

BAS-3 Acties uitgevoerd na 11 $\frac{3}{4}$ " val

Presentatie SodM
15 maart 2013

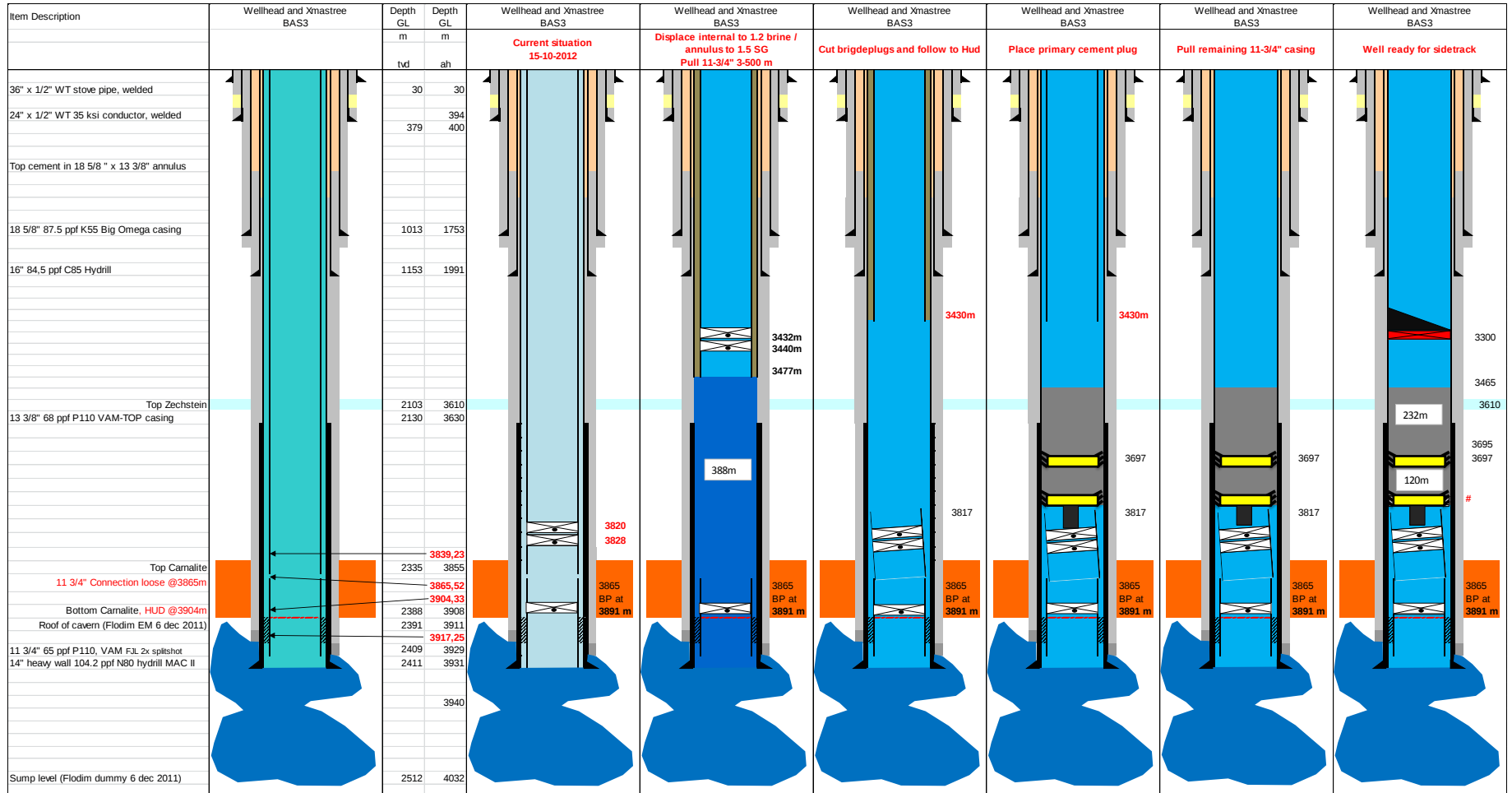
Inhoud

- Acties uitgevoerd na val 11 3/4"
- Huidige status en plannen
- Afsluiten cavernes in het algemeen

Acties uitgevoerd na val 11 $\frac{3}{4}$ "

BAS-3 Cavern Abandonment

Phase 1, addendum v3_15 Dec-2012



Frisia Zout B.V.

[illegible][illegible]

Dropped 11 3/4"

- Options:
 - Fish 11 3/4"
 - Cement bottom 11 3/4" to close off cavern
- Decision factors
 - Technical succes (weight 11 3/4")
 - Condition 13 3/8"
 - Safety

Stinger assembly

Item Description	Wellhead and Xmastree BAS3	Depth GL	Depth GL
		m tvd	m ah
	Stinger		
36" x 1/2" WT stove pipe, welded		30	30
24" x 1/2" WT 35 ksi conductor, welded		379	394
Top cement in 18 5/8" x 13 3/8" annulus			400
18 5/8" 87.5 ppf K55 Big Omega casing		1013	1753
16" 84.5 ppf C85 Hydrill		1153	1991
Top Zechstein		2103	3610
13 3/8" 68 ppf P110 VAM-TOP casing		2130	3630
Cut height			3825
Bridgeplug #3 (fitted w/ flapper valve)			3827
Bridgeplug #2 (fitted w/ flapper valve)			3835
			3839.23
Top Camalite		2335	3855
11 3/4" Connection loose @3865m			3865.52
Bridgeplug #1 (fitted w/ flapper valve)			3904.33
Bottom Camalite, HUD @3904m		2388	3908
Roof of cavern (Flodim EM 6 dec 2011)		2391	3911
			3917.25
11 3/4" 65 ppf P110, VAM F3L 2x splitshot		2409	3929
14" heavy wall 104.2 ppf N80 hydrill MAC II		2411	3931
			3940
Sump level (Flodim dummy 6 dec 2011)		4032	4032

Washing operations:

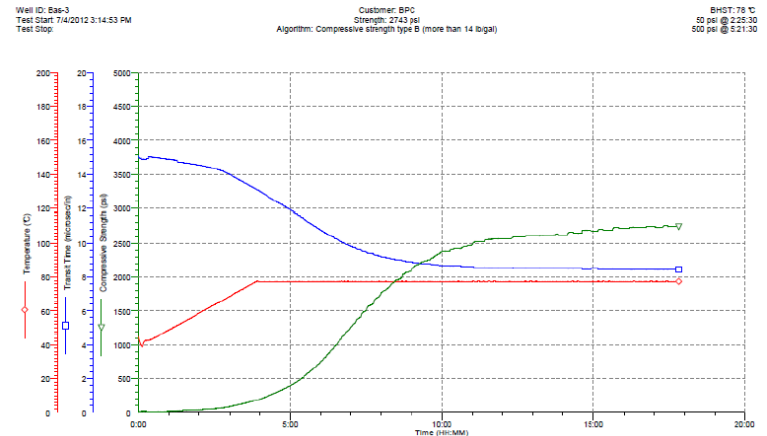
- Wash down to bridge plug.
- Retrieve Dart valves (WL).
- Reverse clean (rubber fragments)
- Stab-in stinger (no injectivity)
- Unstab reverse clean (salt)
- Wash with fresh water
- Injection test DP & Ann 500 l/min

