

Peakview Operating Company, LLC
Ence 1H
 SHL: 434' FSL 933' FWL (SW/4 SW/4)
 Sec. 3 T6N R90W
 BHL: ±673' FSL ±1,996' FEL (SW/4 SE/4)
 Sec. 4 T6N R90W
 Moffat County, Colorado
 Surface: Fee
 Mineral Lease: Fee

DRILLING PROGRAM
(All Drilling Procedures will be followed as Per Onshore Orders No. 1 and No. 2)

Please contact Mr. Bruce Patterson with New Tech Engineering at 303-941-7751, if there are any questions or concerns regarding this Drilling Program.

SURFACE ELEVATION – 6,206' (Un-graded ground elevation)

SURFACE FORMATION – Williams Fork – Freshwater possible

ESTIMATED FORMATION TOPS

Formation	True Vertical Depth	Measured Depth	Geology
Williams Fork	765'	765'	Sandstone
Fresh Water	1,833'	1,833'	Sandstone, shale & minor coal
Iles	2,633'	2,633'	Sandstone
Trout Creek Sand	2,765'	2,766'	Sandstone
Mancos	3,984'	1,862'	Sandstone
Maraposa	4,938'	4,983'	Sandstone
Mancos Marker	7,296'	7,341'	Sandstone & siltstone
Horizontal			
Niobrara	7,376'	7,421'	Shale, sandstone & limestone
Buck Peak Bench	7,376'	7,421'	Shale, sandstone & limestone
Tow Creek Bench	7,798'	7,843'	Shale, sandstone & limestone
Wolf Mountain	8,210'	8,288'	Shale, sandstone & limestone
Pilot			
Codell	8,512'	8,557'	Shale, sandstone & limestone
Total Depth	8,712'	10,906'	

ESTIMATED DEPTHS OF ANTICIPATED WATER, OIL, GAS, OR MINERAL BEARING FORMATIONS

Estimated depths at which water, oil, gas or other mineral-bearing formations are expected to be encountered:

Formation	True Vertical Depth	Measured Depth	Lithology
Williams Fork	765'	765'	Possible Fresh Water
Fresh Water	1,833'	1,833'	Fresh Water

Iles	2,633'	2,633'	Some water, oil, & gas bearing
Trout Creek Sand	2,765'	2,766'	Some water, oil, & gas bearing
Mancos	3,984'	1,862'	Some water, oil, & gas bearing
Maraposa	4,938'	4,983'	Some water, oil, & gas bearing
Mancos Marker	7,296'	7,341'	Some water, oil, & gas bearing
Horizontal			
Niobrara	7,376'	7,421'	Some oil & gas bearing
Buck Peak Bench	7,376'	7,421'	Some oil & gas bearing
Tow Creek Bench	7,798'	7,843'	Some oil & gas bearing
Wolf Mountain	8,210'	8,288'	Some oil & gas bearing
Pilot			
Codell	8,512'	8,557'	Some oil & gas bearing

All fresh water and prospectively valuable minerals encountered during drilling will be recorded by depth and protected.

HORIZONTAL DRILLING PROGRAM

- A) Kick-Off-Point (KOP) is estimated to be at $\pm 7,882'$ MD.
- B) A non-productive test will be run in the pilot-hole from 7,840' – 8,757' TVD. After the pilot hole is tested two cement plugs will be set from 7,650' – 8,757'.
- C) The horizontal portion of the well will kick off at $\pm 7,882'$ MD, will be drilled, and a liner will run the distance of the horizontal leg.

CASING PROGRAM

Total Depth (TD)	Hole Diameter	Casing Diameter	Casing Weight and Grade	Cement
0 – 120'	20"	16"	Conductor Casing	Redi Mix to surface
0' – 2,350'	14-3/4"	9-5/8"	36# J-55 ST&C New	Surface – 2,350': (Lead: ± 885 sxs Varicem (TM) Cement; Tail: ± 400 sxs Varicem (TM) Cement; Topout: ± 150 sxs Halicem (TM) System Cement) *
2,200' – 8,782'	8-3/4"	7"	23# HCP-110 ST&C New	2,200' – 8,782' (Lead: ± 395 sxs Econocem (TM) System; Tail: ± 260 sxs Extendacem (TM) System) **
Horizontal 7,840' – 10,906'	6-1/8"	4"	11.6# HCP-110 ST&C New	Open Hole

