319.05	-589.78	465.70	436.89	28.81	16.165		
3,180.00	3,078.77	3,143.48	3,024.70	15.49	15.05	168.81	-324.15	-599.53	472.37	443.16	29.21	16.174		
3,210.00	3,107.39	3,172.63	3,051.69	15.68	15.28	169.08	-329.25	-609.28	479.05	449.45	29.60	16.184		
3,240.00	3,136.01	3,201.78	3,078.69	15.87	15.51	169.34	-334.35	-619.03	485.74	455.75	30.00	16.194		
3,270.00	3,164.63	3,230.93	3,105.68	16.06	15.73	169.60	-339.45	-628.78	492.44	462.05	30.39	16.204		
3,300.00	3,193.25	3,260.08	3,132.68	16.25	15.96	169.84	-344.55	-638.52	499.16	468.37	30.78	16.215		
3,330.00	3,221.87	3,289.23	3,159.67	16.44	16.19	170.08	-349.65	-648.27	505.88	474.70	31.18	16.226		
3,360.00	3,250.49	3,318.38	3,186.67	16.63	16.42	170.32	-354.75	-658.02	512.62	481.05	31.57	16.237		
3,390.00	3,279.11	3,347.53	3,213.66	16.82	16.64	170.55	-359.85	-667.77	519.36	487.40	31.96	16.249		
3,420.00	3,307.73	3,376.68	3,240.65	17.01	16.87	170.77	-364.95	-677.52	526.11	493.76	32.36	16.260		
3,450.00	3,336.35	3,405.83	3,267.65	17.20	17.10	170.99	-370.05	-687.27	532.87	500.13	32.75	16.272		
3,480.00	3,364.97	3,434.98	3,294.64	17.39	17.33	171.20	-375.14	-697.01	539.64	506.50	33.14	16.284		
3,510.00	3,393.59	3,464.13	3,321.64	17.58	17.56	171.41	-380.24	-706.76	546.42	512.89	33.53	16.296		
3,540.00	3,422.20	3,493.28	3,348.63	17.77	17.78	171.61	-385.34	-716.51	553.21	519.29	33.92	16.309		
3,570.00	3,450.82	3,522.43	3,375.63	17.96	18.01	171.81	-390.44	-726.26	560.00	525.69	34.31	16.321		
3,600.00	3,479.44	3,551.58	3,402.62	18.15	18.24	172.00	-395.54	-736.01	566.80	532.10	34.70	16.334		
3,630.00	3,508.06	3,580.73	3,429.62	18.33	18.47	172.19	-400.64	-745.75	573.61	538.52	35.09	16.346		
3,660.00	3,536.68	3,609.88	3,456.61	18.52	18.70	172.37	-405.74	-755.50	580.42	544.94	35.48	16.359		
3,690.00	3,565.30	3,639.03	3,483.60	18.71	18.93	172.55	-410.84	-765.25	587.24	551.37	35.87	16.371		
3,720.00	3,593.92	3,668.18	3,510.60	18.90	19.16	172.73	-415.94	-775.00	594.07	557.81	36.26	16.384		
3,750.00	3,622.54	3,697.33	3,537.59	19.09	19.38	172.90	-421.04	-784.75	600.90	564.26	36.65	16.397		
3,780.00	3,651.16	3,726.48	3,564.59	19.28	19.61	173.06	-426.14	-794.50	607.74	570.71	37.04	16.409		
3,810.00	3,679.78	3,755.63	3,591.58	19.47	19.84	173.23	-431.24	-804.24	614.59	577.16	37.42	16.422		
3,840.00	3,708.40	3,784.78	3,618.58	19.66	20.07	173.39	-436.34	-813.99	621.44	583.63	37.81	16.435		
3,870.00	3,737.01	3,813.93	3,645.57	19.85	20.30	173.55	-441.43	-823.74	628.29	590.09	38.20	16.447		