Cement Job #1

Proposal Cement job #1:

Fast 40Bc @6:23 hr:mn
500psi @5:21 hr:mn
Slow 40Bc @8:43 hr:mn
500psi @30:47 hr:mn

Circulation Squeeze Plug UCA Plot – Fast Setting

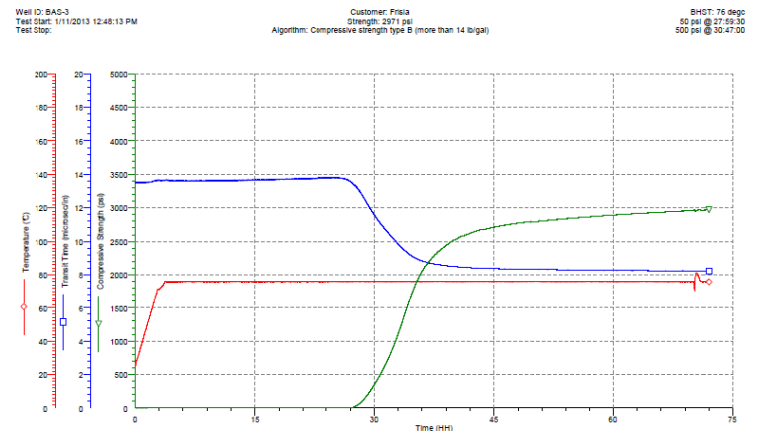


SCHLUMBERGER
COEVOORDEN

Test File Name: UCA_12-052-rebo_Bas-3_Plug_BPC.txt
Printed: 7/9/2012 9:04:06 AM

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Circulation Squeeze Plug UCA Plot – Slow setting



SCHLUMBERGER

Test File Name: UCA_13-007-76_Frisia_BPC_Bas-3_Plug (8.5L D081).txt
Printed: 1/14/2013 12:48:34 PM

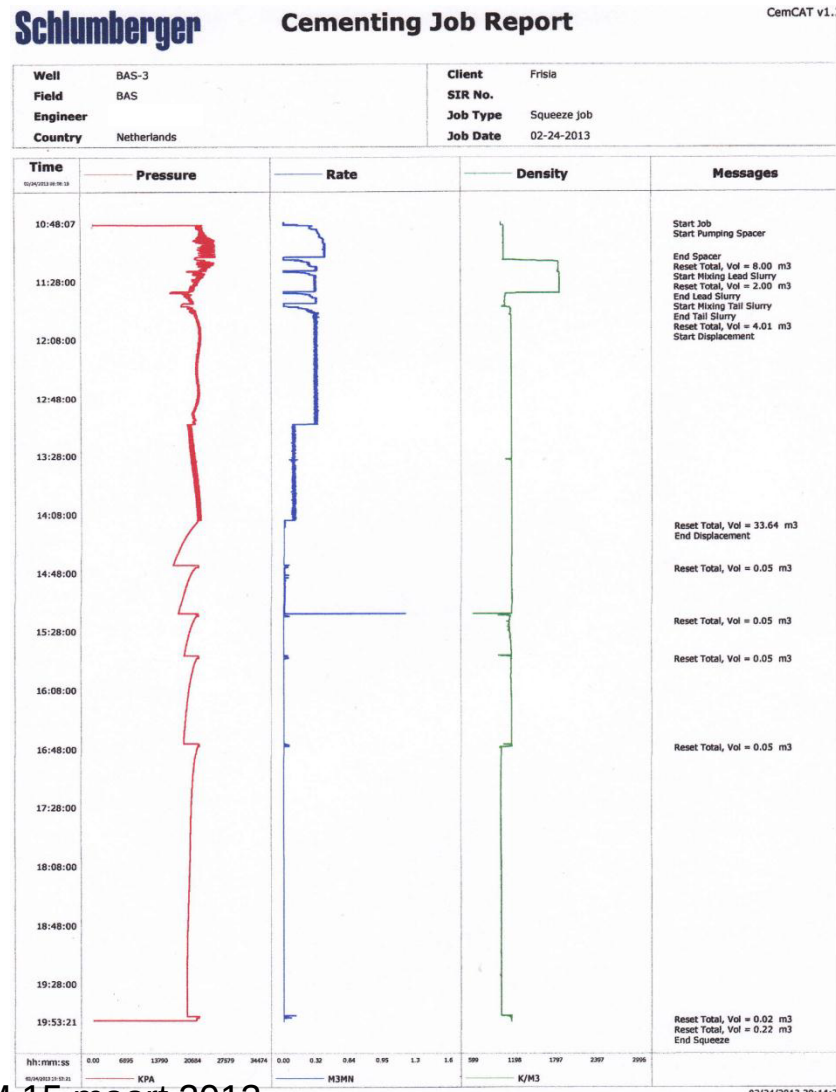
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Your Partners in Value Creation

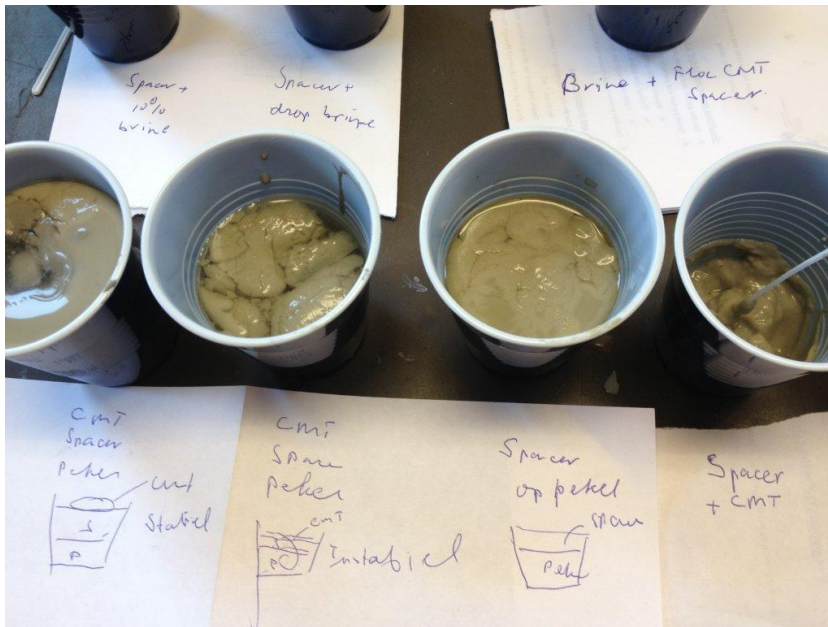
Actual CMT Job #1

- Pump 8m³ FW HiVis pill
- Pump 2m³ Fast setting cement
- Pump 3.9m³ Slow setting cement
- Place by injection
- Hesitation squeeze 4 x .25 m3
- WOC 17hr
- Ptest
- WOC 19hr



