

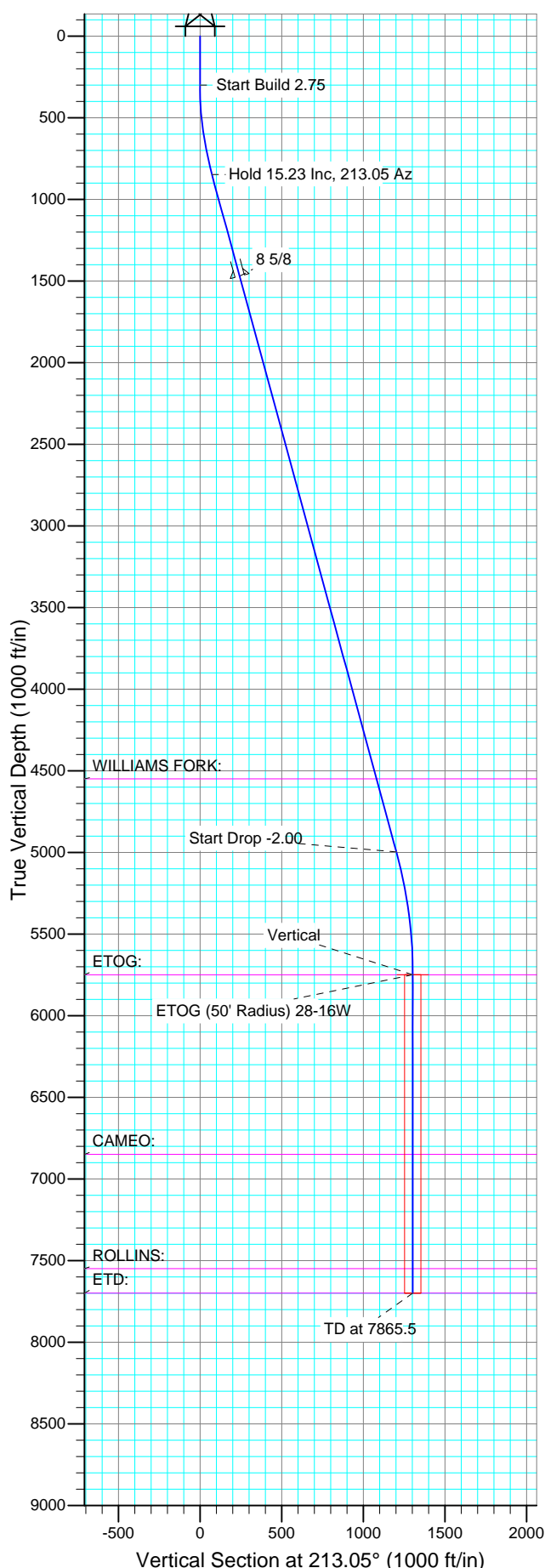


Well Name: Piceance 28-16W
Surface Location: Piceance 28-11 Pad
North American Datum 1983
US State Plane 1983 , Colorado Central Zone
Ground Elevation: 7580.0
WELL @ 7604.0ft (Original Well Elev)
Easting 2354910.37 Latitude 39° 14' 51.720 N Longitude 107° 46' 41.268 W

Project: Mesa County, CO
Site: Piceance 28-11 Pad
Well: Piceance 28-16W
Wellbore: Wellbore #1
Design: Plan #1 10May14 kjs