3,900.00	3,765.63	3,843.08	3,672.56	20.04	20.53	173.70	-446.53	-833.49	635.15	596.57	38.59	16.460		
3,930.00	3,794.25	3,872.23	3,699.56	20.23	20.76	173.85	-451.63	-843.24	642.02	603.05	38.97	16.473		
3,960.00	3,822.87	3,901.38	3,726.55	20.42	20.99	174.00	-456.73	-852.98	648.89	609.53	39.36	16.485		
3,990.00	3,851.49	3,930.53	3,753.55	20.61	21.21	174.14	-461.83	-862.73	655.77	616.02	39.75	16.498		
4,020.00	3,880.11	3,959.68	3,780.54	20.80	21.44	174.28	-466.93	-872.48	662.65	622.51	40.14	16.510		
4,050.00	3,908.73	3,988.83	3,807.54	20.99	21.67	174.42	-472.03	-882.23	669.53	629.01	40.52	16.523		
4,080.00	3,937.35	4,017.98	3,834.53	21.18	21.90	174.56	-477.13	-891.98	676.42	635.51	40.91	16.535		
4,110.00	3,965.97	4,047.13	3,861.53	21.37	22.13	174.69	-482.23	-901.72	683.31	642.02	41.29	16.548		
4,140.00	3,994.59	4,076.28	3,888.52	21.56	22.36	174.82	-487.33	-911.47	690.21	648.53	41.68	16.560		
4,170.00	4,023.21	4,105.43	3,915.51	21.75	22.59	174.95	-492.43	-921.22	697.11	655.04	42.07	16.572		
4,200.00	4,051.83	4,134.58	3,942.51	21.94	22.82	175.07	-497.53	-930.97	704.01	661.56	42.45	16.584		
4,230.00	4,080.44	4,163.73	3,969.50	22.13	23.05	175.20	-502.63	-940.72	710.92	668.08	42.84	16.596		
4,260.00	4,109.06	4,192.88	3,996.50	22.33	23.28	175.32	-507.73	-950.47	717.83	674.61	43.22	16.608		
4,290.00	4,137.68	4,222.03	4,023.49	22.52	23.51	175.43	-512.82	-960.21	724.75	681.14	43.61	16.620		
4,320.00	4,166.30	4,251.18	4,050.49	22.71	23.74	175.55	-517.92	-969.96	731.67	687.67	43.99	16.632		
4,350.00	4,194.92	4,280.33	4,077.48	22.90	23.97	175.66	-523.02	-979.71	738.59	694.21	44.38	16.644		
4,380.00	4,223.54	4,309.48	4,104.48	23.09	24.20	175.78	-528.12	-989.46	745.51	700.75	44.76	16.655		
4,410.00	4,252.16	4,338.63	4,131.47	23.28	24.43	175.89	-533.22	-999.21	752.44	707.29	45.15	16.667		
4,440.00	4,280.78	4,367.78	4,158.46	23.47	24.66	175.99	-538.32	-1,008.95	759.37	713.84	45.53	16.679		
4,470.00	4,309.40	4,396.93	4,185.46	23.66	24.88	176.10	-543.42	-1,018.70	766.31	720.39	45.91	16.690		
4,500.00	4,338.02	4,426.08	4,212.45	23.85	25.11	176.20	-548.52	-1,028.45	773.24	726.94	46.30	16.701		
4,530.00	4,366.64	4,455.23	4,239.45	24.04	25.34	176.30	-553.62	-1,038.20	780.18	733.50	46.68	16.713		
4,560.00	4,395.26	4,484.38	4,266.44	24.23	25.57	176.41	-558.72	-1,047.95	787.12	740.06	47.07	16.724		
4,590.00	4,423.87	4,513.53	4,293.44	24.42	25.80	176.50	-563.82	-1,057.69	794.07	746.62	47.45	16.735		