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Samples & Interfaces

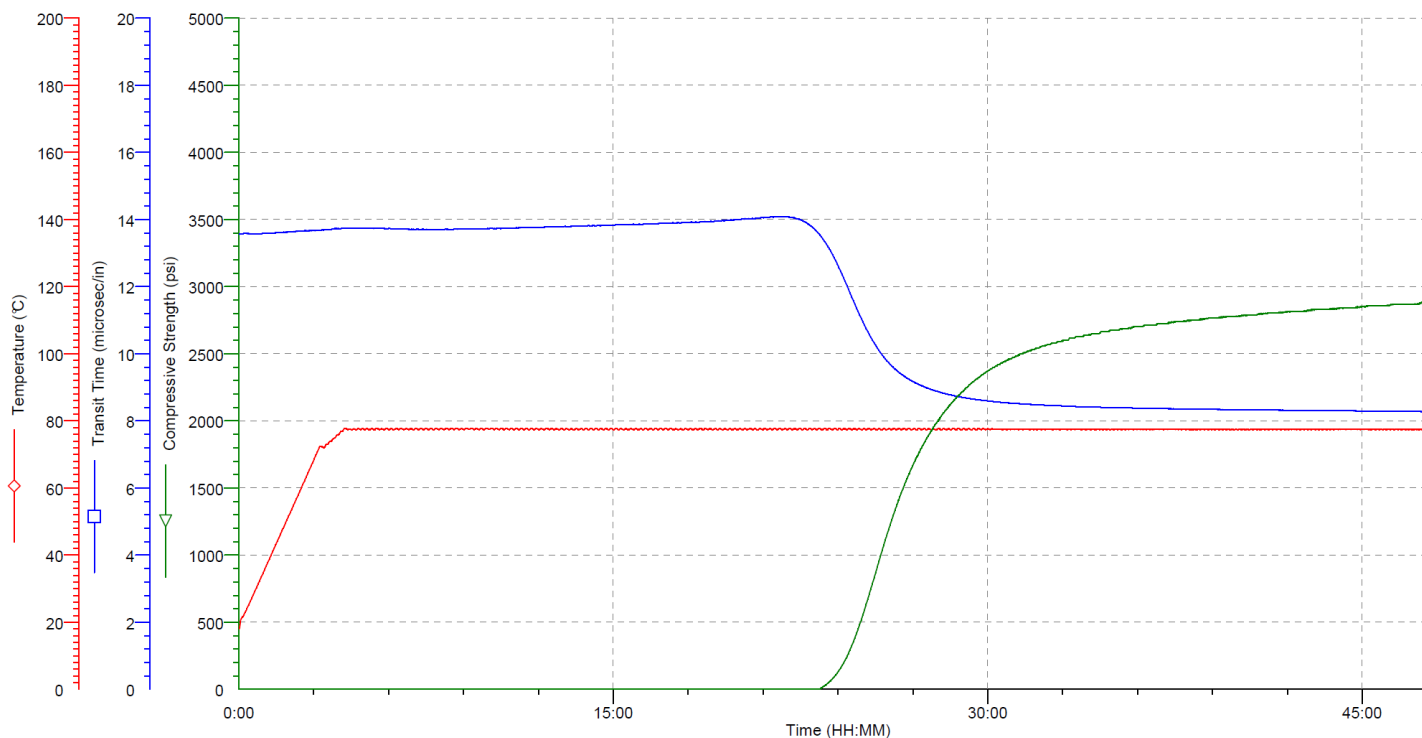


UCA 'Fast' Slurry

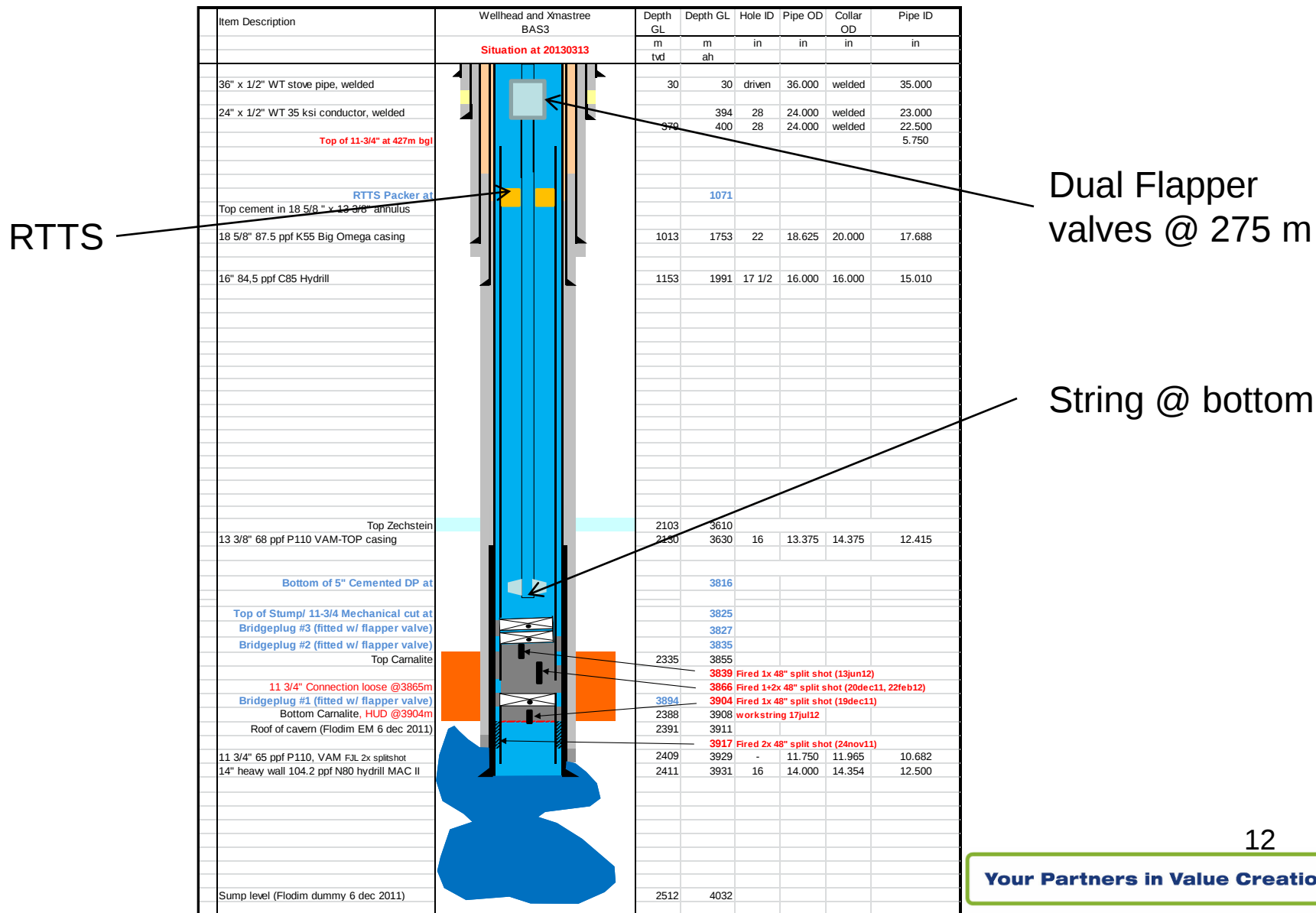
Well ID: BAS-3
Test Start: 1/25/2013 1:54:23 PM
Test Stop: 1/29/2013 11:22:36 AM

