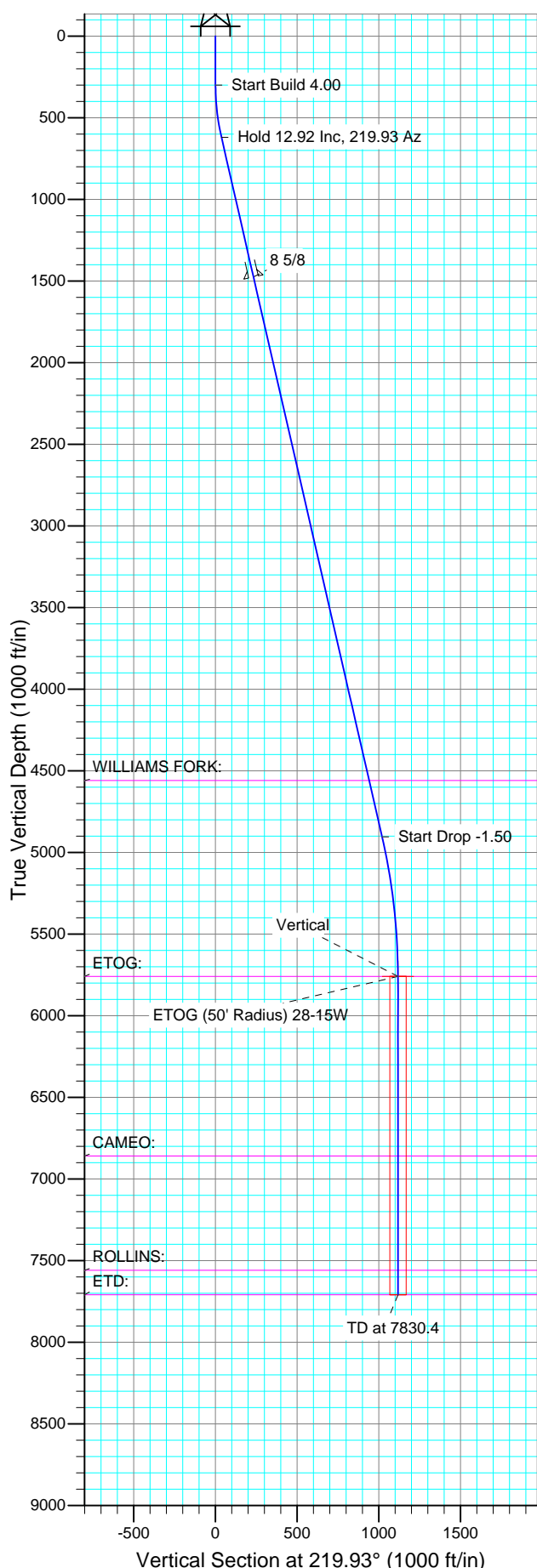




Well Name: Piceance 28-15W
Surface Location: Piceance 28-11 Pad
North American Datum 1983
US State Plane 1983 , Colorado Central Zone
Ground Elevation: 7580.0
WELL @ 7604.0ft (Original Well Elev)