Pilot 0' – 8,757'	8-3/4"			7,650' – 8,757' Plug 1 (±240 sxs Plugcem (TM) System) *** Plug 2 (±355 sxs Plugcem (TM) System) ***
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* *Cement volume calculated with 100% excess.*

** *Cement volume calculated with 15% excess.*

*** *Cement volume calculated with 30% excess.*

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Yields:	Surface:	Lead:	Varicem (TM) Cement =	2.854 ft ³ /sx (11.5ppg) 17.085gps
		Tail:	Varicem (TM) Cement =	1.750 ft ³ /sx(13.5 ppg) 8.827 gps
		Top Out:	Halicem(TM) Cement =	1.198 ft ³ /sx(15.6 ppg) 5.278 gps
	Intermediate:	Lead:	Econocem (TM) System =	2.25 ft ³ /sx (12.20 ppg) 12.13 gps
		Tail:	Extendacem (TM) System =	1.30 ft ³ /sx (14.20 ppg) 5.49 gps
	Plug Back:	Plug 1:	Plugcem (TM) System =	1.15 ft ³ /sx (15.8 ppg) 4.97 gps
		Plug 2:	Plugcem (TM) System =	0.94 ft ³ /sx (17.5 ppg) 3.33 gps

Surface casing top 100' will use 1" tubing, with Class "G" cement with 2% CaCl₂ if necessary.

Cement additives – (Note: Some additives are Halliburton proprietary products. If another cement contractor is used, these blends and products may vary slightly).

Cement additives:

Surface:	Lead:	Varicem (TM) Cement 0.125 lb/sx Poly-E-Flake 5 lb/sx Kol-Seal
	Tail:	Varicem (TM) Cement 0.125 lb/sx Poly-E-Flake 5 lb/sx Kol-Seal

	Topout:	Halicem Cement 2% Calcium Chloride, Pellet
Intermediate:	Lead:	Econocem (TM) System 0.4% Halad(R)-344 0.125 lb/sx Poly-E-Flake 3 lb/sx Kol-Seal
	Tail:	Extendacem 0.2% Halad(R)-344 0.4% HR-5 0.125 lb/sx Poly-E-Flake 3 lb/sx Kol-Seal
Plugs:	Plug 1:	Plugcem (TM) System 0.1% HR-5 0.2% CFR-3
	Plug 2:	Plugcem (TM) System 0.1% CFR-3 0.2% HR-5

PRESSURE CONTROL

- See attached blowout preventer diagram.

BOPs and choke manifold will be installed and pressure tested before drilling out of surface casing (subsequent pressure test will be performed whenever pressure seals are broken), and then will be checked daily as to mechanical operating condition. BOPs will be pressure tested at least once every 30 days. Ram type preventers and related pressure control equipment will be pressure tested to related working pressure of the stack assembly if a test plug is used. If a plug is not used, the stack assembly will be tested to the rated working pressure of the stack assembly or 70% of the minimum internal yield of the casing, whichever is less. Annular type preventers will be pressure tested to 50% of their working pressure. All casing strings will be pressure tested to 0.22 psi/ft or 1,500 psi, whichever is greater, not to exceed 70% of the internal yield. If a 5M system or greater is used, the casing shoe will be tested by drilling 5-20' out from under the shoe and pressure tested to a maximum expected mud weight equivalent as shown in the mud program listed below.

A manual locking device (i.e. hand wheels) or automatic locking devices shall be installed on the BOP stack. Remote controls capable of both opening and closing all preventers shall be readily accessible to the driller.

The choke manifold and accumulator will meet or exceed Onshore Order No. 2 (OSO #2) standards. The BOP equipment will be tested after any repairs to the equipment. Pipe rams, blind rams and annular preventer will be activated on each trip and weekly BOP drills will be conducted with each crew. All tests, maintenance, and BOP drills will be documented on rig "tower sheets".

Statement of Accumulator System and Location of Hydraulic Controls

The drilling rig has not been selected for this well. Selection will take place after approval of this application is granted. Manual and/or hydraulic controls will be in compliance with OSO #2 for 2,000 psi system.

A remote accumulator will be used. Pressures, capacities, location of remote hydraulic and manual controls will be identified at the time of the BLM supervised BOP test.