Customer: Frisia
Strength: 0 psi
Algorithm: Compressive strength type B (more than 14 lb/gal)

BHST: 78 degC
50 psi @ 23:38:00
500 psi @ 24:54:30



Status before CMT Job #2

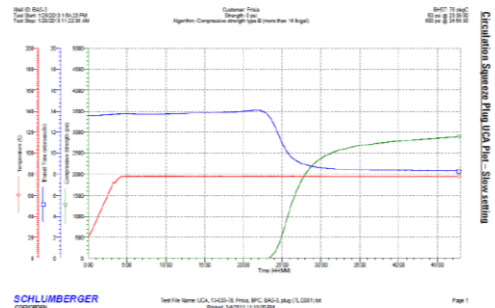
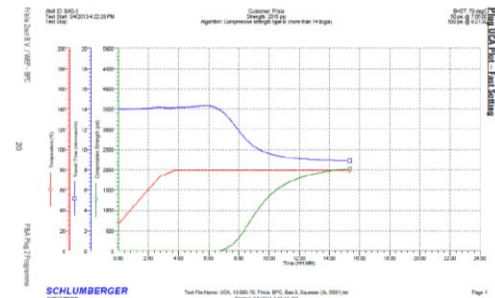


Conditions before CMT Job 2

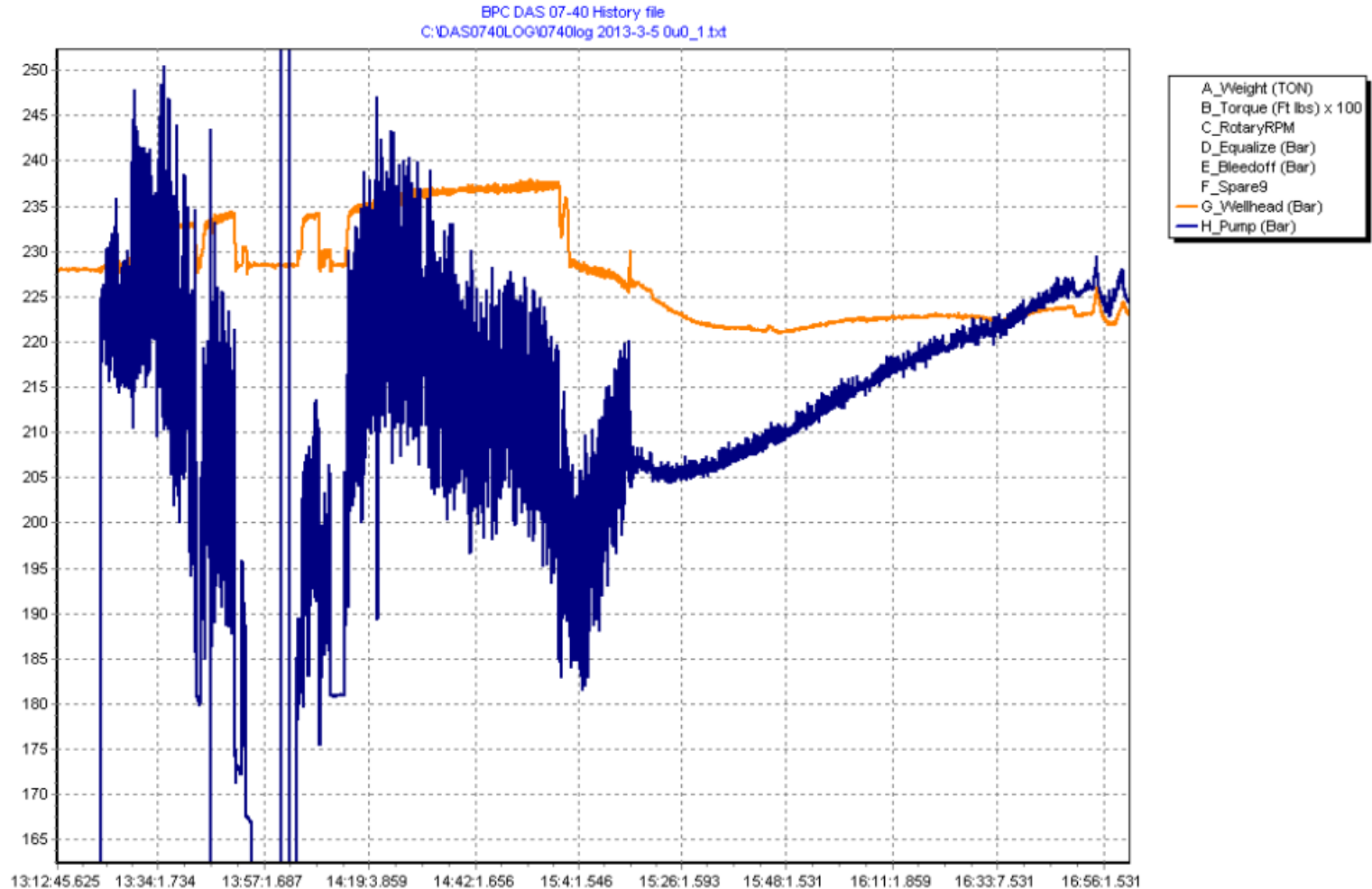
- Stabbed in
 - no injectivity
 - bleed off not holding
- Stabbed out; RTTS set
 - Circ behind 11 3/4" 500 l/min
 - Injectivity via 11 3/4" ann 500 l/min
- Stabbed out, RTTS unset
 - Good communication via 'crack'

