

HALLIBURTON

iCem[®] Service

TERRA ENERGY PARTNERS

United States of America, COLORADO

Date: Thursday, April 19, 2018

Federal PA 332-26

API # 05-045-23725-00

GARFIELD, Federal PA 332-26

Job Date: Sunday, April 15, 2018

Sincerely,

Grand Junction Cement Engineering

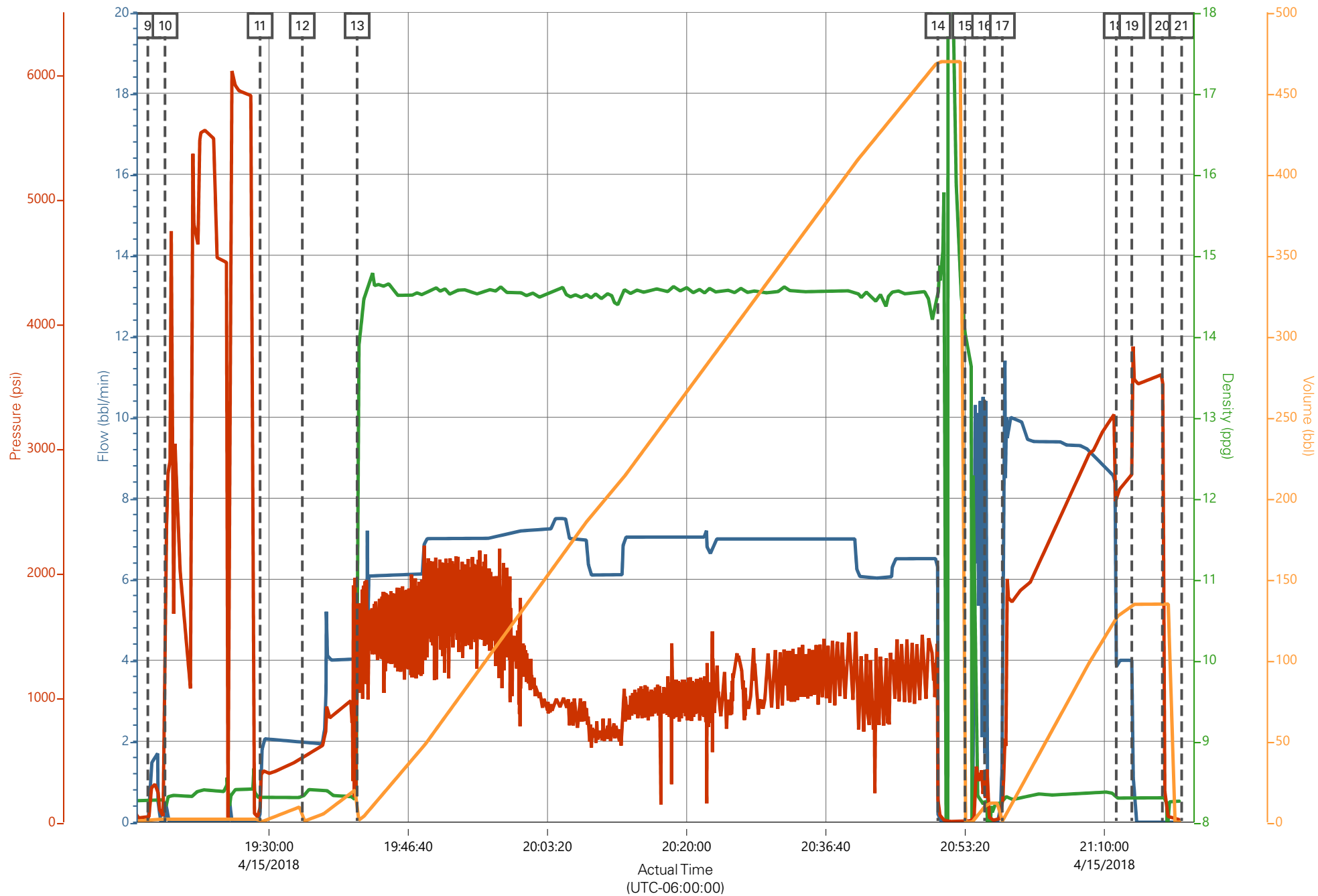
1.0 Real-Time Job Summary

1.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	Comb Pump Rate (bbl/min)	DH Density (ppg)	PS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	4/15/2018	11:30:00	USER					REQUESTED ON LOCATION TIME 4/15/2018 @ 15:30
Event	2	Depart Yard Safety Meeting	4/15/2018	13:40:00	USER					JSA COMPLETED
Event	3	Crew Leave Shop	4/15/2018	13:45:00	USER					
Event	4	Arrive At Loc	4/15/2018	15:30:00	USER					RIG RUNNING CASING
Event	5	Assessment Of Location Safety Meeting	4/15/2018	15:35:00	USER					JSA COMPLETED
Event	6	Pre-Rig Up Safety Meeting	4/15/2018	16:00:00	USER					JSA COMPLETED
Event	7	Rig-Up Equipment	4/15/2018	16:05:00	USER					
Event	8	Pre-Job Safety Meeting	4/15/2018	17:00:00	USER					JSA COMPLETED
Event	9	Start Job	4/15/2018	19:15:30	COM4					CASING 4 1/2" 11.6# IN 8 3/4" OPEN HOLE, TD 8697' TP 8691', SJ 34', MUD 12.8 PPG, WATER TEST 65 DEGREES, PH 7, CHLORIDES 0
Event	10	Test Lines	4/15/2018	19:17:33	COM4	0.00	8.33	5000.00	0.00	TEST LINES TO 5000 PSI,HAD TO RETEST BECAUSE OF LEAKING CONNECTION.
Event	11	Pump Spacer 1	4/15/2018	19:28:56	COM4	2.00	8.33	530.00	10.00	10 BBL H2O SPACER, 530 PSI
Event	12	Pump Spacer 2	4/15/2018	19:33:59	COM4	4.00	8.40	950.00	20.00	20 BBL MUDFLUSH, 950 PSI
Event	13	Pump Cement	4/15/2018	19:40:33	COM4	7.00	14.50	1450.00	431.40	431.4 BBL PRIMARY CEMENT, 1835 SKS / 14.5 PPG / 1.32 YLD / 5.85 GAL/SK H2O REQ,1450 PSI

Event	14	Shutdown	4/15/2018	20:50:04	USER						
Event	15	Clean Lines	4/15/2018	20:53:19	COM4					CLEAN LINES TO PIT	
Event	16	Drop Top Plug	4/15/2018	20:55:40	COM4					PLUG AWAY	
