

HSR W.C.L. 4-1

Existing Features	
KB	10

8-5/8" 24# Surface csg shoe	712
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Bottom of Foxhills (FHM)	816
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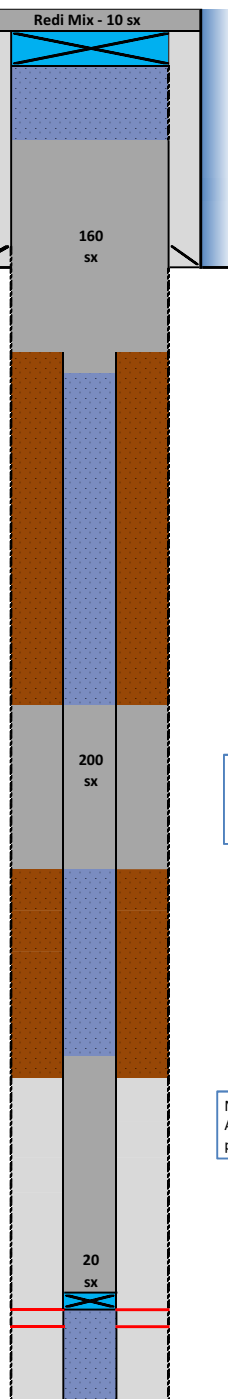
Sussex	Top	4288'
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SX & SH non productive within 1 mile

TOC Primary existing (CBL)	6518
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Nibrara	Top	6955
Nio	Perf Top	7035
	Perf Bottom	7038
Codell	Perf Top	7260
	Perf Bottom	7266

PBMD	7360
3-1/2" CSG 7.7#	7400



Proposed Additions for P&A	
80	CIBP (8-5/8")

612	TOC
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Cement Blend: Type III w/ cello flake and CaCl₂, mixed at 14.8 ppg and 1.33 cuft/sk. with 40%

916	Csg Stub
1016	Bottom of Cement

4088	TOC in csg
4088	TOC in annulus

Sussex Cement Blend: "G" w/ 0.25 pps cello flake , 0.4% CD-32, 0.4% ASA - 301, mixed at 15.8 ppg and 1.15 cuft/sk, with 20% excess and 10" hole size.

4488	BOC
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6465	TOC in csg
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NB Cement Blend: "G" w/ 20% silica flour , 0.4% CD -32, 0.4% ASA -301 and R-3 to achieve 2:30 pump time mixed at 15.8 ppg and 1.38 cuft/sk

7005	TOC in csg
7005	CIBP

API# 05-123-18854				
Well: HSR W.C.L. 4-1				
Equipment	Specs.	Depth	Capacity (bbl/ft)	Capacity ft ³ /ft
Surface Casing	8 5/8" 24#	712	0.0637	0.3576
Production Casing	3.50 (7.7#)	7400	0.00914	0.05134
Tubing Size				
Bit Size	7 7/8		0.0602	0.3382
Hole Size	9		0.0787	0.4418
Hole Size	10		0.0971	0.5454
Hole Size	12		0.1399	0.7854

Cement Calculations				
Section	Volume cu-ft	Cement Sacks	Excess	Top Plug
8-5/8" csg	35.76	26.89		9" Caliper to 7400'
OH	126.17	94.87	40%	
3-1/2" csg	5.13	3.86		
Total Top Plug	167.07	125.62	160	
212.8		cu-ft		

top CIGR annulus	208.79	181.55	20%	SX/ SH Plug 10" Caliper
Casing	20.54	17.86		
Total	229.32	199.41	200	
230		cu-ft		

NB/CD Csg	27.72	20.09		NB/CD Plug
Total	27.72	20.09	20	

Cement Yield	1.33	1.15	1.71	1.38
Top Plug	SX/SH	NB/Cd Squeeze	NB/Cd in pipe	

Legend	
	New cement
	Existing cement with CBL
	assumed cement w/ no CBL
	cast iron cement retainer
	cast iron bridge plug
	mud
	2% KCL Water