- RTTS unset
- Spot 0.5m³ spacer
- Spot 5m³ Slow setting cement
- Spot 3m³ Fast setting cement
- Displace with retarded fluids
- Pull above top cement
- WOC

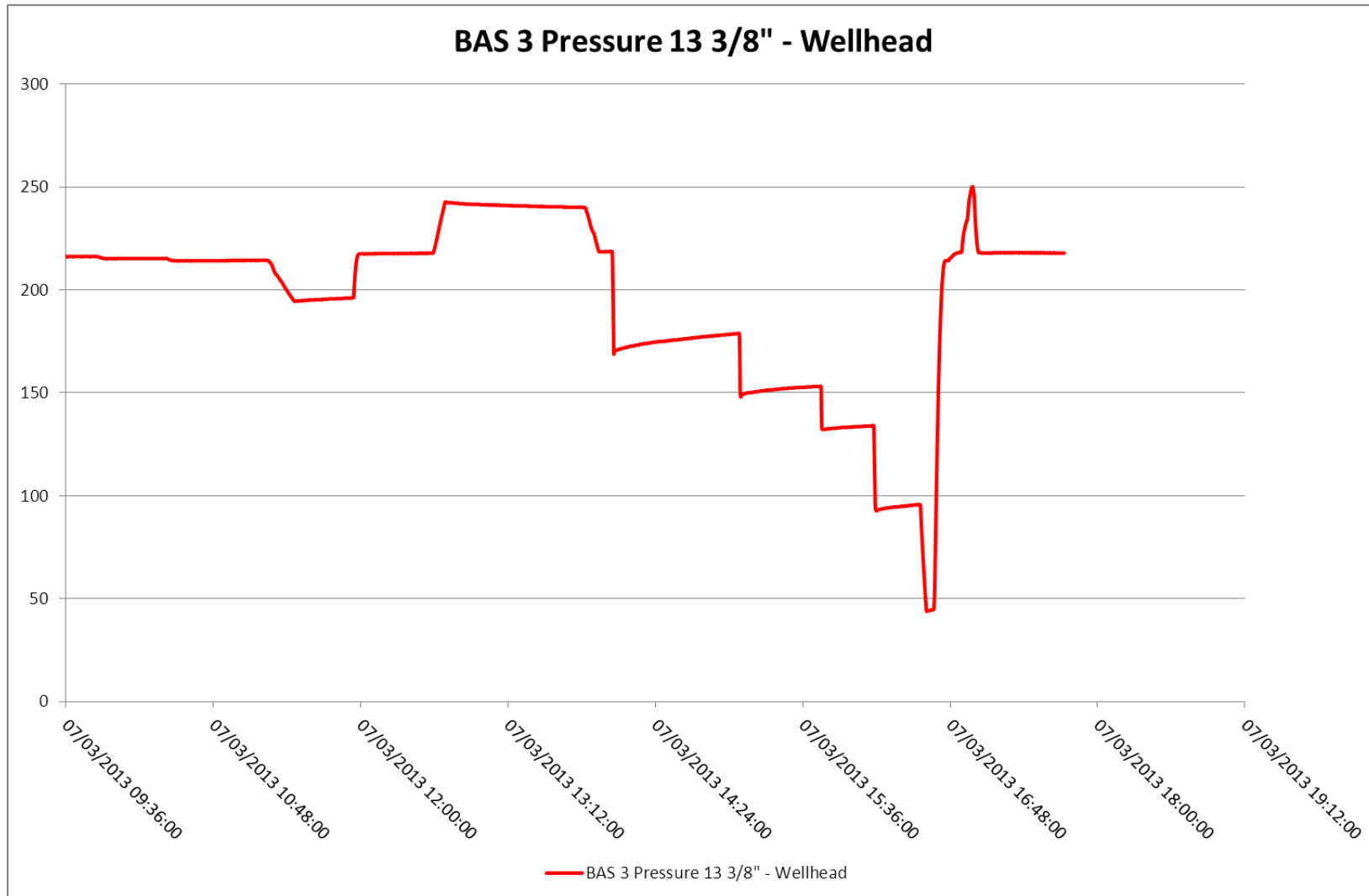
Slow	40Bc @6:50 hr:mn
	500psi @24:54 hr:mn
Fast	40Bc @3:12 hr:mn
	500psi @8:21 hr:mn



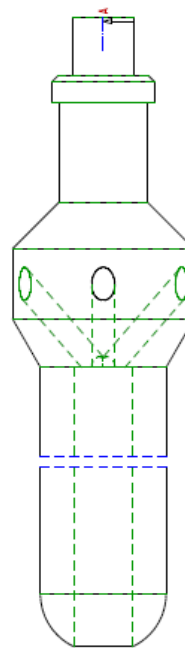
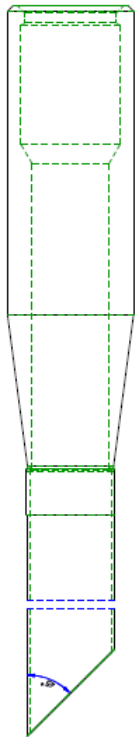
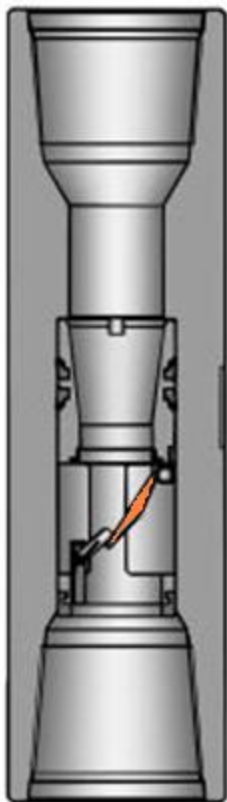
Pressures wellhead/DP during cementation