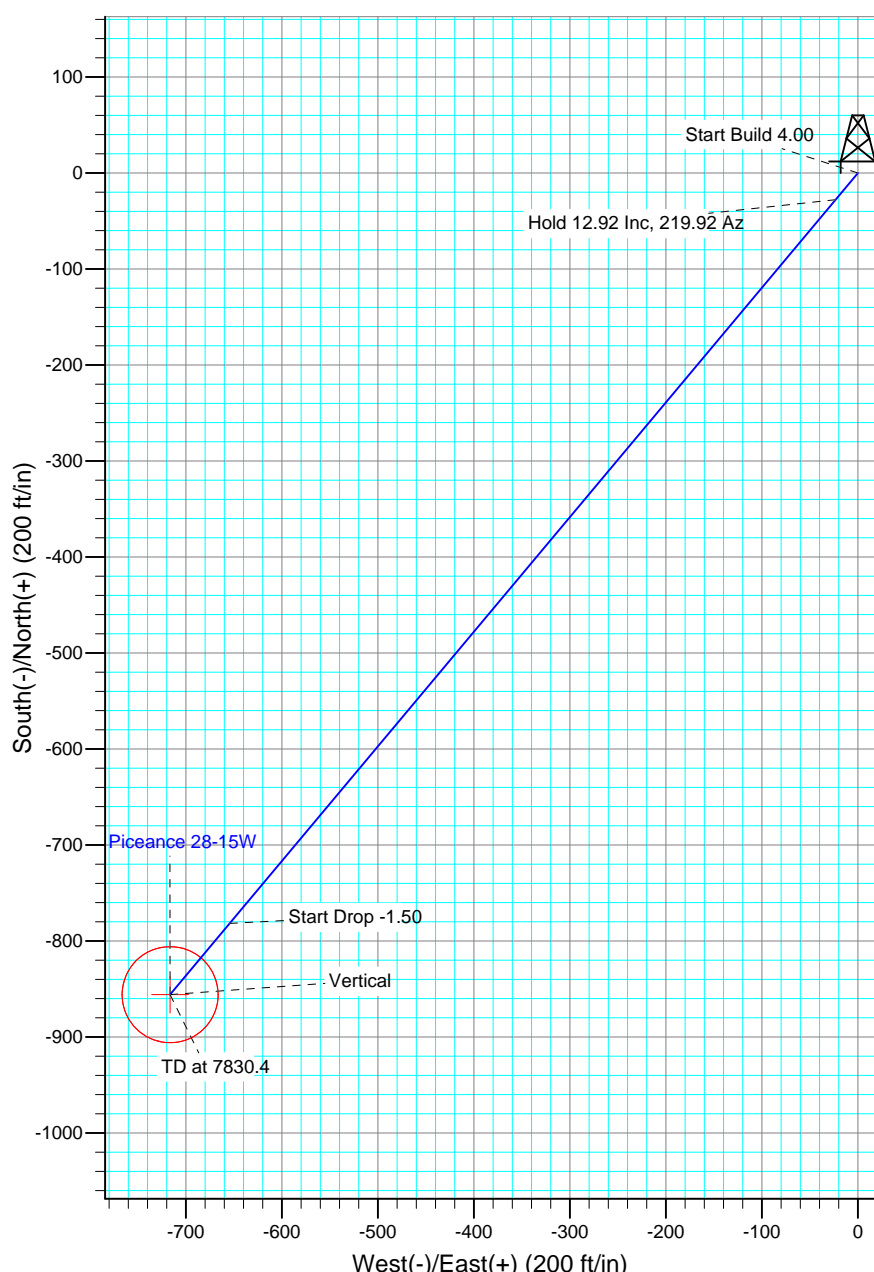
Project: Mesa County, CO
Site: Piceance 28-11 Pad
Well: Piceance 28-15W
Wellbore: Wellbore #1
Design: Plan #1 10May14 kjs

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1523212.42	2354913.57	39° 14' 51.864 N	107° 46' 41.232 W	



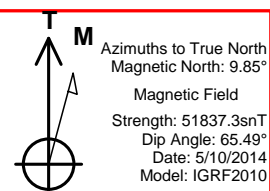
SECTION DETAILS

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	623.1	12.92	219.93	620.4	-27.8	-23.3	4.00	219.93	36.3	
4	5018.7	12.92	219.93	4904.7	-781.7	-654.4	0.00	0.00	1019.4	
5	5880.4	0.00	0.00	5759.0	-855.9	-716.5	1.50	180.00	1116.2	ETOG (50' Radius) 28-15W
6	7830.4	0.00	0.00	7709.0	-855.9	-716.5	0.00	0.00	1116.2	



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4559.0	4664.1	WILLIAMS FORK:
5759.0	5880.4	ETOG:
6859.0	6980.4	CAMEO:
7559.0	7680.4	ROLLINS:
7709.0	7830.4	ETD:



Piceance Energy, LLC

Mesa County, CO

Piceance 28-11 Pad

Piceance 28-15W

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 28-15W
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 28-15W	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 28-15W					
Well Position	+N/-S	0.0 ft	Northing:	1,523,212.42 ft	Latitude:	39° 14' 51.864 N
	+E/-W	0.0 ft	Easting:	2,354,913.57 ft	Longitude:	107° 46' 41.232 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	219.93