4,620.00	4,452.49	4,542.68	4,320.43	24.61	26.03	176.60	-568.92	-1,067.44	801.02	753.18	47.83	16.746		

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

Company:	Piceance Energy, LLC	Local Co-ordinate Reference:	Well Gunderson 29-09M
Project:	Mesa County, CO	TVD Reference:	WELL @ 7560.00usft (Original Well Elev)
Reference Site:	Gunderson	MD Reference:	WELL @ 7560.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Gunderson 29-09M	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMDBBW
Reference Design:	Design #1	Offset TVD Reference:	Reference Datum

Offset Design Gunderson - Gunderson 29-13M - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
4,650.00	4,481.11	4,571.83	4,347.42	24.80	26.26	176.70	-574.02	-1,077.19	807.97	759.75	48.22	16.757		
4,680.00	4,509.73	4,600.98	4,374.42	24.99	26.49	176.79	-579.11	-1,086.94	814.92	766.32	48.60	16.768		
4,710.00	4,538.35	4,630.13	4,401.41	25.18	26.72	176.88	-584.21	-1,096.69	821.87	772.89	48.98	16.779		
4,740.00	4,566.97	4,659.28	4,428.41	25.37	26.95	176.97	-589.31	-1,106.44	828.83	779.46	49.37	16.789		
4,770.00	4,595.59	4,688.43	4,455.40	25.56	27.18	177.06	-594.41	-1,116.18	835.79	786.04	49.75	16.800		
4,800.00	4,624.21	4,717.58	4,482.40	25.75	27.41	177.15	-599.51	-1,125.93	842.75	792.62	50.13	16.810		
4,830.00	4,652.83	4,746.73	4,509.39	25.94	27.64	177.24	-604.61	-1,135.68	849.71	799.20	50.52	16.821		
4,860.00	4,681.45	4,775.88	4,536.39	26.13	27.87	177.32	-609.71	-1,145.43	856.68	805.78	50.90	16.831		
4,890.00	4,710.07	4,805.03	4,563.38	26.32	28.10	177.40	-614.81	-1,155.18	863.65	812.36	51.28	16.841		
4,920.00	4,738.68	4,834.19	4,590.37	26.51	28.33	177.49	-619.91	-1,164.92	870.61	818.95	51.66	16.851		
4,950.00	4,767.30	4,863.34	4,617.37	26.70	28.56	177.57	-625.01	-1,174.67	877.59	825.54	52.05	16.861		
4,980.00	4,795.92	4,892.49	4,644.36	26.89	28.79	177.65	-630.11	-1,184.42	884.56	832.13	52.43	16.871		
5,010.00	4,824.54	4,925.65	4,675.13	27.08	29.00	177.81	-635.85	-1,195.40	891.48	838.69	52.79	16.886		
5,040.00	4,853.16	4,959.71	4,706.87	27.27	29.20	177.96	-641.58	-1,206.34	898.25	845.09	53.16	16.898		
5,070.00	4,881.79	4,993.88	4,738.86	27.45	29.40	178.10	-647.14	-1,216.99	904.85	851.33	53.52	16.907		
5,100.00	4,910.49	5,028.14	4,771.08	27.62	29.59	178.22	-652.55	-1,227.32	911.25	857.38	53.88	16.914		
5,130.00	4,939.28	5,062.51	4,803.53	27.75	29.77	178.35	-657.79	-1,237.34	917.44	863.24	54.20	16.928		