Pressure test after WOC #2



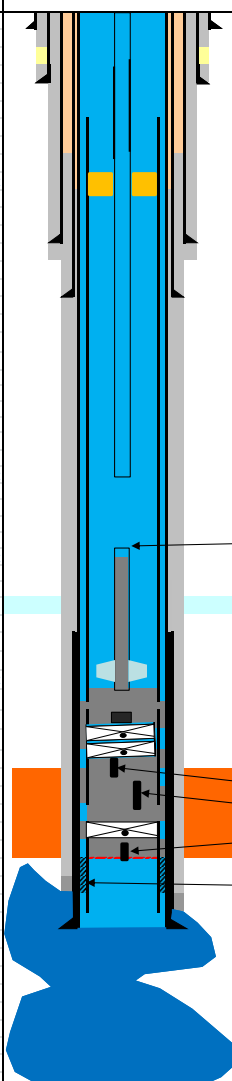
Flapper Sleeve and flapper hammer



Pics flapper valves



Current situation

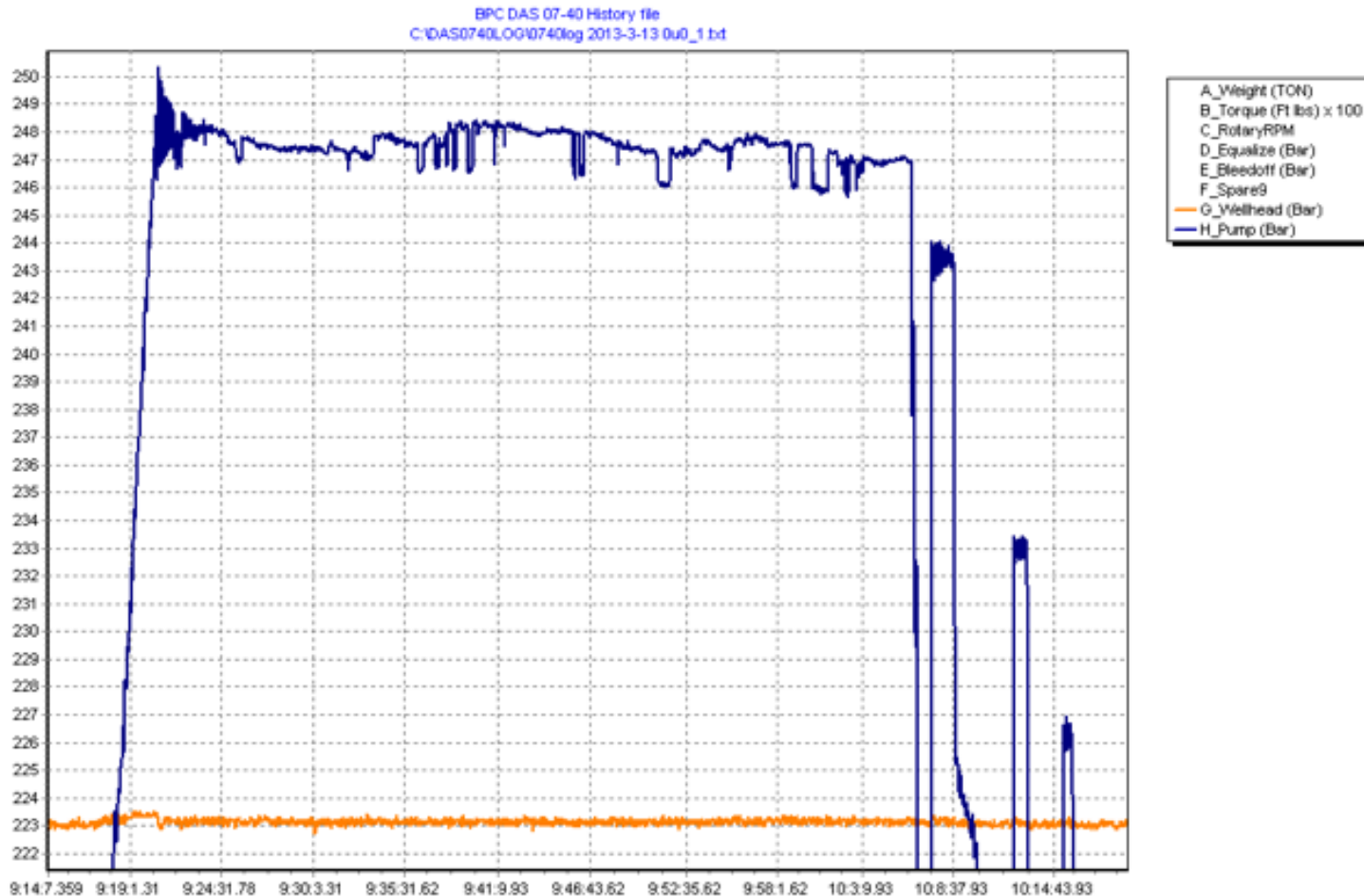
Item Description	Wellhead and Xmastree BAS3	Depth GL	Depth GL	Hole ID	Pipe OD	Collar OD	Pipe ID	
		m tvd	m ah	in	in	in	in	
Situation at 20130313								
36" x 1/2" WT stove pipe, welded		30	30	driven	36.000	welded	35.000	
24" x 1/2" WT 35 ksi conductor, welded			394	28	24.000	welded	23.000	
Top of 11-3/4" at 427m bgl		379	400	28	24.000	welded	22.500 5.750	
RTTS Packer at			803					
Top cement in 18 5/8 " x 13 3/8" annulus								
18 5/8" 87.5 ppf K55 Big Omega casing			1013	1753	22	18.625	20.000	17.688
16" 84.5 ppf C85 Hydrill			1153	1991	17 1/2	16.000	16.000	15.010
Bottom of 5" DP at			3093					
Top of Cement in 5" DP at								
Top Zechstein		2103	3610					
13 3/8" 68 ppf P110 VAM-TOP casing		2130	3630	16	13.375	14.375	12.415	
Bottom of 5" Cemented DP at			3816					
Top of Cement in 11-3/4"			Unknown					
Top of Stump/ 11-3/4 Mechanical cut at			3825					
Bridgeplug #3 (fitted w/ flapper valve)			3827					
Bridgeplug #2 (fitted w/ flapper valve)			3835					
Top Camalite		2335	3855					
11 3/4" Connection loose @3865m			3839	Fired 1x 48" split shot (13jun12)				
Bridgeplug #1 (fitted w/ flapper valve)			3866	Fired 1+2x 48" split shot (20dec11, 22feb12)				
Bottom Camalite, HUD @3904m			3894	Fired 1x 48" split shot (19dec11)				
Roof of cavern (Flodim EM 6 dec 2011)		2388	3908	workstring 17jul12				
		2391	3911					
11 3/4" 65 ppf P110, VAM FUL 2x splitshot		2409	3929	-	11.750	11.965	10.682	
14" heavy wall 104.2 ppf N80 hydrill MAC II		2411	3931	16	14.000	14.354	12.500	
Sump level (Flodim dummy 6 dec 2011)		2512	4032					