MUD PROGRAM

0'	-	120'	Water
0'	-	2,350'	Fresh Water / Spud Mud
			M.W.: 8.4 – 8.7 ppg
			Visc.: 30 - 42
			WL: NC
			pH: 8.9 – 9.5
			Yield: 2 – 8
			LGS: ≤ 6
2,350'	-	8,757'	Pilot Hole
			Fresh Water / DAP Mud
			M.W.: 8.3 – 8.9 ppg
			Visc.: 28 - 35
			WL: 15 - 25
			pH: 7.0 – 8.3
			Yield: 6 - 12
			LGS: ≤ 6
7,600'	-	8,782'	PB, KOP, ICP
			Fresh Water / DAP Mud
			M.W.: 8.4 – 9.4 ppg
			Visc.: 34 - 48
			WL: 15 - 25
			pH: 7.0 – 8.3
			Yield: 8 - 15
			LGS: ≤ 6
8,782'	-	10,906'	Horizontal
			Fresh Water / DAP Mud
			M.W.: 8.4 – 9.4 ppg
			Visc.: 42 - 88
			WL: 15 - 25
			pH: 7.0 – 8.3
			Yield: 12 - 20
			LGS: ≤ 4

Sufficient mud materials to maintain mud properties, control lost circulation and to contain a “kick” will be available on location.

AUXILIARY EQUIPMENT

- A. Upper Kelly cock; lower Kelly cock will be installed while drilling and tested at the time of the BOP test.
- B. Inside BOP or stabbing valve with handle (available on rig floor).
- C. Safety valve(s) and subs to fit all string connections in use.
- D. Mud monitoring will be with a flow sensor, pit level indicator, and visual observation.

LOGGING, CORING TESTING PROGRAM

- A. Logging: 2,350' – 8,757': Triple Combo Log Package
4,000' – TD (Pilot): FMI Dipole Sonic
Surface – 2,350': GR/CBL
- B. Coring: 2,350' – 3,940': 20' samples
3,940' – TD: 10' samples
- C. Testing: None planned – Drill Stem tests may be run on shows of interest.

ABNORMAL CONDITIONS

- A. Pressures: No abnormal conditions are anticipated.
Anticipated BHP gradient: 0.43 psi/ft
- B. Temperatures: No abnormal conditions are anticipated.
- C. H₂S: None Anticipated.
- D. Estimated bottom hole pressure: 3,746 psi

ANTICIPATED START DATE

October 1, 2012

COMPLETION

The location pad will be sufficient size to accommodate all completion equipment activities and equipment. A string of 2-3/8", 4.7#, N-80, EUE 8rnd will be run as production tubing. A Sundry Notice (SN) will be submitted with a revised completion program if warranted.

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SURFACE CASING AND CENTRALIZER DESIGN

Proposed Total Depth: 8,712 ' MD: 10,906
 Proposed Depth of Surface Casing: 2,350 '
 Estimated Pressure Gradient: 0.43 psi/ft
 Bottom Hole Pressure at 8,712 '
 $0.43 \text{ psi/ft} \times 8,712 ' = 3,746 \text{ psi}$
 Hydrostatic Head of gas/oil mud: 0.22 psi/ft
 $0.22 \text{ psi/ft} \times 8,712 ' = 1,917 \text{ psi}$

Maximum Design Surface Pressure

Bottom Hole Pressure – Hydrostatic Head =
 $(0.43 \text{ psi/ft} \times 8,712 ') - (0.22 \text{ psi/ft} \times 8,712 ') =$
 $3,746 \text{ psi} - 1,917 \text{ psi} = 1,830 \text{ psi}$

Casing Strengths 9-5/8" J-55 36# ST&C

Wt.	Tension (lbs)	Burst (psi)	Collapse (psi)
36 #	394,000	3,520	2,020

Safety Factors

Tension (Dry): 1.8 Burst: 1.0 Collapse: 1.125

Tension (Dry): $36 \text{ # / ft} \times 2,350 ' = 84,600 \text{ #}$
 Safety Factor = $\frac{394,000}{84,600} = 4.66$ ok

Burst: Safety Factor = $\frac{3,520 \text{ psi}}{1,830 \text{ psi}} = 1.92$ ok

Collapse: Hydrostatic = $0.052 \times 9.0 \text{ ppg} \times 2,350 ' = 1,100 \text{ psi}$
 Safety Factor = $\frac{2,020 \text{ psi}}{1,100 \text{ psi}} = 1.84$ ok