Event	17	Pump Displacement	4/15/2018	20:57:47	COM4	9.00	8.40	3290.00	134.20	134.2 BBL KCL DISPLACEMENT WITH 3# BE-6, 1 GAL MMCR, 3290 PSI	
Event	18	Slow Rate	4/15/2018	21:11:25	USER	4.00	8.40	2690.00	126.00	SLOW RATE TO 4 BBL/MIN, 3290 PSI TO 2690 PSI	
Event	19	Bump Plug	4/15/2018	21:13:17	COM4	4.00	8.40	3600.00	134.20	PLUG BUMPED AT CALCULATED, FINAL CIRCULATING PRESSURE 2790 PSI BROUGHT TO 3600 PSI	
Event	20	Check Floats	4/15/2018	21:16:56	COM4					FLOATS HELD, 1 3/4 BBL BACK TO PUMP	
Event	21	End Job	4/15/2018	21:19:15	COM4					GOOD RETURNS THROUGHOUT ENTIRE JOB, PIPE WAS RECIPRICATED, NO SUGAR WAS USED AND NO ADD HOURS WERE CHARGED	
Event	22	Pre-Rig Down Safety Meeting	4/15/2018	21:40:00	USER					JSA COMPLETED	
Event	23	Rig-Down Equipment	4/15/2018	21:45:00	USER						
Event	24	Pre-Convoy Safety Meeting	4/15/2018	22:25:00	USER					JSA COMPLETED	
Event	25	Crew Leave Location	4/15/2018	22:30:00	USER					THANK YOU FOR CHOOSING HALLIBURTON CEMENTING OF GRAND JUNCTION, CO - RYAN MARTIN AND CREW	

TERRA - FEDERAL PA 332-26 - 4 1/2" PRODUCTION



Job Information

Request/Slurry	2465591/3	Rig Name	H&P 271	Date	06/APR/2018
Submitted By	Lukas Van Zyl	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	Federal PA 332-26

Well Information

Casing/Liner Size	4.5 in	Depth MD	8726 ft	BHST	106°C / 222°F
Hole Size	8.75 in	Depth TVD	8377 ft	BHCT	67°C / 152°F
Pressure	5164 psi				

Drilling Fluid Information

Mud Supplier Name	AMC	Mud Trade Name	Density
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Cement Information - Primary Design



Conc	UOM	Cement/Additive	Sample Type	Sample Date	Lot No.	Cement Properties		
						Slurry Density	14.5	lbm/gal
						Slurry Yield	1.32	ft3/sack
						Water Requirement	5.849	gal/sack
						Total Mix Fluid	5.849	gal/sack
						Water Source	Fresh Water	
						Water Chloride		

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Operation Test Results Request ID 2465591/3

