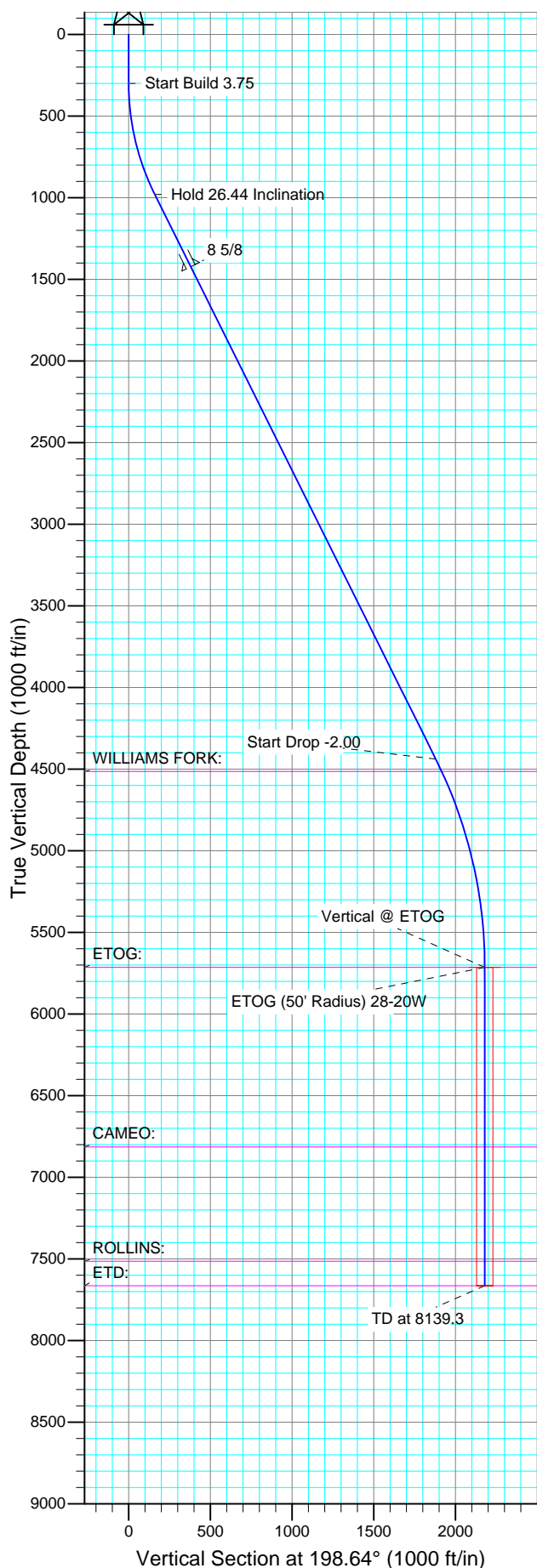




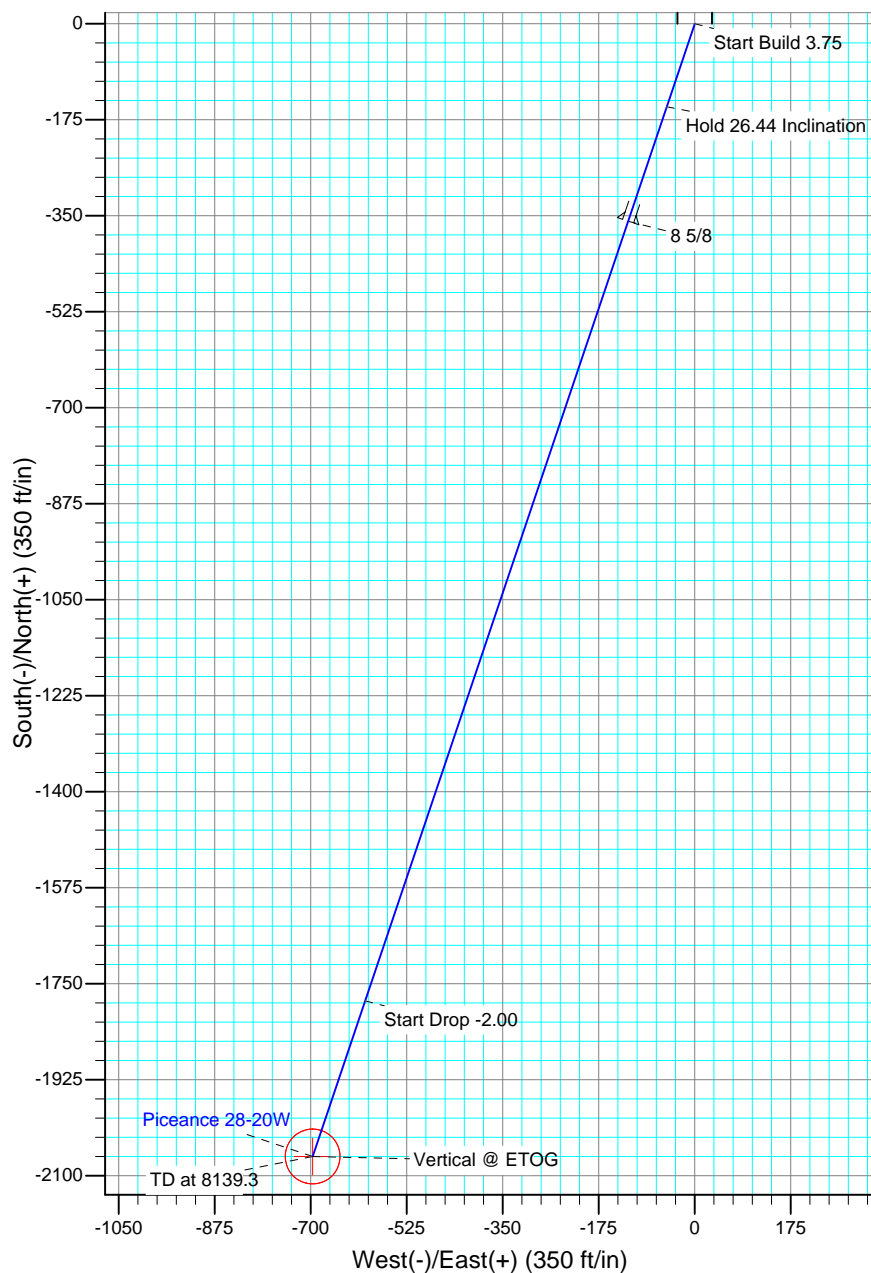
Well Name: Piceance 28-20W
Surface Location: Piceance 28-11 Pad
North American Datum 1983
US State Plane 1983 , Colorado Central Zone
Ground Elevation: 7580.0
WELL @ 7604.0ft (Original Well Elev)

Project: Mesa County, CO
Site: Piceance 28-11 Pad
Well: Piceance 28-20W
Wellbore: Wellbore #1
Design: Plan #1 10May14 kjs

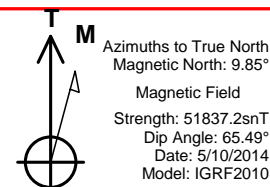
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1523169.01	2354901.15	39° 14' 51.432 N	107° 46' 41.376 W	



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	1005.2	26.44	198.64	980.4	-151.5	-51.1	3.75	198.64	159.9	
4	4867.1	26.44	198.64	4438.2	-1781.1	-600.9	0.00	0.00	1879.7	
5	6189.3	0.00	0.00	5714.0	-2065.1	-696.7	2.00	180.00	2179.5	ETOG (50' Radius) 28-20W
6	8139.3	0.00	0.00	7664.0	-2065.1	-696.7	0.00	0.00	2179.5	



FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
4514.0	4951.1	WILLIAMS FORK:
5714.0	6189.3	ETOG:
6814.0	7289.3	CAMEO:
7514.0	7989.3	ROLLINS:
7664.0	8139.3	ETD:



Piceance Energy, LLC

Mesa County, CO

Piceance 28-11 Pad

Piceance 28-20W

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 28-20W
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 28-20W	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 28-20W					
Well Position	+N/-S	0.0 ft	Northing:	1,523,169.01 ft	Latitude:	39° 14' 51.432 N
	+E/-W	0.0 ft	Easting:	2,354,901.15 ft	Longitude:	107° 46' 41.376 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)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	198.64

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(ft)	(ft)	Rate	Rate	Rate	(°)	
(ft)			(ft)			(°/100ft)	(°/100ft)	(°/100ft)		
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	
1,005.2	26.44	198.64	980.4	-151.5	-51.1	3.75	3.75	0.00	198.64	
4,867.1	26.44	198.64	4,438.2	-1,781.1	-600.9	0.00	0.00	0.00	0.00	
6,189.3	0.00	0.00	5,714.0	-2,065.1	-696.7	2.00	-2.00	0.00	180.00	ETOG (50' Radius) 26
8,139.3	0.00	0.00	7,664.0	-2,065.1	-696.7	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 28-20W
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 28-20W	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	1,523,169.01	2,354,901.15	39° 14' 51.432 N	107° 46' 41.376 W
200.0	0.00	0.00	200.0	0.0	0.0	1,523,169.01	2,354,901.15	39° 14' 51.432 N	107° 46' 41.376 W
300.0	0.00	0.00	300.0	0.0	0.0	1,523,169.01	2,354,901.15	39° 14' 51.432 N	107° 46' 41.376 W
Start Build 3.75									
400.0	3.75	198.64	399.9	-3.1	-1.0	1,523,165.94	2,354,900.02	39° 14' 51.401 N	107° 46' 41.389 W
600.0	11.25	198.64	598.1	-27.8	-9.4	1,523,141.44	2,354,891.07	39° 14' 51.157 N	107° 46' 41.495 W
800.0	18.75	198.64	791.1	-76.8	-25.9	1,523,092.86	2,354,873.31	39° 14' 50.673 N	107° 46' 41.706 W
1,000.0	26.25	198.64	975.8	-149.3	-50.4	1,523,021.02	2,354,847.05	39° 14' 49.956 N	107° 46' 42.016 W
1,005.2	26.44	198.64	980.4	-151.5	-51.1	1,523,018.86	2,354,846.26	39° 14' 49.935 N	107° 46' 42.026 W
Hold 26.44 Inclination									
1,200.0	26.44	198.64	1,154.8	-233.7	-78.8	1,522,937.38	2,354,816.47	39° 14' 49.122 N	107° 46' 42.378 W
1,400.0	26.44	198.64	1,333.9	-318.1	-107.3	1,522,853.73	2,354,785.89	39° 14' 48.288 N	107° 46' 42.740 W
1,500.0	26.44	198.64	1,423.5	-360.3	-121.5	1,522,811.90	2,354,770.60	39° 14' 47.871 N	107° 46' 42.921 W
8 5/8									
1,600.0	26.44	198.64	1,513.0	-402.5	-135.8	1,522,770.07	2,354,755.31	39° 14' 47.454 N	107° 46' 43.102 W
1,800.0	26.44	198.64	1,692.1	-486.9	-164.3	1,522,686.42	2,354,724.73	39° 14' 46.620 N	107° 46' 43.464 W
2,000.0	26.44	198.64	1,871.1	-571.3	-192.7	1,522,602.77	2,354,694.15	39° 14' 45.786 N	107° 46' 43.826 W
2,200.0	26.44	198.64	2,050.2	-655.7	-221.2	1,522,519.11	2,354,663.57	39° 14' 44.951 N	107° 46' 44.188 W
2,400.0	26.44	198.64	2,229.3	-740.0	-249.7	1,522,435.46	2,354,632.99	39° 14' 44.117 N	107° 46' 44.550 W
2,600.0	26.44	198.64	2,408.4	-824.4	-278.1	1,522,351.81	2,354,602.41	39° 14' 43.283 N	107° 46' 44.912 W
2,800.0	26.44	198.64	2,587.4	-908.8	-306.6	1,522,268.16	2,354,571.84	39° 14' 42.449 N	107° 46' 45.274 W