5,160.00	4,968.16	5,096.98	4,836.21	27.89	29.96	178.47	-662.87	-1,247.04	923.42	868.90	54.52	16.937		
5,190.00	4,997.12	5,131.53	4,869.10	28.02	30.13	178.58	-667.77	-1,256.42	929.17	874.35	54.83	16.947		
5,220.00	5,026.16	5,166.18	4,902.22	28.15	30.30	178.70	-672.50	-1,265.47	934.72	879.59	55.12	16.957		
5,250.00	5,055.28	5,200.92	4,935.53	28.27	30.46	178.81	-677.06	-1,274.19	940.04	884.62	55.41	16.964		
5,280.00	5,084.47	5,235.75	4,969.05	28.39	30.62	178.91	-681.45	-1,282.56	945.14	889.45	55.69	16.971		
5,310.00	5,113.73	5,270.66	5,002.76	28.50	30.77	179.01	-685.65	-1,290.60	950.02	894.06	55.96	16.976		
5,340.00	5,143.06	5,305.64	5,036.65	28.61	30.92	179.11	-689.67	-1,298.28	954.68	898.46	56.22	16.981		
5,370.00	5,172.46	5,340.71	5,070.73	28.71	31.06	179.20	-693.51	-1,305.62	959.12	902.65	56.46	16.986		
5,400.00	5,201.92	5,375.84	5,104.97	28.82	31.19	179.29	-697.16	-1,312.60	963.33	906.62	56.71	16.987		
5,430.00	5,231.43	5,411.05	5,139.37	28.91	31.32	179.37	-700.62	-1,319.22	967.32	910.38	56.93	16.990		
5,460.00	5,261.00	5,446.32	5,173.93	29.00	31.44	179.45	-703.89	-1,325.47	971.08	913.93	57.15	16.993		
5,490.00	5,290.62	5,481.66	5,208.63	29.09	31.56	179.52	-706.97	-1,331.36	974.61	917.25	57.36	16.991		
5,520.00	5,320.29	5,517.05	5,243.47	29.17	31.67	179.59	-709.86	-1,336.88	977.91	920.36	57.55	16.991		
5,550.00	5,350.00	5,552.50	5,278.44	29.24	31.77	179.66	-712.55	-1,342.02	980.99	923.25	57.74	16.991		
5,580.00	5,379.76	5,587.99	5,313.53	29.32	31.88	179.72	-715.04	-1,346.78	983.83	925.92	57.92	16.987		
5,610.00	5,409.55	5,623.54	5,348.73	29.39	31.97	179.77	-717.33	-1,351.17	986.45	928.37	58.08	16.984		
5,640.00	5,439.38	5,659.13	5,384.03	29.45	32.05	179.82	-719.43	-1,355.17	988.83	930.60	58.23	16.981		
5,670.00	5,469.24	5,694.76	5,419.43	29.51	32.14	179.87	-721.32	-1,358.79	990.98	932.60	58.38	16.975		
5,700.00	5,499.13	5,730.42	5,454.91	29.57	32.21	179.91	-723.01	-1,362.02	992.90	934.39	58.52	16.968		
5,730.00	5,529.04	5,766.12	5,490.46	29.61	32.27	179.95	-724.50	-1,364.86	994.59	935.95	58.63	16.963		
5,760.00	5,558.98	5,801.84	5,526.07	29.66	32.34	179.98	-725.78	-1,367.31	996.04	937.29	58.75	16.954		
5,790.00	5,588.94	5,837.59	5,561.75	29.71	32.39	-179.99	-726.85	-1,369.37	997.26	938.41	58.85	16.945		
5,820.00	5,618.91	5,873.36	5,597.46	29.74	32.44	-179.97	-727.72	-1,371.03	998.25	939.30	58.94	16.935		