Thickening Time - ON-OFF-ON

12/APR/2018

Test Temp (degF)	Pressure (psi)	Reached in (min)	30 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	100 Bc (hh:mm)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)
152	5164	43	4:19	4:20	4:23	4:24	5	53	15	17

total sks=1835

CS0864 TR#8658 425 SKS

CS0865 TR#8678 425 SKS

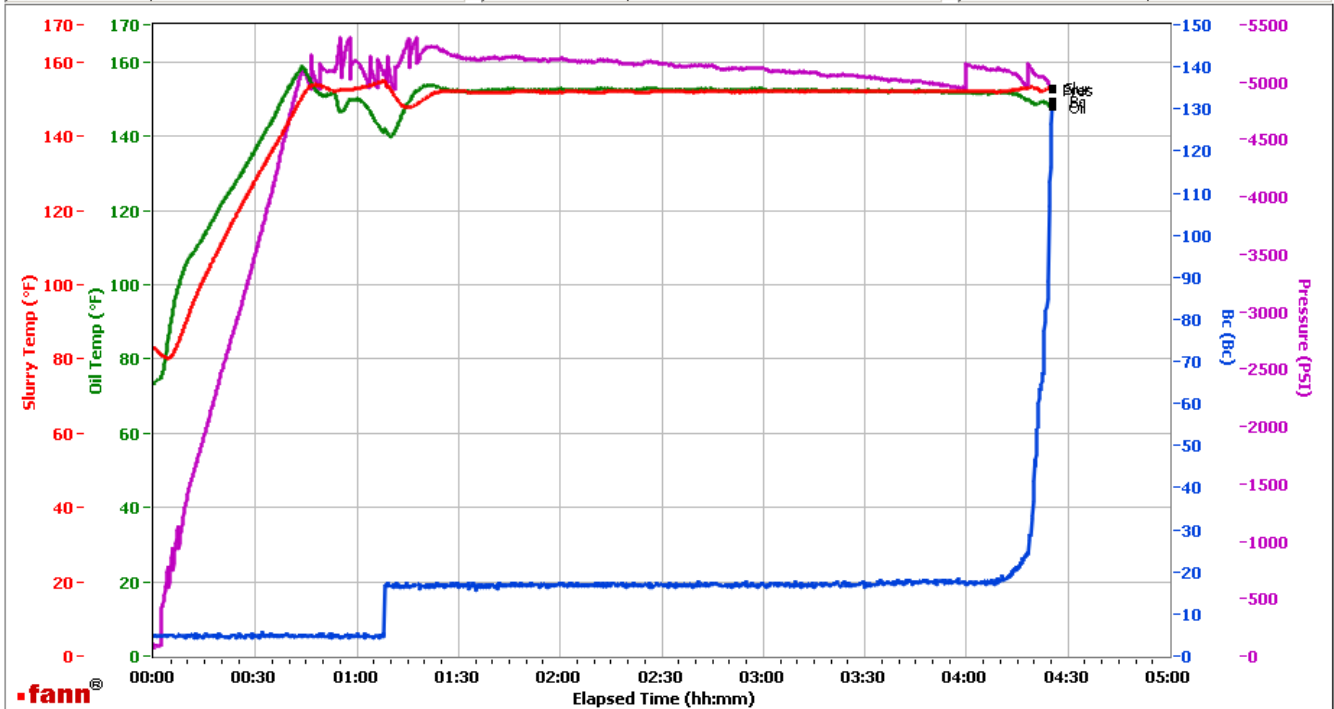
deflected from 4Bc---17Bc and 16Bc within one minute.

Grand Junction Colorado

Fields	Values
Project Name	GJ2465591-3 TERRA PRODUCTION BULK PR
Test ID	35413776
Request ID	GJ2465591-3
Tested by	DEBA
Customer	TERRA ENERGY PARTNERS
Well No	FED PA 332-26
Rig	H&P 271
Casing/Liner Size	4.5"

Fields	Values
Job Type	PRODUCTION CASING
Cement Type	MOUNTAIN G
Cement Weight	Standard
Test Date	05/20/11
Test Time	12:13 PM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.1219

Events	Results
30.00 Bc	04h:19m
40.00 Bc	04h:20m
50.00 Bc	04h:20m
70.00 Bc	04h:23m
100.00 Bc	04h:24m
00h:30m	4.63
01h:00m	5.14
01h:30m	17.06



Data File C:\Documents and Settings\HPHT\Local Settings\Temporary Internet Files\Content.IE5\09ERK9UW\GJ2465591-3 TERRA PRODUCTION BULK PRIMARY[1].tdms

Comments CS0864 TR#8658 425 SKS AND CS0865 TR#8678 425 SKS

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Operation Test Results Request ID 2465591/2

Thickening Time - ON-OFF-ON

11/APR/2018

Test Temp (degF)	Pressure (psi)	Reached in (min)	30 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	100 Bc (hh:mm)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)
152	5164	43	3:49	3:56	4:02	4:05	15	53	15	17