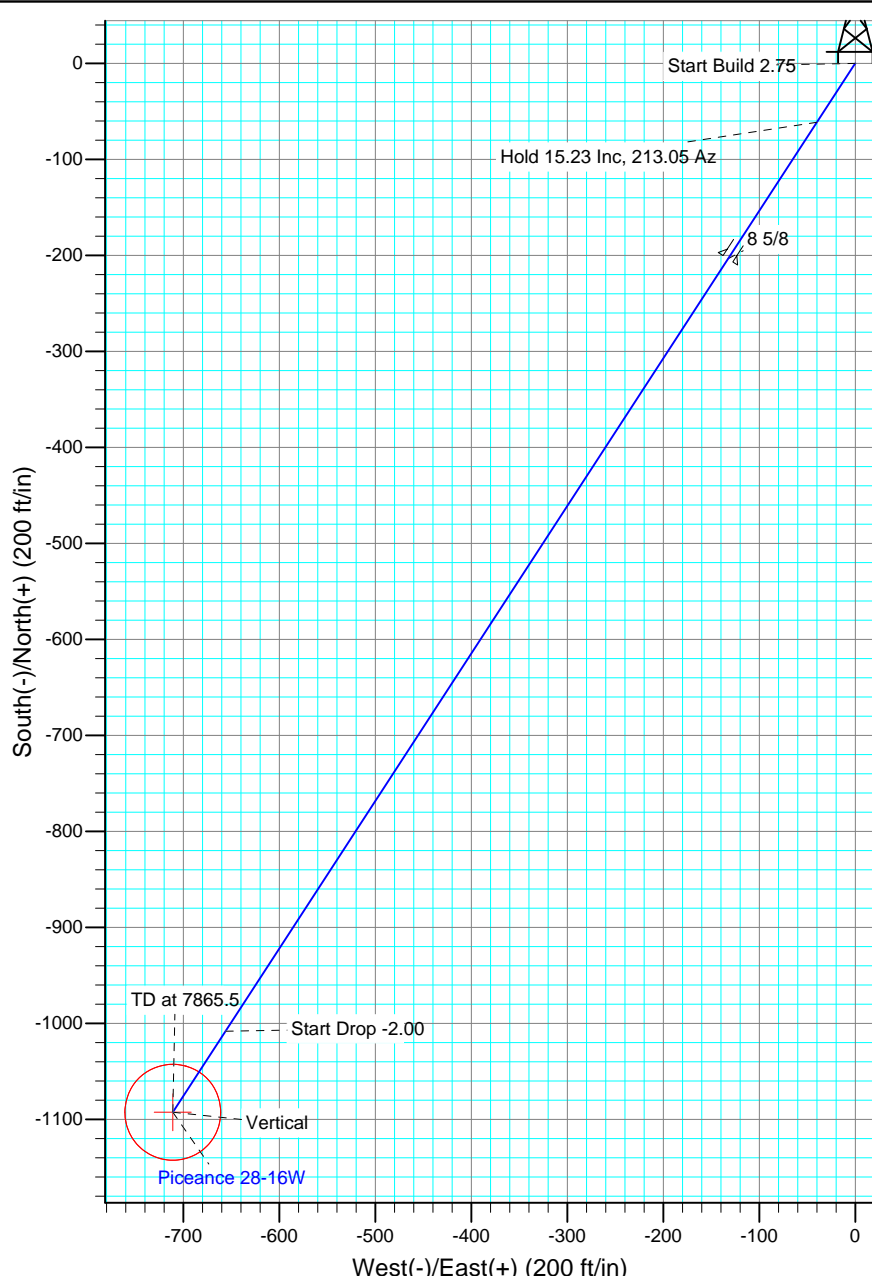
+N/-S +E/-W Northing
0.0 0.0 1523197.93

Slot



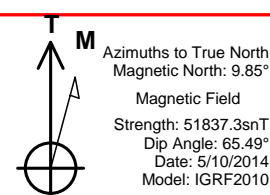
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.0	
3	853.9	15.23	213.05	847.4	-61.3	-39.9	2.75	213.05	73.2	
4	5153.9	15.23	213.05	4996.4	-1008.3	-656.0	0.00	0.00	1202.9	
5	5915.5	0.00	0.00	5749.0	-1092.6	-710.9	2.00	180.00	1303.5	ETOG (50' Radius) 28-16W
6	7865.5	0.00	0.00	7699.0	-1092.6	-710.9	0.00	0.00	1303.5	



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4549.0	4690.3	WILLIAMS FORK:
5749.0	5915.5	ETOG:
6849.0	7015.5	CAMEO:
7549.0	7715.5	ROLLINS:
7699.0	7865.5	ETD:



Piceance Energy, LLC

Mesa County, CO

Piceance 28-11 Pad

Piceance 28-16W

Wellbore #1

Plan: Plan #1 10May14 kjs

Standard Planning Report - Geographic

11 May, 2014

New Tech

Planning Report - Geographic

Database:	EDM 2003.16 Single User Db	Local Co-ordinate Reference:	Well Piceance 28-16W
Company:	Piceance Energy, LLC	TVD Reference:	WELL @ 7604.0ft (Original Well Elev)
Project:	Mesa County, CO	MD Reference:	WELL @ 7604.0ft (Original Well Elev)
Site:	Piceance 28-11 Pad	North Reference:	True
Well:	Piceance 28-16W	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 10May14 kjs		

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		Piceance 28-11 Pad			
Site Position:		Northing:	1,523,237.48 ft	Latitude:	39° 14' 52.116 N
From:	Lat/Long	Easting:	2,354,931.19 ft	Longitude:	107° 46' 41.016 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	-1.44 °

Well	Piceance 28-16W					
Well Position	+N/-S	0.0 ft	Northing:	1,523,197.93 ft	Latitude:	39° 14' 51.720 N
	+E/-W	0.0 ft	Easting:	2,354,910.37 ft	Longitude:	107° 46' 41.268 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	7,580.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/10/2014	9.85	65.50	51,837

Design	Plan #1 10May14 kjs			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	213.05

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.00	0.00	
853.9	15.23	213.05	847.4	-61.3	-39.9	2.75	2.75	0.00	213.05	
5,153.9	15.23	213.05	4,996.4	-1,008.3	-656.0	0.00	0.00	0.00	0.00	
5,915.5	0.00	0.00	5,749.0	-1,092.6	-710.9	2.00	-2.00	0.00	180.00	ETOG (50' Radius) 2%
7,865.5	0.00	0.00	7,699.0	-1,092.6	-710.9	0.00	0.00	0.00	0.00	