Use 2,350 ' 9-5/8" J-55 36# ST&C

Use 2,000 psi minimum casinghead and BOP's

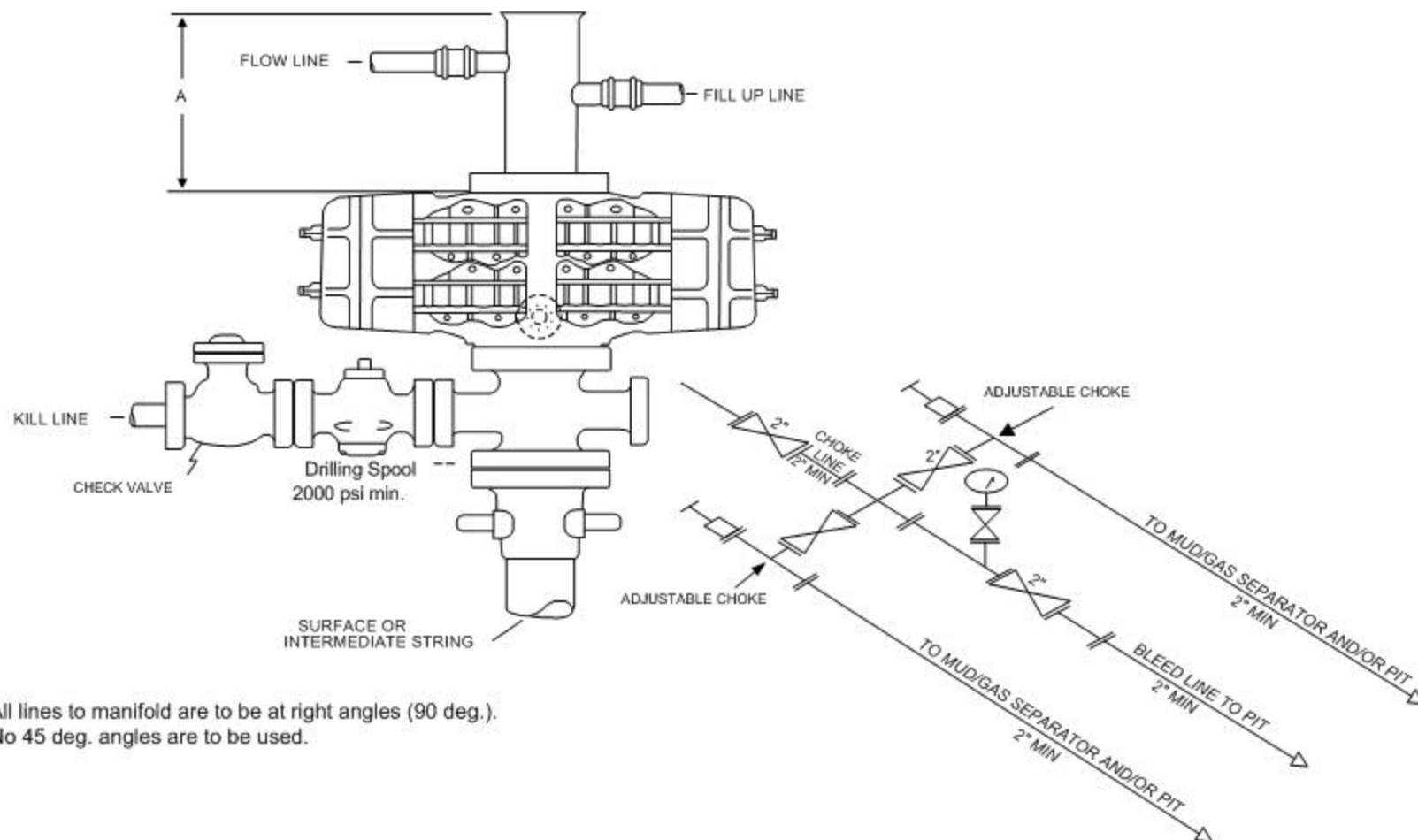
Centralizers

8 Total
 1 near surface at 160'
 3 -1 each at middle of bottom joint, second joint, third joint
 4 -1 each at every other joint ±80 ' spacing

Total centralized ± 600 ' (1,750 ' – 2,350 ')

Note that field experience indicates that additional centralizers greatly increase the chance of "sticking" the surface casing prior to reaching surface casing total depth.

ANNULAR PREVENTER MAY BE SUBSTITUTED FOR DOUBLE GATE PREVENTERS



All lines to manifold are to be at right angles (90 deg.).
No 45 deg. angles are to be used.

2M CHOKE MANIFOLD EQUIPMENT – CONFIGURATION MAY VARY

BLOWOUT PREVENTER

2,000 psi minimum