5,850.00	5,648.89	5,909.14	5,633.22	29.78	32.49	-179.96	-728.39	-1,372.30	999.00	939.97	59.03	16.924		
5,880.00	5,678.88	5,944.94	5,669.00	29.81	32.52	-179.95	-728.85	-1,373.18	999.51	940.41	59.10	16.913		
5,910.00	5,708.88	5,980.74	5,704.79	29.84	32.55	-179.94	-729.10	-1,373.65	999.80	940.63	59.17	16.898		
5,940.00	5,738.88	6,014.82	5,738.88	29.87	32.59	-179.94	-729.15	-1,373.75	999.85	940.63	59.23	16.882		
5,970.00	5,768.88	6,044.82	5,768.88	29.89	32.61	-179.94	-729.15	-1,373.75	999.85	940.58	59.28	16.868		
6,000.00	5,798.88	6,074.82	5,798.88	29.92	32.63	-179.94	-729.15	-1,373.75	999.85	940.53	59.33	16.853		
6,030.00	5,828.88	6,104.82	5,828.88	29.94	32.66	-179.94	-729.15	-1,373.75	999.85	940.47	59.38	16.838		
6,060.00	5,858.88	6,134.82	5,858.88	29.97	32.68	-179.94	-729.15	-1,373.75	999.85	940.42	59.43	16.823		
6,090.00	5,888.88	6,164.82	5,888.88	30.00	32.70	-179.94	-729.15	-1,373.75	999.85	940.37	59.49	16.808		
6,120.00	5,918.88	6,194.82	5,918.88	30.03	32.73	-179.94	-729.15	-1,373.75	999.85	940.31	59.54	16.792		
6,150.00	5,948.88	6,224.82	5,948.88	30.06	32.75	-179.94	-729.15	-1,373.75	999.85	940.26	59.60	16.777		
6,180.00	5,978.88	6,254.82	5,978.88	30.08	32.77	-179.94	-729.15	-1,373.75	999.85	940.20	59.65	16.761		

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

Company:	Piceance Energy, LLC	Local Co-ordinate Reference:	Well Gunderson 29-09M
Project:	Mesa County, CO	TVD Reference:	WELL @ 7560.00usft (Original Well Elev)
Reference Site:	Gunderson	MD Reference:	WELL @ 7560.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Gunderson 29-09M	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMDBBW
Reference Design:	Design #1	Offset TVD Reference:	Reference Datum

Offset Design Gunderson - Gunderson 29-13M - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
6,210.00	6,008.88	6,284.82	6,008.88	30.11	32.80	-179.94	-729.15	-1,373.75	999.85	940.15	59.71	16.746		
6,240.00	6,038.88	6,314.82	6,038.88	30.14	32.82	-179.94	-729.15	-1,373.75	999.85	940.09	59.76	16.730		
6,270.00	6,068.88	6,344.82	6,068.88	30.17	32.85	-179.94	-729.15	-1,373.75	999.85	940.04	59.82	16.715		
6,300.00	6,098.88	6,374.82	6,098.88	30.20	32.87	-179.94	-729.15	-1,373.75	999.85	939.98	59.88	16.699		
6,330.00	6,128.88	6,404.82	6,128.88	30.23	32.90	-179.94	-729.15	-1,373.75	999.85	939.92	59.93	16.683		
6,360.00	6,158.88	6,434.82	6,158.88	30.26	32.92	-179.94	-729.15	-1,373.75	999.85	939.87	59.99	16.667		