New Tech

Planning Report - Geographic

Database:	EDM 2003.16 Single User Db	Local Co-ordinate Reference:	Well Piceance 28-16W
Company:	Piceance Energy, LLC	TVD Reference:	WELL @ 7604.0ft (Original Well Elev)
Project:	Mesa County, CO	MD Reference:	WELL @ 7604.0ft (Original Well Elev)
Site:	Piceance 28-11 Pad	North Reference:	True
Well:	Piceance 28-16W	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 10May14 kjs		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	1,523,197.93	2,354,910.37	39° 14' 51.720 N	107° 46' 41.268 W
200.0	0.00	0.00	200.0	0.0	0.0	1,523,197.93	2,354,910.37	39° 14' 51.720 N	107° 46' 41.268 W
300.0	0.00	0.00	300.0	0.0	0.0	1,523,197.93	2,354,910.37	39° 14' 51.720 N	107° 46' 41.268 W
Start Build 2.75									
400.0	2.75	213.05	400.0	-2.0	-1.3	1,523,195.95	2,354,909.01	39° 14' 51.700 N	107° 46' 41.285 W
600.0	8.25	213.05	599.0	-18.1	-11.8	1,523,180.16	2,354,898.16	39° 14' 51.541 N	107° 46' 41.417 W
800.0	13.75	213.05	795.2	-50.0	-32.6	1,523,148.71	2,354,876.57	39° 14' 51.225 N	107° 46' 41.682 W
853.9	15.23	213.05	847.4	-61.3	-39.9	1,523,137.60	2,354,868.93	39° 14' 51.114 N	107° 46' 41.775 W
Hold 15.23 Inclination									
1,000.0	15.23	213.05	988.4	-93.5	-60.8	1,523,105.96	2,354,847.20	39° 14' 50.796 N	107° 46' 42.041 W
1,200.0	15.23	213.05	1,181.3	-137.6	-89.5	1,523,062.64	2,354,817.45	39° 14' 50.360 N	107° 46' 42.406 W
1,400.0	15.23	213.05	1,374.3	-181.6	-118.2	1,523,019.33	2,354,787.70	39° 14' 49.925 N	107° 46' 42.770 W
1,500.0	15.23	213.05	1,470.8	-203.6	-132.5	1,522,997.68	2,354,772.82	39° 14' 49.707 N	107° 46' 42.952 W
8 5/8									
1,600.0	15.23	213.05	1,567.3	-225.7	-146.8	1,522,976.02	2,354,757.95	39° 14' 49.490 N	107° 46' 43.134 W
1,800.0	15.23	213.05	1,760.3	-269.7	-175.5	1,522,932.71	2,354,728.20	39° 14' 49.054 N	107° 46' 43.498 W
2,000.0	15.23	213.05	1,953.2	-313.7	-204.1	1,522,889.40	2,354,698.45	39° 14' 48.619 N	107° 46' 43.863 W
2,200.0	15.23	213.05	2,146.2	-357.8	-232.8	1,522,846.09	2,354,668.70	39° 14' 48.183 N	107° 46' 44.227 W
2,400.0	15.23	213.05	2,339.2	-401.8	-261.4	1,522,802.78	2,354,638.95	39° 14' 47.748 N	107° 46' 44.591 W
2,600.0	15.23	213.05	2,532.2	-445.9	-290.1	1,522,759.47	2,354,609.20	39° 14' 47.313 N	107° 46' 44.955 W
2,800.0	15.23	213.05	2,725.1	-489.9	-318.7	1,522,716.16	2,354,579.46	39° 14' 46.877 N	107° 46' 45.320 W
3,000.0	15.23	213.05	2,918.1	-534.0	-347.4	1,522,672.85	2,354,549.71	39° 14' 46.442 N	107° 46' 45.684 W
3,200.0	15.23	213.05	3,111.1	-578.0	-376.0	1,522,629.54	2,354,519.96	39° 14' 46.007 N	107° 46' 46.048 W
3,400.0	15.23	213.05	3,304.1	-622.0	-404.7	1,522,586.22	2,354,490.21	39° 14' 45.571 N	107° 46' 46.412 W
3,600.0	15.23	213.05	3,497.0	-666.1	-433.3	1,522,542.91	2,354,460.46	39° 14' 45.136 N	107° 46' 46.777 W
3,800.0	15.23	213.05	3,690.0	-710.1	-462.0	1,522,499.60	2,354,430.71	39° 14' 44.701 N	107° 46' 47.141 W
4,000.0	15.23	213.05	3,883.0	-754.2	-490.7	1,522,456.29	2,354,400.96	39° 14' 44.265 N	107° 46' 47.505 W
4,200.0	15.23	213.05	4,076.0	-798.2	-519.3	1,522,412.98	2,354,371.21	39° 14' 43.830 N	107° 46' 47.869 W
4,400.0	15.23	213.05	4,268.9	-842.3	-548.0	1,522,369.67	2,354,341.46	39° 14' 43.395 N	107° 46' 48.233 W
4,600.0	15.23	213.05	4,461.9	-886.3	-576.6	1,522,326.36	2,354,311.71	39° 14' 42.959 N	107° 46' 48.598 W
4,690.3	15.23	213.05	4,549.0	-906.2	-589.5	1,522,306.81	2,354,298.29	39° 14' 42.763 N	107° 46' 48.762 W
WILLIAMS FORK:									
4,800.0	15.23	213.05	4,654.9	-930.3	-605.3	1,522,283.05	2,354,281.96	39° 14' 42.524 N	107° 46' 48.962 W
5,000.0	15.23	213.05	4,847.9	-974.4	-633.9	1,522,239.74	2,354,252.22	39° 14' 42.089 N	107° 46' 49.326 W
5,153.9	15.23	213.05	4,996.4	-1,008.3	-656.0	1,522,206.41	2,354,229.32	39° 14' 41.754 N	107° 46' 49.606 W
Start Drop -2.00									
5,200.0	14.31	213.05	5,040.9	-1,018.1	-662.4	1,522,196.72	2,354,222.67	39° 14' 41.656 N	107° 46' 49.688 W
5,400.0	10.31	213.05	5,236.3	-1,053.9	-685.6	1,522,161.58	2,354,198.53	39° 14' 41.303 N	107° 46' 49.983 W
5,600.0	6.31	213.05	5,434.1	-1,078.1	-701.4	1,522,137.76	2,354,182.17	39° 14' 41.064 N	107° 46' 50.184 W
5,800.0	2.31	213.05	5,633.5	-1,090.7	-709.6	1,522,125.37	2,354,173.66	39° 14' 40.939 N	107° 46' 50.288 W
5,915.5	0.00	0.00	5,749.0	-1,092.6	-710.9	1,522,123.46	2,354,172.35	39° 14' 40.920 N	107° 46' 50.304 W
Vertical @ ETOG - ETOG: - ETOG (50' Radius) 28-16W									
6,000.0	0.00	0.00	5,833.5	-1,092.6	-710.9	1,522,123.46	2,354,172.35	39° 14' 40.920 N	107° 46' 50.304 W
6,200.0	0.00	0.00	6,033.5	-1,092.6	-710.9	1,522,123.46	2,354,172.35	39° 14' 40.920 N	107° 46' 50.304 W
6,400.0	0.00	0.00	6,233.5	-1,092.6	-710.9	1,522,123.46	2,354,172.35	39° 14' 40.920 N	107° 46' 50.304 W
6,600.0	0.00	0.00	6,433.5	-1,092.6	-710.9	1,522,123.46	2,354,172.35	39° 14' 40.920 N	107° 46' 50.304 W
6,800.0	0.00	0.00	6,633.5	-1,092.6	-710.9	1,522,123.46	2,354,172.35	39° 14' 40.920 N	107° 46' 50.304 W
7,000.0	0.00	0.00	6,833.5	-1,092.6	-710.9	1,522,123.46	2,354,172.35	39° 14' 40.920 N	107° 46' 50.304 W
7,015.5	0.00	0.00	6,849.0	-1,092.6	-710.9	1,522,123.46	2,354,172.35	39° 14' 40.920 N	107° 46' 50.304 W
CAMEO:									
7,200.0	0.00	0.00	7,033.5	-1,092.6	-710.9	1,522,123.46	2,354,172.35	39° 14' 40.920 N	107° 46' 50.304 W
7,400.0	0.00	0.00	7,233.5	-1,092.6	-710.9	1,522,123.46	2,354,172.35	39° 14' 40.920 N	107° 46' 50.304 W
7,600.0	0.00	0.00	7,433.5	-1,092.6	-710.9	1,522,123.46	2,354,172.35	39° 14' 40.920 N	107° 46' 50.304 W