Free pipe with severing tool

Inflow test 11 3/4" cement, bled-off to 15bar, slow pressure increase to 25bar

Pressure test RTTS set

Load History

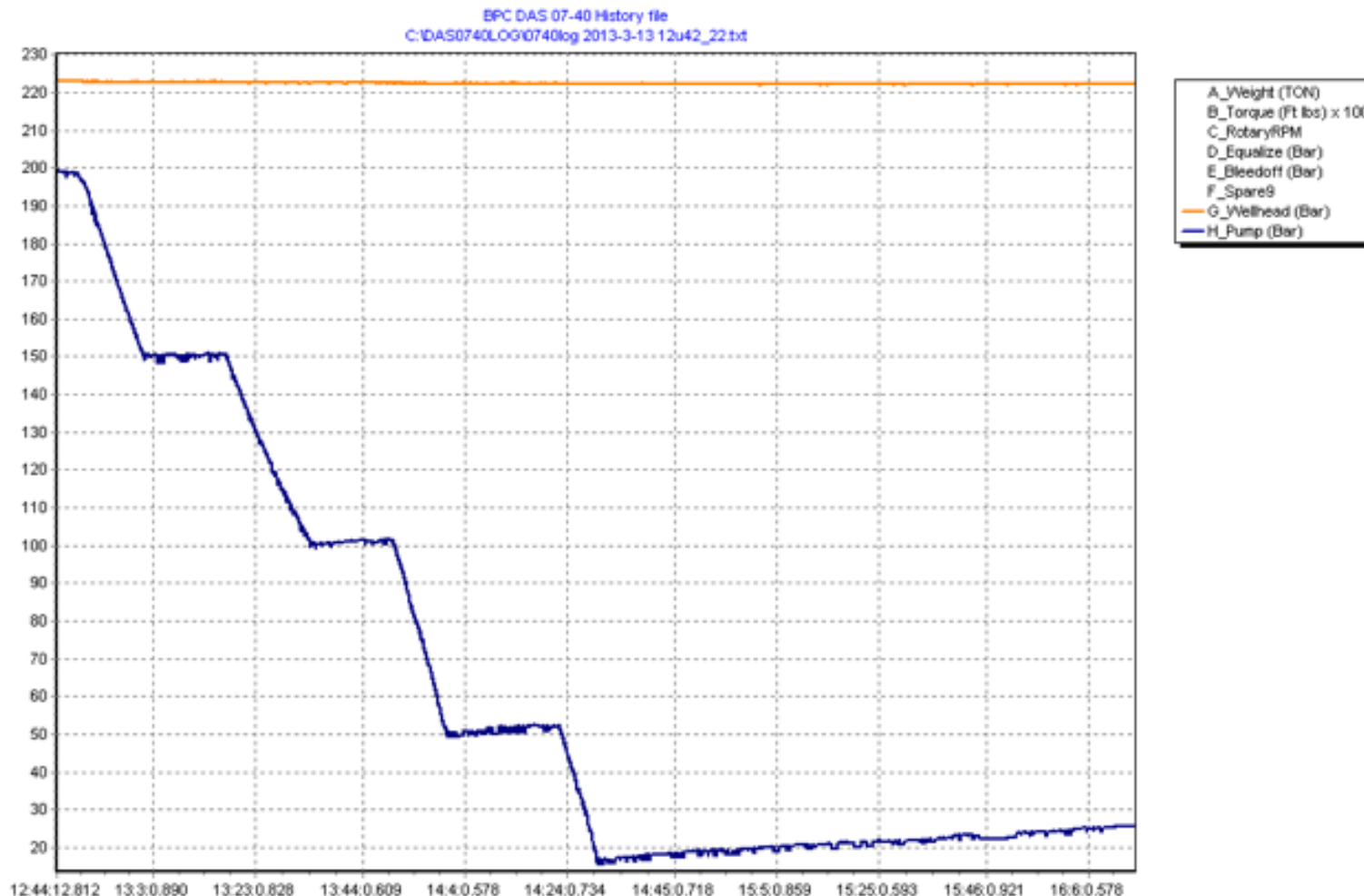


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Inflow test RTTS set

Load History

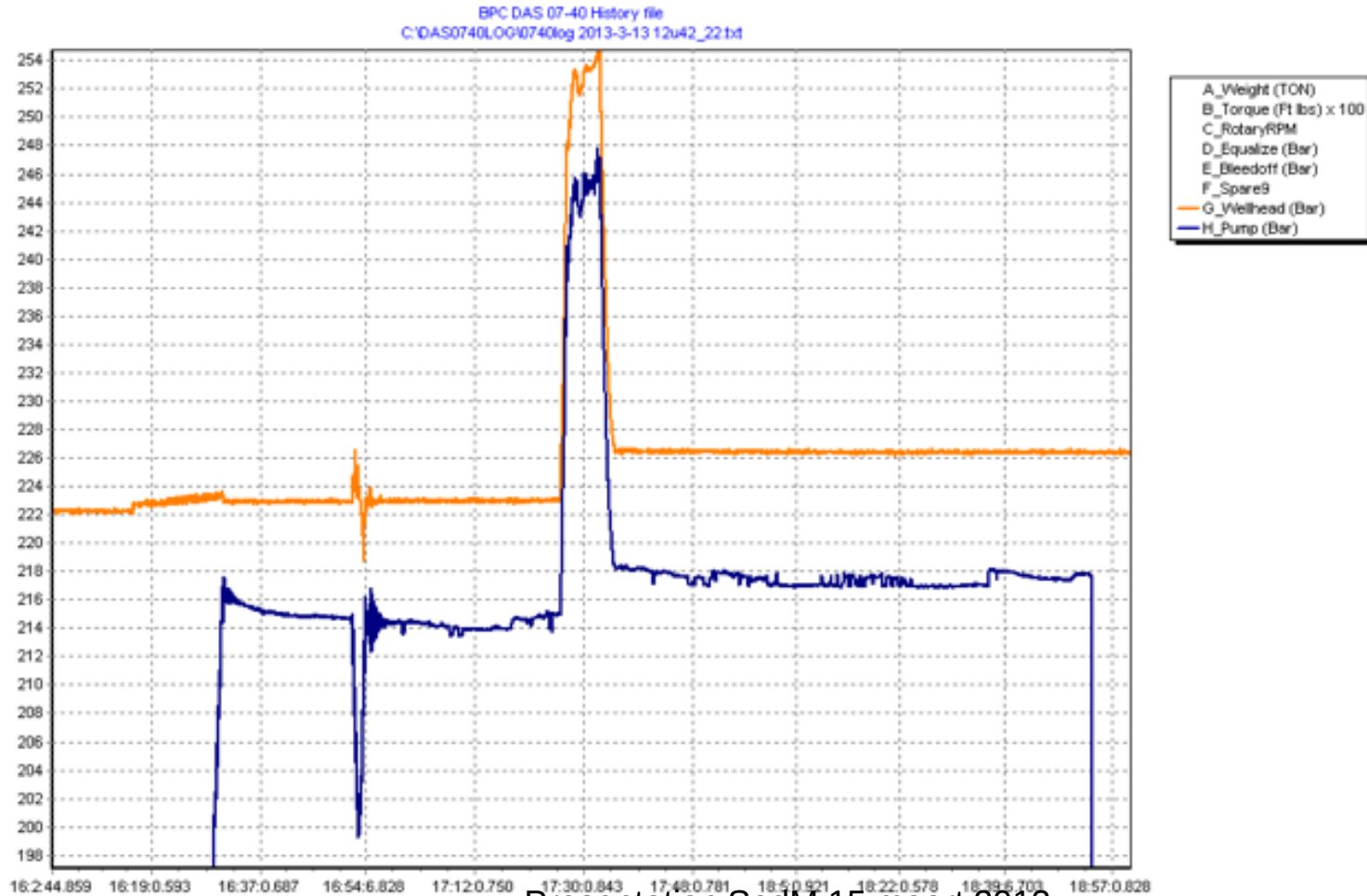


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Injectivity test kill line RTTS not set