3,000.0	26.44	198.64	2,766.5	-993.2	-335.1	1,522,184.50	2,354,541.26	39° 14' 41.615 N	107° 46' 45.636 W
3,200.0	26.44	198.64	2,945.6	-1,077.6	-363.6	1,522,100.85	2,354,510.68	39° 14' 40.781 N	107° 46' 45.997 W
3,400.0	26.44	198.64	3,124.6	-1,162.0	-392.0	1,522,017.20	2,354,480.10	39° 14' 39.946 N	107° 46' 46.359 W
3,600.0	26.44	198.64	3,303.7	-1,246.4	-420.5	1,521,933.54	2,354,449.52	39° 14' 39.112 N	107° 46' 46.721 W
3,800.0	26.44	198.64	3,482.8	-1,330.8	-449.0	1,521,849.89	2,354,418.94	39° 14' 38.278 N	107° 46' 47.083 W
4,000.0	26.44	198.64	3,661.9	-1,415.2	-477.5	1,521,766.24	2,354,388.36	39° 14' 37.444 N	107° 46' 47.445 W
4,200.0	26.44	198.64	3,840.9	-1,499.6	-505.9	1,521,682.58	2,354,357.78	39° 14' 36.610 N	107° 46' 47.807 W
4,400.0	26.44	198.64	4,020.0	-1,584.0	-534.4	1,521,598.93	2,354,327.20	39° 14' 35.775 N	107° 46' 48.169 W
4,600.0	26.44	198.64	4,199.1	-1,668.4	-562.9	1,521,515.28	2,354,296.62	39° 14' 34.941 N	107° 46' 48.531 W
4,800.0	26.44	198.64	4,378.2	-1,752.8	-591.3	1,521,431.63	2,354,266.04	39° 14' 34.107 N	107° 46' 48.893 W
4,867.1	26.44	198.64	4,438.2	-1,781.1	-600.9	1,521,403.57	2,354,255.78	39° 14' 33.827 N	107° 46' 49.014 W
Start Drop -2.00									
4,951.1	24.76	198.64	4,514.0	-1,815.5	-612.5	1,521,369.46	2,354,243.31	39° 14' 33.487 N	107° 46' 49.162 W
WILLIAMS FORK:									
5,000.0	23.79	198.64	4,558.6	-1,834.5	-618.9	1,521,350.59	2,354,236.41	39° 14' 33.299 N	107° 46' 49.243 W
5,200.0	19.79	198.64	4,744.2	-1,904.8	-642.7	1,521,280.88	2,354,210.93	39° 14' 32.604 N	107° 46' 49.545 W
5,400.0	15.79	198.64	4,934.6	-1,962.7	-662.2	1,521,223.52	2,354,189.96	39° 14' 32.032 N	107° 46' 49.793 W
5,600.0	11.79	198.64	5,128.8	-2,007.9	-677.4	1,521,178.76	2,354,173.60	39° 14' 31.586 N	107° 46' 49.987 W
5,800.0	7.79	198.64	5,325.9	-2,040.1	-688.3	1,521,146.84	2,354,161.93	39° 14' 31.267 N	107° 46' 50.125 W
6,000.0	3.79	198.64	5,524.8	-2,059.2	-694.7	1,521,127.91	2,354,155.01	39° 14' 31.079 N	107° 46' 50.207 W
6,189.3	0.00	0.00	5,714.0	-2,065.1	-696.7	1,521,122.03	2,354,152.87	39° 14' 31.020 N	107° 46' 50.232 W
Vertical @ ETOG - ETOG: - ETOG (50' Radius) 28-20W									
6,200.0	0.00	0.00	5,724.7	-2,065.1	-696.7	1,521,122.03	2,354,152.87	39° 14' 31.020 N	107° 46' 50.232 W
6,400.0	0.00	0.00	5,924.7	-2,065.1	-696.7	1,521,122.03	2,354,152.87	39° 14' 31.020 N	107° 46' 50.232 W
6,600.0	0.00	0.00	6,124.7	-2,065.1	-696.7	1,521,122.03	2,354,152.87	39° 14' 31.020 N	107° 46' 50.232 W
6,800.0	0.00	0.00	6,324.7	-2,065.1	-696.7	1,521,122.03	2,354,152.87	39° 14' 31.020 N	107° 46' 50.232 W
7,000.0	0.00	0.00	6,524.7	-2,065.1	-696.7	1,521,122.03	2,354,152.87	39° 14' 31.020 N	107° 46' 50.232 W
7,200.0	0.00	0.00	6,724.7	-2,065.1	-696.7	1,521,122.03	2,354,152.87	39° 14' 31.020 N	107° 46' 50.232 W
7,289.3	0.00	0.00	6,814.0	-2,065.1	-696.7	1,521,122.03	2,354,152.87	39° 14' 31.020 N	107° 46' 50.232 W
CAMEO:									
7,400.0	0.00	0.00	6,924.7	-2,065.1	-696.7	1,521,122.03	2,354,152.87	39° 14' 31.020 N	107° 46' 50.232 W
7,600.0	0.00	0.00	7,124.7	-2,065.1	-696.7	1,521,122.03	2,354,152.87	39° 14' 31.020 N	107° 46' 50.232 W

