

INTERNAL GEOLOGIC & DRILLING PROGNOSIS

Prepared: 12-Aug-13 RJK

WELL NAME:

PA 701-32 HN1 (Pilot Hole)

PA 13-32 Pad

STATE:

Colorado

COUNTY:

Garfield

SURFACE LOCATION:

Sec. 32, T 6 S, R 95 W, Currently statewide spacing

BOTTOM HOLE LOCATION:

Sec. 5, T 7 S, R 95 W, Currently statewide spacing

TYPE OF UNIT:

4-Section Spacing Unit (Sec 31, 32 of T6S R95W and Sec 26, 27 of T7S R95W)

SURFACE HOLE:

2124' FSL, 905' FWL, NW 1/4 SW 1/4, Section 32 - T6S-R95W

BOTTOM HOLE:

619' FSL, 826' FWL, SW 1/4 SW 1/4, Section 5 - T7S-R95W

ELEVATION (ft):

PAD: 5,209

GROUND: 5,209

KELLY BUSHING: 5,234

RIG INFORMATION:

NAME: Aztec 1000

KB HEIGHT (FT): 25

ESTIMATE TOPS:

Formation	md	tvd	subsea (SHL)	Comments
Wasatch	Surface	Surface	Surface	
Top of "G" Sand	1,452	1,452	3782	
Base of "G" Sand	1,490	1,490	3744	
Top Fort Union	1,682	1,682	3552	
Base Fort Union	2,027	2,027	3207	
Surface Casing	2,152	2,152	3082	
Mesaverde	3,410	3,410	1824	
Approx. Top Gas	4,706	4,706	528	
Cameo Coals	5,992	5,992	-758	
Rollins SS	6,568	6,568	-1334	
Cozzette	6,861	6,861	-1627	
Corcoran	7,143	7,143	-1909	
Upper Sego	7,318	7,318	-2084	
Lower Sego	7,643	7,643	-2409	
Loyd A	8,202	8,202	-2968	
Castlegate	8,701	8,701	-3467	
Castlegate Bentonite	8,903	8,903	-3669	
Morapos	8,974	8,974	-3740	
Mancos-B	9,106	9,106	-3872	
Base Mancos-B	9,645	9,645	-4411	
Kick Off Point	10,050	NA	NA	
Top Niobrara (hot GR)	10,337	10,317	-5083	
Horizontal Target (HN1)	10,600	10,747	-5513	
Landing Point	11,216	10,765	-5531	
TD	17,219	10,420	-5186	

MUD LOGGING (md):

Two-man mudlogging unit
3 sets of dry cuts at 30' sample rate

LOGGING PROGRAM:

LWD

First Pass:	LWD GR	Combined Tool Gamma Ray	Base Interval Well TD	Top Interval Kick Off Point
SCIENTIFIC				

Strap drill pipe by latest trip prior to TD

CSG & CEMENT PROGRAM: SHOE TEST REQUIRED

	csq size (in)	depth set at (tvd)	depth set at (md)	hole size (in)	Approx Cmt Tail (ft3)	Tail Yield (ft3/sk)	Approx Sx Tail	Approx mt Lead (ft)	Lead Yield (ft3/sk)	Approx Sx Lead	WOC (hrs)
Conductor:	20	80	80	24	Redimix to surface - approximately 52 sx						
Surface:	13-3/8	2,152	2,152	17-1/2	347	2.11	164	1147	2.37	484	8
Intermediate:	9-5/8	10,762	11,100	12-1/4	470	1.47	320	1,535	1.47	1044	8
Stage Tool:	9-5/8	4,700	4,700	12-1/4	470	1.40	336	664	1.40	474	8
Production:	5-1/2	10,420	17,219	7-7/8	1,293	1.49	868	-	-	-	-
		Surface (Sacks): 648			Intermediate (sacks): 2,174			Prod. (sacks): 868			

MUD PROGRAM:

(Do not deviate from mud engineer's recommendation without prior consent from Parachute office)

FROM (md)	TO (md)	TYPE MUD	#/GAL	VIS	WL	CHEMICALS
0	2,152	Spud	8.5-9.6	45-50	10-12	Bentonite and PAC-R
2,152	11,100	LSND	9.6-12.5	45-60	6-10	Sodium Bicarbonate, Desco and Lignite
11,100	17,219	LSND	12.5-16	45-60	6-8	Sodium Bicarbonate, Desco and Lignite

(Write mud added to system on tour sheets and report all mud mixed and daily cost in morning report)

LOST CIRCULATION:

Report depth and bbls of mud lost on morning report and tour sheet - Any severe lost circulation problems should be reported immediately to well supervisor.

SURVEYS:

Run every 100' on surface hole and trips unless otherwise instructed.

(note: if there are questions concerning TD or logging, please call Geologist)

WPX Geologists:	Office	Mobile	Home
	Ryan Kowalski	303-606-4051	303-888-2113
	Jon Cantwell	303-606-4273	720-480-0364
	Laura Levorsen	303-606-4392	303-913-0712