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	
623.1	12.92	219.93	620.4	-27.8	-23.3	4.00	4.00	0.00	219.93	
5,018.7	12.92	219.93	4,904.7	-781.7	-654.4	0.00	0.00	0.00	0.00	
5,880.4	0.00	0.00	5,759.0	-855.9	-716.5	1.50	-1.50	0.00	180.00	ETOG (50' Radius) 2%
7,830.4	0.00	0.00	7,709.0	-855.9	-716.5	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 28-15W
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 28-15W	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	1,523,212.42	2,354,913.57	39° 14' 51.864 N	107° 46' 41.232 W
200.0	0.00	0.00	200.0	0.0	0.0	1,523,212.42	2,354,913.57	39° 14' 51.864 N	107° 46' 41.232 W
300.0	0.00	0.00	300.0	0.0	0.0	1,523,212.42	2,354,913.57	39° 14' 51.864 N	107° 46' 41.232 W
Start Build 4.00									
400.0	4.00	219.93	399.9	-2.7	-2.2	1,523,209.80	2,354,911.26	39° 14' 51.838 N	107° 46' 41.260 W
600.0	12.00	219.93	597.8	-24.0	-20.1	1,523,188.93	2,354,892.88	39° 14' 51.627 N	107° 46' 41.487 W
623.1	12.92	219.93	620.4	-27.8	-23.3	1,523,185.19	2,354,889.58	39° 14' 51.589 N	107° 46' 41.528 W
Hold 12.92 Inclination									
800.0	12.92	219.93	792.8	-58.2	-48.7	1,523,155.50	2,354,863.43	39° 14' 51.289 N	107° 46' 41.851 W
1,000.0	12.92	219.93	987.7	-92.5	-77.4	1,523,121.93	2,354,833.87	39° 14' 50.950 N	107° 46' 42.216 W
1,200.0	12.92	219.93	1,182.7	-126.8	-106.1	1,523,088.36	2,354,804.30	39° 14' 50.611 N	107° 46' 42.581 W
1,400.0	12.92	219.93	1,377.6	-161.1	-134.8	1,523,054.79	2,354,774.74	39° 14' 50.272 N	107° 46' 42.946 W
1,500.0	12.92	219.93	1,475.1	-178.2	-149.2	1,523,038.00	2,354,759.95	39° 14' 50.102 N	107° 46' 43.129 W
8 5/8									
1,600.0	12.92	219.93	1,572.5	-195.4	-163.5	1,523,021.22	2,354,745.17	39° 14' 49.933 N	107° 46' 43.311 W
1,800.0	12.92	219.93	1,767.5	-229.7	-192.3	1,522,987.65	2,354,715.60	39° 14' 49.594 N	107° 46' 43.676 W
2,000.0	12.92	219.93	1,962.4	-264.0	-221.0	1,522,954.08	2,354,686.04	39° 14' 49.255 N	107° 46' 44.041 W
2,200.0	12.92	219.93	2,157.3	-298.3	-249.7	1,522,920.51	2,354,656.47	39° 14' 48.916 N	107° 46' 44.406 W
2,400.0	12.92	219.93	2,352.3	-332.6	-278.4	1,522,886.94	2,354,626.91	39° 14' 48.577 N	107° 46' 44.771 W
2,600.0	12.92	219.93	2,547.2	-366.9	-307.1	1,522,853.37	2,354,597.34	39° 14' 48.238 N	107° 46' 45.136 W
2,800.0	12.92	219.93	2,742.1	-401.2	-335.8	1,522,819.80	2,354,567.78	39° 14' 47.899 N	107° 46' 45.501 W
3,000.0	12.92	219.93	2,937.0	-435.5	-364.6	1,522,786.23	2,354,538.21	39° 14' 47.560 N	107° 46' 45.866 W
3,200.0	12.92	219.93	3,132.0	-469.8	-393.3	1,522,752.66	2,354,508.64	39° 14' 47.221 N	107° 46' 46.231 W
3,400.0	12.92	219.93	3,326.9	-504.1	-422.0	1,522,719.09	2,354,479.08	39° 14' 46.882 N	107° 46' 46.596 W
3,600.0	12.92	219.93	3,521.8	-538.4	-450.7	1,522,685.52	2,354,449.51	39° 14' 46.542 N	107° 46' 46.961 W
3,800.0	12.92	219.93	3,716.8	-572.7	-479.4	1,522,651.95	2,354,419.95	39° 14' 46.203 N	107° 46' 47.326 W
4,000.0	12.92	219.93	3,911.7	-607.0	-508.1	1,522,618.38	2,354,390.38	39° 14' 45.864 N	107° 46' 47.691 W
4,200.0	12.92	219.93	4,106.6	-641.3	-536.8	1,522,584.81	2,354,360.82	39° 14' 45.525 N	107° 46' 48.056 W
4,400.0	12.92	219.93	4,301.6	-675.6	-565.6	1,522,551.23	2,354,331.25	39° 14' 45.186 N	107° 46' 48.421 W
4,600.0	12.92	219.93	4,496.5	-709.9	-594.3	1,522,517.66	2,354,301.68	39° 14' 44.847 N	107° 46' 48.786 W
4,664.1	12.92	219.93	4,559.0	-720.9	-603.5	1,522,506.90	2,354,292.21	39° 14' 44.739 N	107° 46' 48.903 W
WILLIAMS FORK:									
4,800.0	12.92	219.93	4,691.4	-744.2	-623.0	1,522,484.09	2,354,272.12	39° 14' 44.508 N	107° 46' 49.151 W
5,000.0	12.92	219.93	4,886.4	-778.5	-651.7	1,522,450.52	2,354,242.55	39° 14' 44.169 N	107° 46' 49.516 W
5,018.7	12.92	219.93	4,904.7	-781.7	-654.4	1,522,447.38	2,354,239.78	39° 14' 44.137 N	107° 46' 49.550 W
Start Drop -1.50									
5,200.0	10.21	219.93	5,082.2	-809.6	-677.7	1,522,420.11	2,354,215.77	39° 14' 43.862 N	107° 46' 49.847 W
5,400.0	7.21	219.93	5,279.9	-832.8	-697.1	1,522,397.40	2,354,195.76	39° 14' 43.633 N	107° 46' 50.094 W
5,600.0	4.21	219.93	5,478.9	-848.0	-709.9	1,522,382.48	2,354,182.62	39° 14' 43.482 N	107° 46' 50.256 W
5,800.0	1.21	219.93	5,678.6	-855.3	-716.0	1,522,375.39	2,354,176.38	39° 14' 43.410 N	107° 46' 50.333 W
5,880.4	0.00	0.00	5,759.0	-855.9	-716.5	1,522,374.76	2,354,175.82	39° 14' 43.404 N	107° 46' 50.340 W
Vertical @ ETOG - ETOG: - ETOG (50' Radius) 28-15W									
6,000.0	0.00	0.00	5,878.6	-855.9	-716.5	1,522,374.76	2,354,175.82	39° 14' 43.404 N	107° 46' 50.340 W
6,200.0	0.00	0.00	6,078.6	-855.9	-716.5	1,522,374.76	2,354,175.82	39° 14' 43.404 N	107° 46' 50.340 W
6,400.0	0.00	0.00	6,278.6	-855.9	-716.5	1,522,374.76	2,354,175.82	39° 14' 43.404 N	107° 46' 50.340 W
6,600.0	0.00	0.00	6,478.6	-855.9	-716.5	1,522,374.76	2,354,175.82	39° 14' 43.404 N	107° 46' 50.340 W
6,800.0	0.00	0.00	6,678.6	-855.9	-716.5	1,522,374.76	2,354,175.82	39° 14' 43.404 N	107° 46' 50.340 W
6,980.4	0.00	0.00	6,859.0	-855.9	-716.5	1,522,374.76	2,354,175.82	39° 14' 43.404 N	107° 46' 50.340 W
CAMEO:									
7,000.0	0.00	0.00	6,878.6	-855.9	-716.5	1,522,374.76	2,354,175.82	39° 14' 43.404 N	107° 46' 50.340 W
7,200.0	0.00	0.00	7,078.6	-855.9	-716.5	1,522,374.76	2,354,175.82	39° 14' 43.404 N	107° 46' 50.340 W
7,400.0	0.00	0.00	7,278.6	-855.9	-716.5	1,522,374.76	2,354,175.82	39° 14' 43.404 N	107° 46' 50.340 W
7,600.0	0.00	0.00	7,478.6	-855.9	-716.5	1,522,374.76	2,354,175.82	39° 14' 43.404 N	107° 46' 50.340 W