New Tech

Planning Report - Geographic

Database:	EDM 2003.16 Single User Db	Local Co-ordinate Reference:	Well Piceance 28-20W
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 28-20W	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
7,800.0	0.00	0.00	7,324.7	-2,065.1	-696.7	1,521,122.03	2,354,152.87	39° 14' 31.020 N	107° 46' 50.232 W
7,989.3	0.00	0.00	7,514.0	-2,065.1	-696.7	1,521,122.03	2,354,152.87	39° 14' 31.020 N	107° 46' 50.232 W
ROLLINS:									
8,000.0	0.00	0.00	7,524.7	-2,065.1	-696.7	1,521,122.03	2,354,152.87	39° 14' 31.020 N	107° 46' 50.232 W
8,139.3	0.00	0.00	7,664.0	-2,065.1	-696.7	1,521,122.03	2,354,152.87	39° 14' 31.020 N	107° 46' 50.232 W
TD at 8139.3 - 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) 28-2	0.00	0.00	5,714.0	-2,065.1	-696.7	1,521,122.03	2,354,152.87	39° 14' 31.020 N	107° 46' 50.232 W
- plan hits target									
- Circle (radius 50.0)									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
1,500.0	1,423.5	8 5/8	8-5/8	8-5/8	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,189.3	5,714.0	ETOG:			
8,139.3	7,664.0	ETD:			
7,289.3	6,814.0	CAMEO:			
7,989.3	7,514.0	ROLLINS:			
4,951.1	4,514.0	WILLIAMS FORK:			

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
300.0	300.0	0.0	0.0	Start Build 3.75
1,005.2	980.4	-151.5	-51.1	Hold 26.44 Inclination
4,867.1	4,438.2	-1,781.1	-600.9	Start Drop -2.00
6,189.3	5,714.0	-2,065.1	-696.7	Vertical @ ETOG
8,139.3	7,664.0	-2,065.1	-696.7	TD at 8139.3