

CemCADE^{*} well cementing recommendation for Intermediate

Operator : Shell
Country :
State : Co

Well : Dawson Creek 1-25
Field : WFU/Swan

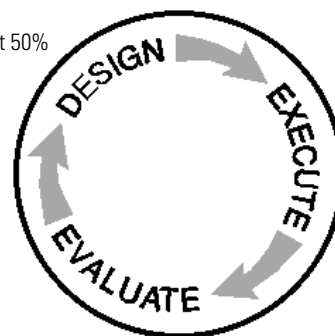
Prepared for : Keith Smelker
Proposal No. :
Date Prepared : 9-20-2012

Location :
Service Point : SWY - RockSprings
Business Phone : 1-307-352-5000
FAX No. :

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well description

Configuration	Casing	Stage : Single	Rig Type : Land
Prev.String	MD : 1600.0 ft	OD : 10 3/4 in	Weight : 40.5 lb/ft
Csg/Liner	MD : 6000.0 ft	OD : 7 5/8 in	Weight : 29.7 lb/ft
Landing Collar MD		5920.0 ft	
Casing/liner Shoe MD		6000.0 ft	
Mud Line		0.0 ft	
Total MD		6000.0 ft	
BHST		146 degF	
Bit Size		9 7/8 in	
Mean OH Diameter		9.875 in	
Mean Annular Excess		80.0 % volume pumped with centrilaiztion calculated at 50%	
Mean OH Equivalent Diameter		11.359 in	
Total OH Volume		551.4 bbl (including excess)	



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District : SWY - RockSprings
Loadcase : 2. Intermediate for well book



Section 1: fluid sequence

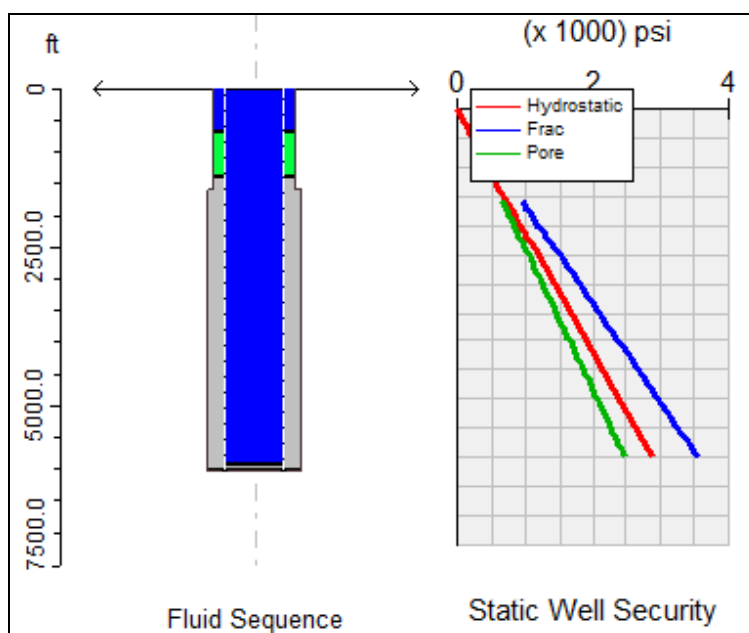
Job Objectives:

Cement Intermediate String

Original fluid	Water	8.32 lb/gal
	viscosity : 5.000 cP	
Displacement Volume	271.8 bbl	
Total Volume	616.8 bbl	
TOC	1400.0 ft	

Name	Volume (bbl)	Ann. Len (ft)	Top (ft)	Fluid Sequence Density (lb/gal)	Rheology
9.0 ppg MudPUSH OBM	30.0	720.5	679.5	9.00	Pv:15.000 cP Ty:10.00 lbf/100ft2
9.47 LiteCRETE	314.9	4600.0	1400.0	9.47	k:5.51E-3 lbf.s^n/ft2 n:0.768 Ty:8.91 lbf/100ft2
Water	271.8		0.0	8.32	viscosity:5.000 cP

Static Security Checks :		
Frac	227 psi	at 1600.0 ft
Pore	64 psi	at 1600.0 ft
Collapse	4803 psi	at 5920.0 ft
Burst	9470 psi	at 0.0 ft
Csg.Pump out	71 ton	
Check Valve Diff Press	295 psi	