6,390.00	6,188.88	6,464.82	6,188.88	30.28	32.95	-179.94	-729.15	-1,373.75	999.85	939.81	60.05	16.652		
6,420.00	6,218.88	6,494.82	6,218.88	30.31	32.97	-179.94	-729.15	-1,373.75	999.85	939.75	60.10	16.636		
6,450.00	6,248.88	6,524.82	6,248.88	30.34	33.00	-179.94	-729.15	-1,373.75	999.85	939.69	60.16	16.620		
6,480.00	6,278.88	6,554.82	6,278.88	30.37	33.02	-179.94	-729.15	-1,373.75	999.85	939.64	60.22	16.604		
6,510.00	6,308.88	6,584.82	6,308.88	30.40	33.05	-179.94	-729.15	-1,373.75	999.85	939.58	60.27	16.588		
6,540.00	6,338.88	6,614.82	6,338.88	30.43	33.07	-179.94	-729.15	-1,373.75	999.85	939.52	60.33	16.572		
6,570.00	6,368.88	6,644.82	6,368.88	30.46	33.10	-179.94	-729.15	-1,373.75	999.85	939.46	60.39	16.556		
6,600.00	6,398.88	6,674.82	6,398.88	30.49	33.12	-179.94	-729.15	-1,373.75	999.85	939.40	60.45	16.540		
6,630.00	6,428.88	6,704.82	6,428.88	30.52	33.15	-179.94	-729.15	-1,373.75	999.85	939.35	60.51	16.524		
6,660.00	6,458.88	6,734.82	6,458.88	30.55	33.17	-179.94	-729.15	-1,373.75	999.85	939.29	60.57	16.508		
6,690.00	6,488.88	6,764.82	6,488.88	30.58	33.20	-179.94	-729.15	-1,373.75	999.85	939.23	60.63	16.492		
6,720.00	6,518.88	6,794.82	6,518.88	30.61	33.23	-179.94	-729.15	-1,373.75	999.85	939.17	60.69	16.476		
6,750.00	6,548.88	6,824.82	6,548.88	30.64	33.25	-179.94	-729.15	-1,373.75	999.85	939.11	60.75	16.459		
6,780.00	6,578.88	6,854.82	6,578.88	30.67	33.28	-179.94	-729.15	-1,373.75	999.85	939.05	60.81	16.443		
6,810.00	6,608.88	6,884.82	6,608.88	30.70	33.31	-179.94	-729.15	-1,373.75	999.85	938.99	60.87	16.427		
6,840.00	6,638.88	6,914.82	6,638.88	30.74	33.33	-179.94	-729.15	-1,373.75	999.85	938.93	60.93	16.411		
6,870.00	6,668.88	6,944.82	6,668.88	30.77	33.36	-179.94	-729.15	-1,373.75	999.85	938.87	60.99	16.394		
6,900.00	6,698.88	6,974.82	6,698.88	30.80	33.39	-179.94	-729.15	-1,373.75	999.85	938.81	61.05	16.378		
6,930.00	6,728.88	7,004.82	6,728.88	30.83	33.41	-179.94	-729.15	-1,373.75	999.85	938.74	61.11	16.362		
6,960.00	6,758.88	7,034.82	6,758.88	30.86	33.44	-179.94	-729.15	-1,373.75	999.85	938.68	61.17	16.345		
6,990.00	6,788.88	7,064.82	6,788.88	30.89	33.47	-179.94	-729.15	-1,373.75	999.85	938.62	61.23	16.329		
7,020.00	6,818.88	7,094.82	6,818.88	30.92	33.49	-179.94	-729.15	-1,373.75	999.85	938.56	61.30	16.312		
7,050.00	6,848.88	7,124.82	6,848.88	30.95	33.52	-179.94	-729.15	-1,373.75	999.85	938.50	61.36	16.296		
7,080.00	6,878.88	7,154.82	6,878.88	30.99	33.55	-179.94	-729.15	-1,373.75	999.85	938.43	61.42	16.279		
