



NIGHTHAWK PRODUCTION LLC

Craig 4-33
NWNW Sec 33, T13S, R55W
LINCOLN COUNTY, COLORADO
API No. 05-73-06370

ELEVATION
R.B. 12'
G.L. 5018'
KB 5030'
BHT 165 °
Spud date: 10/19/09
Completion 11/10/09

Lat: 38.87792
Long: 103.56891
660' FNL 660' FWL

Not to scale

Prepared By: Harold Mayland
Date: 4/10/2017

Geological tops Estimated:

Niobrara	2168	Hebner	5712'
Codell	2771	LKC	5778'
Dakota D	3196	Marmaton	6199'
Dakota J	3260	Cherokee	6449'
Wolfcamp	4884	Atoka	6691'
Shawnee	5639	Spergen	7441'

Drilled hole 17 1/2"
SURFACE CSG: 13 3/8" 48# H-40 ST&C @ 400'
Cmt: 365 sks
Cmt to surface

Drilled hole 8 3/4"
Production Casing: 7" 26# K55 LT&C @ 7,200'
Cmt 460 sks did not circ.

Production Tubing

TOC @ 4,472' (CBL)
CBL

7" 26# K55		2 7/8" J55 EU 8RD		2 7/8" X 7"	
I.D.	6.276	I.D.	2.441		
Drift	6.151	Drift	2.347		
Burst	4,980	Burst	7,700		
Lin ft/bbl	0.0383	Lin ft/bbl	172.7500	Lin ft/bbl	32.29
BBL/linft	26.135	BBL/linft	0.00579	BBL/linft	0.0302

	Qty	Length	Depth in hole
Tubing			
	Avg jt length 32.59		
KB difference		10.00	10.00
			10.00
2 7/8" EU 8RD J55 tbg	173	5,638.53	5,648.53
TAC		2.34	5,650.87
2 7/8" EU 8RD J55 tbg	8	257.90	5,908.77
Seating Nipple		1.10	5,909.87
Mud anchor		14.95	5,924.82
Total Joints		181	
Rods			
Polish rod 1 1/2" x 22'	1		
Pony rod 4' x 7/8" S88	1		
Pony rod			
7/8" rods EL	77		
3/4" rods EL	147		
1 1/2 K bars	10		
Stabiizer pony rod 7/8"	1		
2 1/2" x 1 3/4" x 20' RHBC pump	1		

Hebner
5736-40'

Marmaton
6,252-6,264'
6,366-6,372'

Cherokee "A"
6455-6460' 3 SPF

Cherokee "C"
6568-6572' 3 SPF

U & L Atoka
6839-6845' 3 SPF
6854-6858' 0.52" hole
6864-6868' 30" penetration
6886-6890' (11/17/09)
6918-6922'
6936-6940'
6954-6958'
6962-6966'
6973-6977'

CIBP @ 6,445'

CIBP @ 6,500'

Composite BP @6,800' (4/14/10)

PBTD @ 7,143'
Collar @

Shoe @ 7,200'

TD 7,572'

NOTE:

11/17/09 Perf L & U Atoka 6839-6977'
11/18/09 Frac Atoka w/4000 gal 15% HCL, 20,000# 12/40 sand, 1,093 bbls x-link gelled wtr.
04/14/10 Perf Cherokee "C" 6,568-72'
04/20/10 Frac Cherokee "C" w/2000 gal 15% HCL, 22,500# 20/40 sand, 953 bbls x-linked gelled wtr.
01/04/11 Perf Cherokee "A" 6,455-60'
Acidize w/2000 gal 15% HCL
04/17/12 Set CIBP @ 6,505', Perf Marmaton 6,252'-6,372'
04/20/12 Acidize 6,252'-6,264' w/1200 gal 15% MCA.
05/31/12 Set CIBP @ 6,445'.