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Section 2: pumping schedule

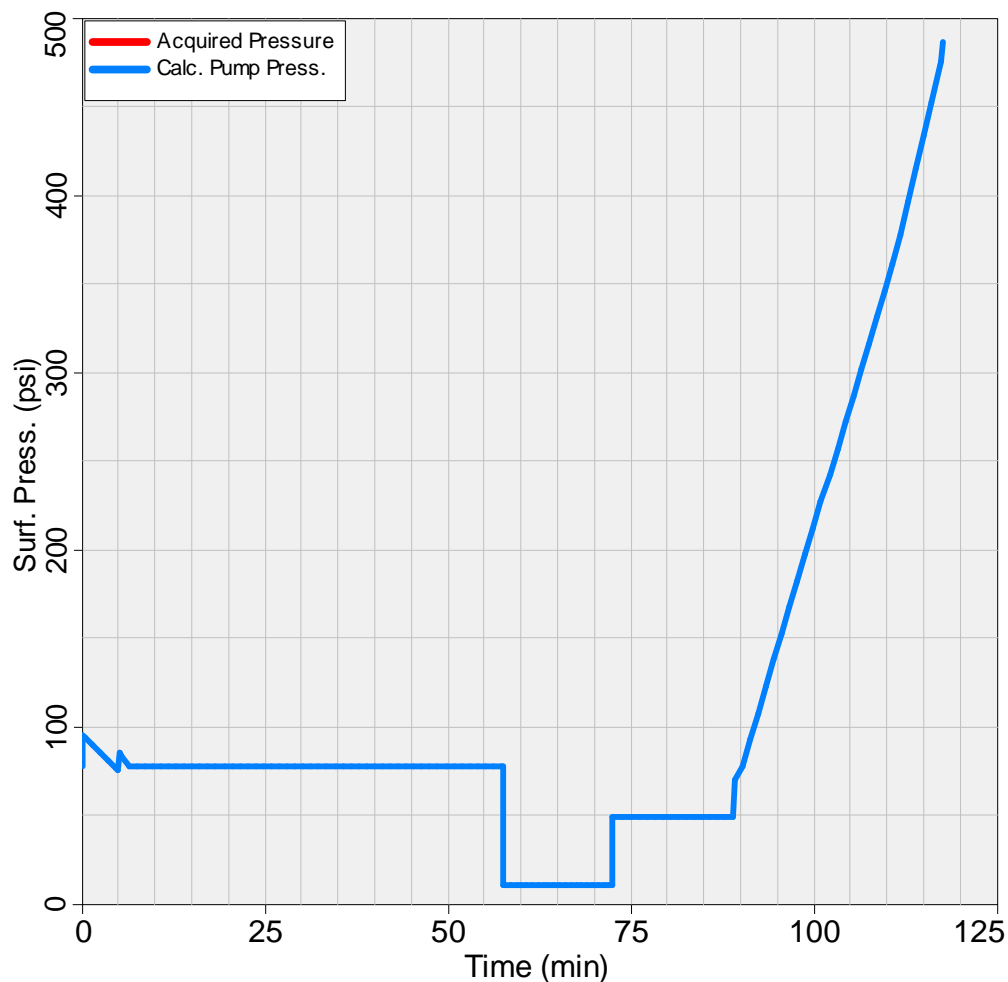
Pumping Schedule						
Name	Flow Rate (bbl/min)	Volume (bbl)	Stage Time (min)	Cum.Vol (bbl).	Inj. Temp. (degF)	Comments
9.0 ppg MudPUSH OBM 9.47 LiteCRETE	6.0	30.0	5.0	30.0	80	7-Start Pumping Spacer
Pause	0.0	0.0	15.0	0.0	80	18-Drop Top Plug
Water	6.0	271.8	45.3	271.8	80	19-Start Displacement
Total			01:57 hr:mn	616.8 bbl		

Dynamic Security Checks :		
Frac	193 psi	at 1600.0 ft
Pore	27 psi	at 1600.0 ft
Collapse	4803 psi	at 5920.0 ft
Burst	9033 psi	at 0.0 ft

Temperature Results			
BHCT	114 degF	Simulated Max HCT	132 degF
Simulated BHCT	125 degF	Max HCT Depth	5877.6 ft
CT at TOC	102 degF	Max HCT Time	00:00:00 hr:mn:sc
Static temperatures :			
At Time	(hr:mn)	(hr:mn)	Geo. Temp.
Top of Cement	(degF)	(degF)	95 degF
Bottom Hole	(degF)	(degF)	146 degF

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Section 3: centralizer placement

Top of centralization :0.0 ft
Bottom Cent. MD :5980.0 ft
Casing Shoe :6000.0 ft
NB of Cent. Used :57
NB of Floating Cent. :44

