

**GEOLOGIC & DRILLING PROGNOSIS**

Prepared: 05-08-2014 BEP

**WELL NAME:** GM 411-12  
Directional from the pad GM 21-12

**STATE:** CO **API:** 05-045-22462

**COUNTY:** GARFIELD

**BOTTOM HOLE LOCATION:** Sec. 12 T 7S R 96W 10 Acre Fee

**TYPE OF UNIT:** W/2 Section 12 (320 Acre Unit)

**SURFACE HOLE FOOTAGE:** 1179' FNL 1894' FWL Sec. 12 T 7S R 96W

**BOTTOM HOLE FOOTAGE:** 220' FNL 1209' FWL Sec. 12 T 7S R 96W

**SURFACE HOLE XY:** 2276824.68 1601332.8

**BOTTOM HOLE XY:** 2276156.229 1602304.7

**FEDERAL EA:** NA

**HARDLINE:** No

**ELEVATION (ft):** PAD: 5125  
KELLY BUSHING: 5151

**RIG INFORMATION:**

**RIG NAME:** Nabors 573  
**KB HEIGHT (ft):** 26

**ESTIMATE TOPS:**

Formation	TVD	MD	Comments
Wasatch	Surface	Surface	
Top of "G" Sand	1351	1406	
Base of "G" Sand	1451	1513	
Mesaverde	3139	3320	(Water zones may be encountered within the upper portion of the Mesaverde)
Approx. Top Gas	4340	4536	
Cameo Coals	5671	5867	
Rollins SS	6140	6336	
TD	6240	6436	TD well 100 Ft. below top of Rollins

**MUD LOGGING (md):** 1563 to TD. (One man or computer unit with at least total gas and drill rate.)

**LOGGING PROGRAM:** Type of Log: Cased-hole Pulsed Neutron log (e.g. RMTE or RPM)  
Interval (md): GR from TD to surface  
Pulsed Neutron from TD to 200ft above the Mesaverde top (md)

Strap drill pipe by latest trip prior to TD

**CSG & CEMENT PROGRAM: SHOE TEST REQUIRED**

Conductor:	csq size (in)	depth set at (tvd)	depth set at (md)	hole size (in)	Approximate Cmt (ft3) Tail	Tail Yield ft <sup>3</sup> /Sx	Approx. Sx Tail	Approximate Cmt (ft3) Lead	Lead Yield ft <sup>3</sup> /Sx	Approx. SxLead	WOC (hrs)
Surface:	9 5/8"	1498	1563	13 1/2"	352	2.11	167	565	2.37	238	8
Intermediate:											
Liner or Production:	4 1/2"	6240	6436	8 3/4"	743	1.41	527	411	1.81	227	
					<b>Surface (Sacks): 405</b>		<b>Prod. (Sacks): 754</b>				

Surface cement volumes are calculated w/ 20% excess in gauge hole,  
Production cement: tail is calculated to be 300 ft above geologists pick of top of gas, lead TOC is calculated 300 ft above top of MVRD. 10% Excess added.

**ANTICIPATED PRESSURES**

MASP	Prod Csg Test Pressure	BHP	Pressure (psi)	Prod. Csg. Grade
2,150	7,000	3,120		E/I-80

**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
0	1563	Spud	9.0-9.5	45-50	
1563	6436	LSND	9.0-10.0	40-50	8-10

(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	Cell	Home
	Barb Pickup 303-260-4515	918-606-9605	
	Scott Meade	970-260-8131	