7,110.00	6,908.88	7,184.82	6,908.88	31.02	33.58	-179.94	-729.15	-1,373.75	999.85	938.37	61.48	16.262		
7,140.00	6,938.88	7,214.82	6,938.88	31.05	33.60	-179.94	-729.15	-1,373.75	999.85	938.31	61.55	16.246		
7,170.00	6,968.88	7,244.82	6,968.88	31.08	33.63	-179.94	-729.15	-1,373.75	999.85	938.25	61.61	16.229		
7,200.00	6,998.88	7,274.82	6,998.88	31.11	33.66	-179.94	-729.15	-1,373.75	999.85	938.18	61.67	16.213		
7,230.00	7,028.88	7,304.82	7,028.88	31.15	33.69	-179.94	-729.15	-1,373.75	999.85	938.12	61.74	16.196		
7,260.00	7,058.88	7,334.82	7,058.88	31.18	33.72	-179.94	-729.15	-1,373.75	999.85	938.06	61.80	16.179		
7,290.00	7,088.88	7,364.82	7,088.88	31.21	33.75	-179.94	-729.15	-1,373.75	999.85	937.99	61.86	16.162		
7,320.00	7,118.88	7,394.82	7,118.88	31.24	33.77	-179.94	-729.15	-1,373.75	999.85	937.93	61.93	16.146		
7,350.00	7,148.88	7,424.82	7,148.88	31.28	33.80	-179.94	-729.15	-1,373.75	999.85	937.86	61.99	16.129		
7,380.00	7,178.88	7,454.82	7,178.88	31.31	33.83	-179.94	-729.15	-1,373.75	999.85	937.80	62.06	16.112		
7,410.00	7,208.88	7,484.82	7,208.88	31.34	33.86	-179.94	-729.15	-1,373.75	999.85	937.73	62.12	16.095		
7,440.00	7,238.88	7,514.82	7,238.88	31.38	33.89	-179.94	-729.15	-1,373.75	999.85	937.67	62.19	16.078		
7,470.00	7,268.88	7,544.82	7,268.88	31.41	33.92	-179.94	-729.15	-1,373.75	999.85	937.60	62.25	16.061		
7,500.00	7,298.88	7,574.82	7,298.88	31.44	33.95	-179.94	-729.15	-1,373.75	999.85	937.54	62.32	16.045		
7,530.00	7,328.88	7,604.82	7,328.88	31.48	33.98	-179.94	-729.15	-1,373.75	999.85	937.47	62.38	16.028		
7,560.00	7,358.88	7,634.82	7,358.88	31.51	34.00	-179.94	-729.15	-1,373.75	999.85	937.41	62.45	16.011		
7,590.00	7,388.88	7,664.82	7,388.88	31.54	34.03	-179.94	-729.15	-1,373.75	999.85	937.34	62.52	15.994		
7,620.00	7,418.88	7,694.82	7,418.88	31.58	34.06	-179.94	-729.15	-1,373.75	999.85	937.27	62.58	15.977		
7,650.00	7,448.88	7,724.82	7,448.88	31.61	34.09	-179.94	-729.15	-1,373.75	999.85	937.21	62.65	15.960		
7,680.00	7,478.88	7,754.82	7,478.88	31.65	34.12	-179.94	-729.15	-1,373.75	999.85	937.14	62.72	15.943		
7,710.00	7,508.88	7,784.82	7,508.88	31.68	34.15	-179.94	-729.15	-1,373.75	999.85	937.07	62.78	15.926		
7,740.00	7,538.88	7,814.82	7,538.88	31.71	34.18	-179.94	-729.15	-1,373.75	999.85	937.00	62.85	15.909		

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

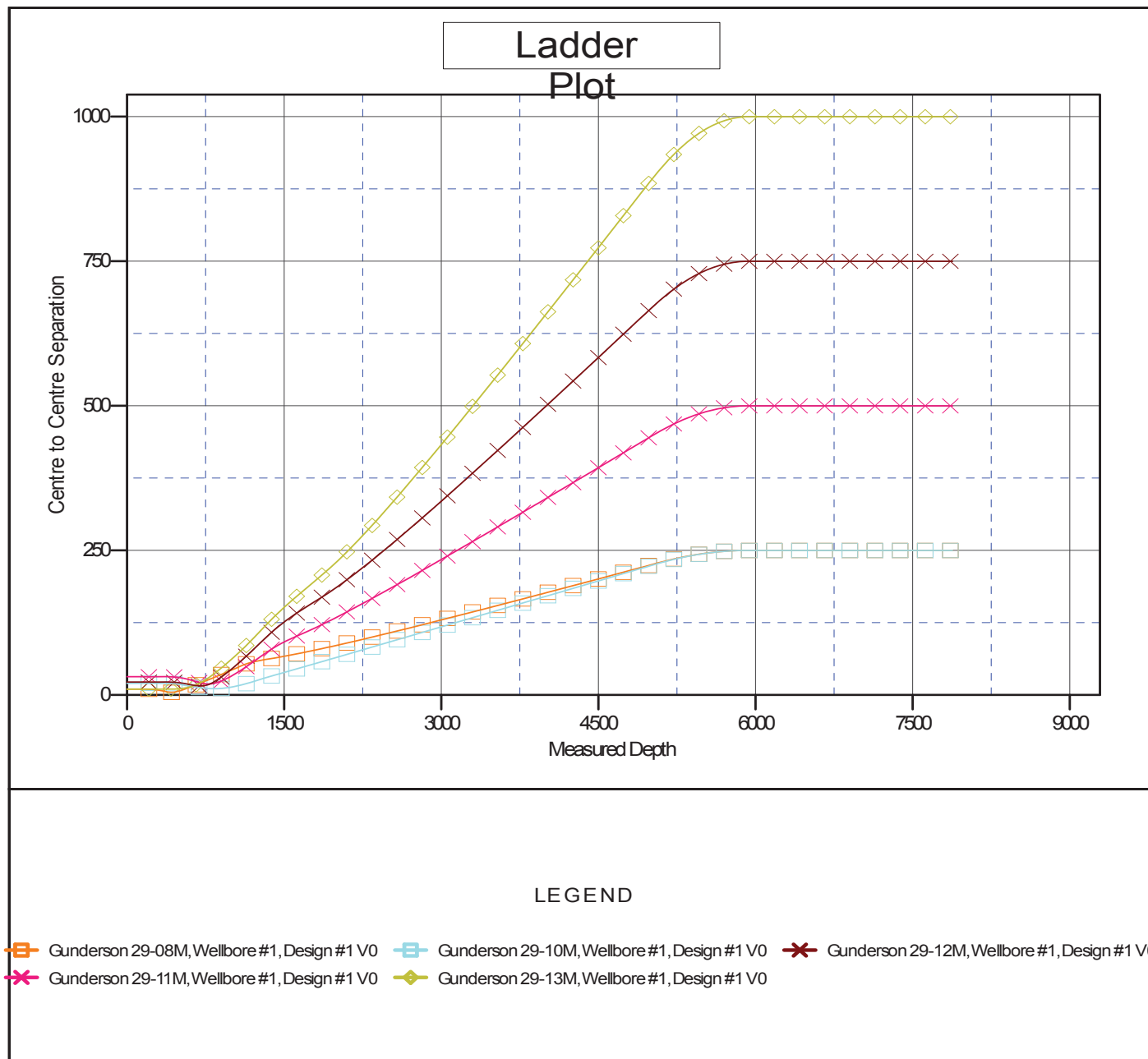
