

## Ferme Farms 13-4L

Existing Features	
KB	13

Surface csg shoe at	505
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Bottom of Foxhills (FHM)	854
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Sussex Top	4169
Not producing Sussex w/in 1 mile	
Sussex Bottom	4410

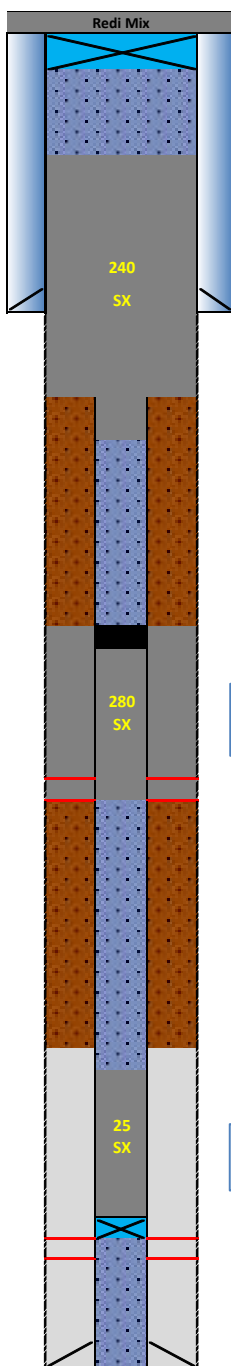
Shannon Base	4765
Not producing Shannon w/in 1 mile	

TOC (CBL)	6374
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Niobrara Top	6996
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Codell Top	7261
Perf Top	7261
Perf Bottom	7281

PBMD	7302
3 1/2" 7.7# CSG	7386



### Proposed Additions for P&A

80	CIBP 8 5/8" 23#
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405	TOC
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Cement Blend: Type III w/ 0.25 pps cello flake, 0.3% CFL-3, 0.3% CFR-2, and CaCl<sub>2</sub> as necessary, mixed at 14.8 ppg and 1.33 cuft/sk yield.

960	Casing Stub
1060	BOC

3960	TOC/Wiper Plug
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Cement Blend: 0:1:0 'G' w/ 0.25 pps cello flake, 0.5% CFR-2, 0.2% FMC, 0.5% LWA, mixed at 15.8 ppg and 1.15 cuft/sk yield.

4460	BOC/Squeeze Holes
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6590	TOC
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Cement Blend: Thermal 35 w/ 0.5% CFR-2 and 0.25% FMC, mixed at 15.6 ppg and 1.51 cuft/sk yield.

7200	CIBP 3 1/2" 7.7#
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API#	05-123-17715			
WINS:	H5446			
Equipment	Specs.	Depth	Capacity (bbl/ft)	Capacity ft <sup>3</sup> /ft
Surface Casing	8 5/8" (23#)	505	0.0637	0.3576
Production Casing	3 1/2" (7.7#)	7386	0.0091	0.0513
Production Tubing	2 1/16" (3.25#)	7257	0.0030	0.0167
Hole Size (TOP)	9	N/A	0.0787	0.4418
Hole Size (SU/SH)	10	N/A	0.0971	0.5454
OH X CSG Annulus (SU/SH)	N/A	N/A	0.0852	0.4786

Cement Calculations				
Section	Volume cu-ft	Cement Sacks	Excess	
Open Hole	241.22	181.36	20%	Foxhills Plug 9 in. hole
Surface Casing	35.76	26.89		
Production Casing	5.13	3.86		
FX Total	276.98	212.11	240	
OH X CSG Annulus	287.15	249.6983	20%	Sussex Squeeze 10 in. hole
Production Casing	25.67	22.32174		
SU Total	312.82	272.0201	280	
OH X CSG Annulus				
Production Casing	31.32	20.74		
NB/CD Total	31.32	20.74	25	

Cement Yield	1.33	1.15	1.51
	FX	SX/SH	NB

Legend	
	Existing cement with CBL
	New cement
	Assumed cement w/ no CBL
	Cast Iron Cement Retainer
	New Cast Iron Bridge Plug
	Wiper Plug
	Mud
	Water + Biocide