

Piceance Energy, LLC
Piceance Federal 28-21E
Slot A-11
Patterson 306 (22-ft KB)

API # : 05-077-10250-00
NE/4 SW/4 S28/T9S/R93W/6th PM
Mesa County, CO
Date of diagram : 10/15/2015

Vertical datum

----- 7701' RKB Elevation

----- 7679' Pad Elevation

16" OD Conductor 82 -ft MD RKB
(in 26" hole, grouted to ground level)

8-5/8" Shoe 1658 -ft MD RKB
11" Hole 1668 -ft MD RKB

Formation	Prognosis
'G' Sand	3202 -ft MD RKB
Williams Fork	5366 -ft MD RKB
Top of Gas	6610 -ft MD RKB
Cameo	7710 -ft MD RKB
Base Cameo Coal	8368 -ft MD RKB
Rollins	8410 -ft MD RKB

Top of 20'
Marker Joint 6812 -ft MD RKB

Top of 20'
Marker Joint 7670 -ft MD RKB

4-1/2" Float Collar (PBTD) 8481 -ft MD RKB
4-1/2" Float Shoe 8564 -ft MD RKB
7-7/8" Hole TD 8574 -ft MD RKB

Cementing details

8-5/8" 24# J55 STC Surface Csg	Lead	Tail
Density (ppg)	12.3	12.8
Volume (sx)	192	135
Yield (cf/sx)	2.45	2.17
Top (ft RKB)	Surface	1000
Bottom (ft RKB)	1000	1658
Returns (full or partial)	Full	Full

4-1/2" 11.6# 180 LTC Production Csg	Lead	Tail	Displacement
Density (ppg)	12.7	13.5	8.3 ppg
Volume (sx)	1098	446	131 bbls
Yield (cf/sx)	1.64	1.75	N/A
Est Top (ft RKB)	1022	6410	N/A
Est Bottom (ft RKB)	6410	8564	N/A
Returns (full or partial)	Full	Full	Full

Other Remarks : Surface = 30 bbls of cmt to surface full returns
= 0 bbls of Spacer Production