Load History

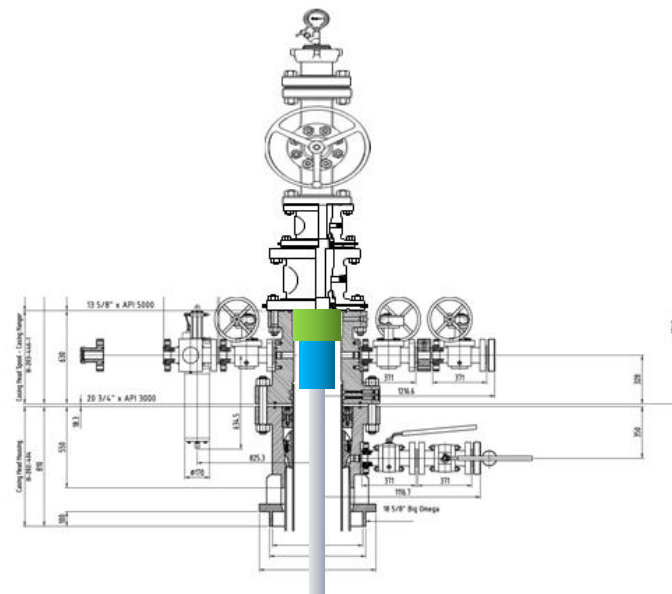


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Huidige status en plannen

Suspension string

Item Description	Wellhead and Xmastrree BAS3	Depth GL	Depth GL	Hole ID	Pipe OD	Collar OD	Pipe ID	
		m twd	m ah	in	in	in	in	
Suspension string								
Nipple 4 1/4"		30	30	driven	36.000	welded	35.000	
36" x 1/2" WT stove pipe, welded								
24" x 1/2" WT 35 ksi conductor, welded			394	28	24.000	welded	23.000	
		379	400	28	24.000	welded	22.500	
Sliding side door at 425m Top of 11-3/4" at 427m bgl							5.750	
Top cement in 18 5/8 " x 13 3/8" annulus								
18 5/8" 87.5 ppf K55 Big Omega casing			1013	1753	22	18.625	20.000	17.688
16" 84.5 ppf C85 Hydrill			1153	1991	17 1/2	16.000	16.000	15.010
5 1/2" 17# C95 TPS-techniseal 4 1/2", fitted with 4 1/4" nipple			1853	3300		5.500	6.075	4.992
Top of Cement in 5" DP at				3361 Shooting depth (10mar13) 3366				
Top Zechstein			2103	3610				
13 3/8" 68 ppf P110 VAM-TOP casing			2130	3630	16	13.375	14.375	12.415
Bottom of 5" Cemented DP at				3816				
Top of Cement in 11-3/4"				Unknown				
Top of Stump/ 11-3/4 Mechanical cut at				3825				
Bridgeplug #3 (fitted w/ flapper valve)				3827				
Bridgeplug #2 (fitted w/ flapper valve)				3835				
Top Carnalite			2335	3855				
				3839 Fired 1x 48" split shot (13jun12)				
11 3/4" Connection loose @3865m			3866 Fired 1+2x 48" split shot (20dec11, 22feb12)					
Bridgeplug #1 (fitted w/ flapper valve)		3894	3904 Fired 1x 48" split shot (19dec11)					
Bottom Carnalite, HUD @3904m		2388	3908 workstring 17jul12					
Roof of cavern (Flodim EM 6 dec 2011)		2391	3911					
			3917 Fired 2x 48" split shot (24nov11)					
11 3/4" 65 ppf P110, VAM F3L 2x splitshot		2409	3929	-	11.750	11.965	10.682	
14" heavy wall 104.2 ppf N80 hydrill MAC II		2411	3931	16	14.000	14.354	12.500	
Sump level (Flodim dummy 6 dec 2011)		2512	4032					



- Hanger
- X-over
- 5 1/2" casing

Top down cementation via 11 3/4" x 13 3/8" annulus

Your Partners in Value Creation

BAS-3 Phase 1a

Chronology

- 3-Jan Displace 13 3/8" to heavy brine
- 4-Jan Pull 400m 11 3/4", PUW initial 150mT final 115mT, equalize pressures,
- 5- Jan attempt to push down, at 75mT two locking bolts of HWO unit broke.
- 6-11Jan Repair/improvements
- After repair:
 - 14-Jan Push down 11 3/4" with 60mT
- 18-Jan Perform cut on 11 3/4"
- 24-Jan Snub in hole cementing BHA, with BHA at 256m the 11 3/4" **dropped**, continued snub in hole HUD at 366m
- 26Jan-01Feb wireline, fish plugs, asses downhole situation with multi-finger caliper. Around 366m min ID 11.983" (wrong data)
- 02-16Feb, drift run 13 3/8" & 11 3/4" with 10 3/8" stab and 12 1/4" stab to top 11 3/4".

BAS-3 Phase 1a

- 17-20Feb, snub in hole stab-in stinger assembly.
- 21-22Feb, retrieve darts, injectivity-circulation tests.
- 23-25Feb, cement job #1 & WOC.
- 26-28Feb, bleed-off injectivity tests, reverse circulate string, re-install darts
- 1-2Mar, install RTTS packer in string
- 3Mar, injectivity/circulation tests.
- 4-6Mar, cement job #2 & WOC.
- 7Mar, inflow test at 50bar WHP breakthrough, DP stuck in cement.
- 8-10Mar, wireline, two severing shots to free pipe @3382m. TOC in pipe @3386m.
- 11Mar, wireline, set plug in DP (bridge plug & cement)
- 12Mar, WOC, snub out of hole, retrieve float subs/valves
- 13Mar, inflow test cement inside 11 3/4",
- 14Mar, Standby

Afsluiten cavernes in het algemeen

Discussie