New Tech

Planning Report - Geographic

Database:	EDM 2003.16 Single User Db	Local Co-ordinate Reference:	Well Piceance 28-15W
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 28-15W	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
7,680.4	0.00	0.00	7,559.0	-855.9	-716.5	1,522,374.76	2,354,175.82	39° 14' 43.404 N	107° 46' 50.340 W
ROLLINS:									
7,800.0	0.00	0.00	7,678.6	-855.9	-716.5	1,522,374.76	2,354,175.82	39° 14' 43.404 N	107° 46' 50.340 W
7,830.4	0.00	0.00	7,709.0	-855.9	-716.5	1,522,374.76	2,354,175.82	39° 14' 43.404 N	107° 46' 50.340 W
TD at 7830.4 - ETD:									

Targets									
Target Name									
- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- Shape									
ETOG (50' Radius) 28-1	0.00	0.00	5,759.0	-855.9	-716.5	1,522,374.76	2,354,175.82	39° 14' 43.404 N	107° 46' 50.340 W
- plan hits target									
- Circle (radius 50.0)									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
1,500.0	1,475.1	8 5/8	8-5/8	8-5/8	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,980.4	6,859.0	CAMEO:			
4,664.1	4,559.0	WILLIAMS FORK:			
7,830.4	7,709.0	ETD:			
5,880.4	5,759.0	ETOG:			
7,680.4	7,559.0	ROLLINS:			

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 4.00
623.1	620.4	-27.8	-23.3	Hold 12.92 Inclination
5,018.7	4,904.7	-781.7	-654.4	Start Drop -1.50
5,880.4	5,759.0	-855.9	-716.5	Vertical @ ETOG
7,830.4	7,709.0	-855.9	-716.5	TD at 7830.4