Company:	Piceance Energy, LLC	Local Co-ordinate Reference:	Well Gunderson 29-09M
Project:	Mesa County, CO	TVD Reference:	WELL @ 7560.00usft (Original Well Elev)
Reference Site:	Gunderson	MD Reference:	WELL @ 7560.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Gunderson 29-09M	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMDBBW
Reference Design:	Design #1	Offset TVD Reference:	Reference Datum

Offset Design Gunderson - Gunderson 29-13M - Wellbore #1 - Design #1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Azimuth from North (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
7,770.00	7,568.88	7,844.82	7,568.88	31.75	34.21	-179.94	-729.15	-1,373.75	999.85	936.94	62.92	15.892	
7,800.00	7,598.88	7,874.82	7,598.88	31.78	34.24	-179.94	-729.15	-1,373.75	999.85	936.87	62.99	15.874	
7,830.00	7,628.88	7,904.82	7,628.88	31.82	34.27	-179.94	-729.15	-1,373.75	999.85	936.80	63.05	15.857	
7,860.00	7,658.88	7,934.82	7,658.88	31.85	34.30	-179.94	-729.15	-1,373.75	999.85	936.73	63.12	15.840	
7,881.12	7,680.00	7,955.94	7,680.00	31.88	34.32	-179.94	-729.15	-1,373.75	999.85	936.69	63.17	15.828	

Company:	Piceance Energy, LLC	Local Co-ordinate Reference:	Well Gunderson 29-09M
Project:	Mesa County, CO	TVD Reference:	WELL @ 7560.00usft (Original Well Elev)
Reference Site:	Gunderson	MD Reference:	WELL @ 7560.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Gunderson 29-09M	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMDBBW
Reference Design:	Design #1	Offset TVD Reference:	Reference Datum

Reference Depths are relative to WELL @ 7560.00usft (Original Well E
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: Gunderson 29-09M
Coordinate System is US State Plane 1983, Colorado Central Zone
Grid Convergence at Surface is: -1.44°



Company:	Piceance Energy, LLC	Local Co-ordinate Reference:	Well Gunderson 29-09M
Project:	Mesa County, CO	TVD Reference:	WELL @ 7560.00usft (Original Well Elev)
Reference Site:	Gunderson	MD Reference:	WELL @ 7560.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Gunderson 29-09M	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMDBBW
Reference Design:	Design #1	Offset TVD Reference:	Reference Datum

Reference Depths are relative to WELL @ 7560.00usft (Original Well E
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: Gunderson 29-09M
Coordinate System is US State Plane 1983, Colorado Central Zone
Grid Convergence at Surface is: -1.44°