New Tech

Planning Report - Geographic

Database:	EDM 2003.16 Single User Db	Local Co-ordinate Reference:	Well Piceance 28-16W
Company:	Piceance Energy, LLC	TVD Reference:	WELL @ 7604.0ft (Original Well Elev)
Project:	Mesa County, CO	MD Reference:	WELL @ 7604.0ft (Original Well Elev)
Site:	Piceance 28-11 Pad	North Reference:	True
Well:	Piceance 28-16W	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 10May14 kjs		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
7,715.5	0.00	0.00	7,549.0	-1,092.6	-710.9	1,522,123.46	2,354,172.35	39° 14' 40.920 N	107° 46' 50.304 W
ROLLINS:									
7,800.0	0.00	0.00	7,633.5	-1,092.6	-710.9	1,522,123.46	2,354,172.35	39° 14' 40.920 N	107° 46' 50.304 W
7,865.5	0.00	0.00	7,699.0	-1,092.6	-710.9	1,522,123.46	2,354,172.35	39° 14' 40.920 N	107° 46' 50.304 W
TD at 7865.5 - ETD:									

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
ETOG (50' Radius) 28-1	0.00	0.00	5,749.0	-1,092.6	-710.9	1,522,123.46	2,354,172.35	39° 14' 40.920 N	107° 46' 50.304 W
- plan hits target									
- Circle (radius 50.0)									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
1,500.0	1,470.8	8 5/8	8-5/8	8-5/8	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
7,715.5	7,549.0	ROLLINS:			
4,690.3	4,549.0	WILLIAMS FORK:			
7,015.5	6,849.0	CAMEO:			
7,865.5	7,699.0	ETD:			
5,915.5	5,749.0	ETOG:			

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
300.0	300.0	0.0	0.0	Start Build 2.75
853.9	847.4	-61.3	-39.9	Hold 15.23 Inclination
5,153.9	4,996.4	-1,008.3	-656.0	Start Drop -2.00
5,915.5	5,749.0	-1,092.6	-710.9	Vertical @ ETOG
7,865.5	7,699.0	-1,092.6	-710.9	TD at 7865.5