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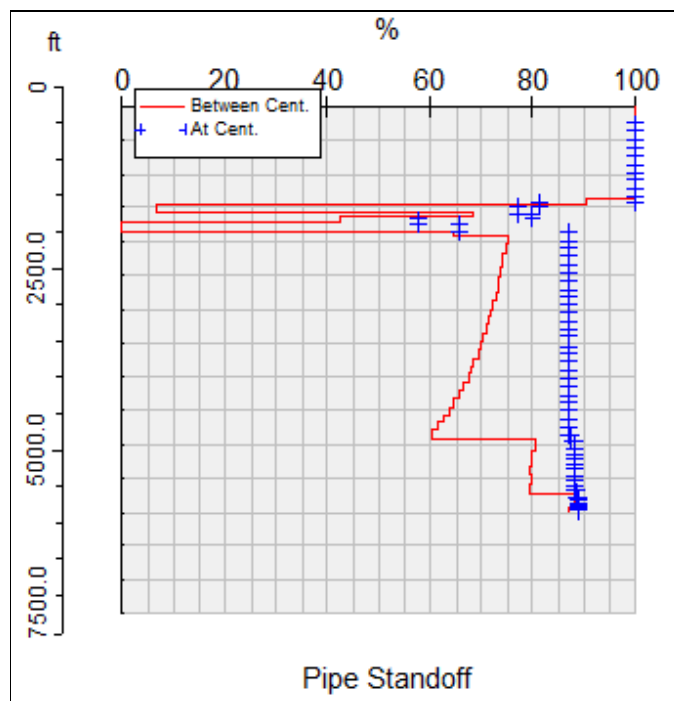
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Centralizer Description							Centralizer Tests		
Cent. Name	Code	Casing OD (in)	Max. OD (in)	Min. OD (in)	Rigid	Origin	Hole Size (in)	Running Force (lbf)	Restoring Force (lbf)
S1102575-7 5/8-6-25 (3/16")C		7 5/8	10.500	8.626	No	Houma	9.875	227.06	1432.03

Centralizer Placement							
Bottom MD (ft)	Nbr.	Cent. / Joint	Cent. Name	Code	Min. STO (%)	@ Depth (ft)	
160.0	0	0/0			100.0	130.0	
1360.0	10	1/3	S1102575-7 5/8-6-25 (3/16")C		100.0	1340.0	
1760.0	5	1/2	S1102575-7 5/8-6-25 (3/16")C		0.0	1756.0	
5000.0	27	1/3	S1102575-7 5/8-6-25 (3/16")C		0.0	1843.0	
5800.0	10	1/2	S1102575-7 5/8-6-25 (3/16")C		79.6	5660.0	
6000.0	5	1/1	S1102575-7 5/8-6-25 (3/16")C		87.1	6000.0	

(1) - Centralizer performance data is based on tests by WEATHERFORD as per the current API 10D specifications



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Section 4: fluid description

Water DESIGN

Fluid No: 1
Rheo. Model : NEWTONIAN
At temp. : 80 degF

Density : 8.32 lb/gal
Viscosity : 5.000 cP
Gel Strength : 0.00 lbf/100ft2
Job volume : 271.8 bbl

9.47 LiteCRETE DESIGN

Fluid No: 4
Rheo. Model : HERSCHEL_B.
At temp. : 96 degF

Density : 9.47 lb/gal
k : 5.51E-3 lbf.s^n/ft2
n : 0.768
T_y : 8.91 lbf/100ft2
Gel Strength : 14.94 lbf/100ft2

DESIGN

BLEND

Name : 9.47 LLC G
Dry Density : 78.02 lb/ft3
Sack Weight : 100 lb

SLURRY

Mix Fluid : 8.154 gal/sk
Yield : 2.38 ft3/sk
Solid Fraction : 54.2 %

Job volume : 314.9 bbl
Quantity : 742.35 sk

BASE FLUID

Type : Fresh water
Density : 8.32 lb/gal
Base Fluid : 8.154 gal/sk

Additives		
Code	Conc.	Function
D065	0.500 %BWOB	Dispersant
D046	0.200 %BWOB	Antifoam
D167	0.200 %BWOB	Fluid loss

9.0 ppg MudPUSH OBM DESIGN

Fluid No: 5
Rheo. Model : BINGHAM
At temp. : 168 degF

Density : 9.00 lb/gal
P_v : 15.000 cP
T_y : 10.00 lbf/100ft2
Gel Strength : 3.20 lbf/100ft2
Job volume : 30.0 bbl

Section 5: WELLCLEAN II Simulator

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