Total SKS= 1835

CS0854 TR 3212 135 SKS

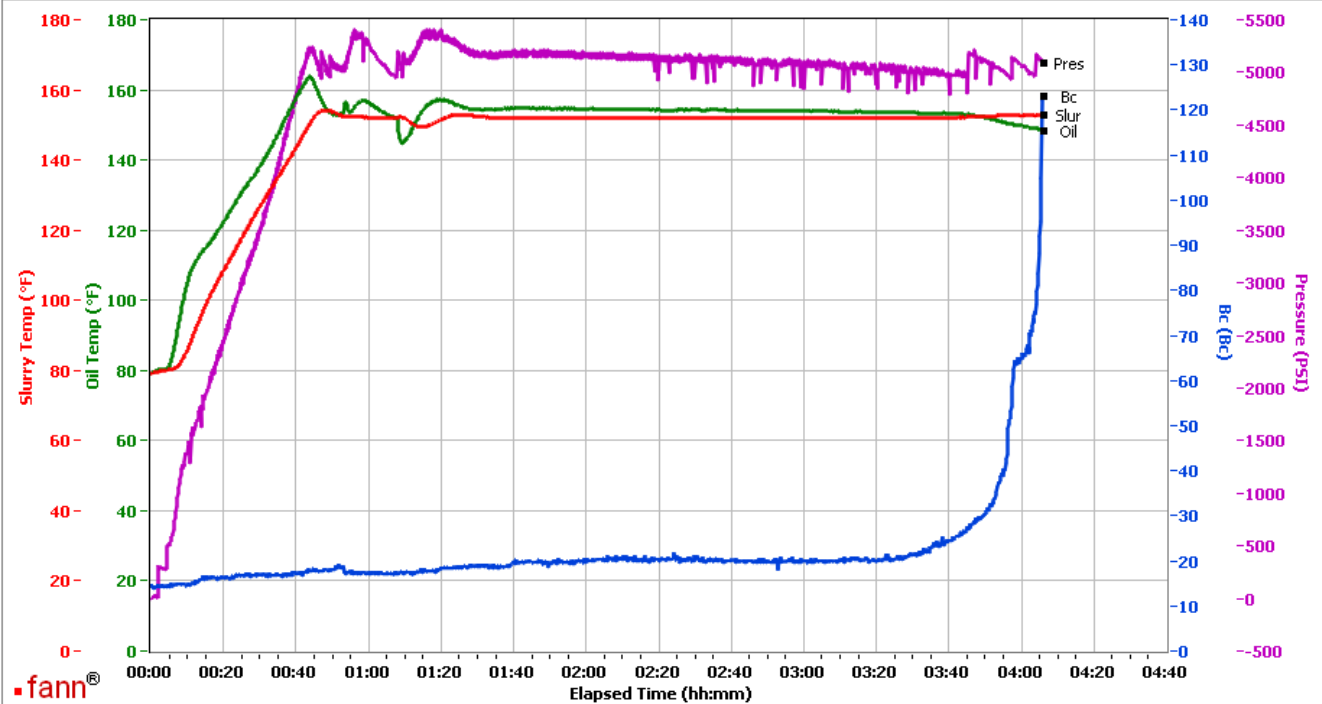
no deflection. 17Bc--- > 17Bc

Grand Junction Colorado

Fields	Values
Project Name	GJ2465591-2 TERRA PRODUCTION PRIMAR
Test ID	35410234
Request ID	2465591-2
Tested by	JASON
Customer	TERRA ENERGY PARTNERS
Well No	PA 332-26
Rig	H&P 271
Casing/Liner Size	4.5 INCH

Fields	Values
Job Type	PRODUCTION
Cement Type	MOUNTAIN G
Cement Weight	Standard
Test Date	04/11/18
Test Time	9:49 AM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.507

Events	Results
30.00 Bc	03h:49m
40.00 Bc	03h:55m
50.00 Bc	03h:56m
70.00 Bc	04h:02m
100.00 Bc	04h:05m
00h:30m	16.93
01h:00m	17.09
01h:30m	18.55



Data File C:\Documents and Settings\M290\Local Settings\Temporary Internet Files\Content.IE5\K9YZ0P2R\GJ2465591-2 TERRA PRODUCTION PRIMARY BULK[1].tdms

Comments CS0854 TR 3212 135 SKS

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Operation Test Results Request ID 2465591/1

Thickening Time - ON-OFF-ON

11/APR/2018

Test Temp (degF)	Pressure (psi)	Reached in (min)	30 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	100 Bc (hh:mm)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)
152	5164	43	4:08	4:21	4:25	4:26	8	53	15	32

total sks=1835

CS0847 TR#8658 425 SKS

CS0848 TR#8678 425 SKS

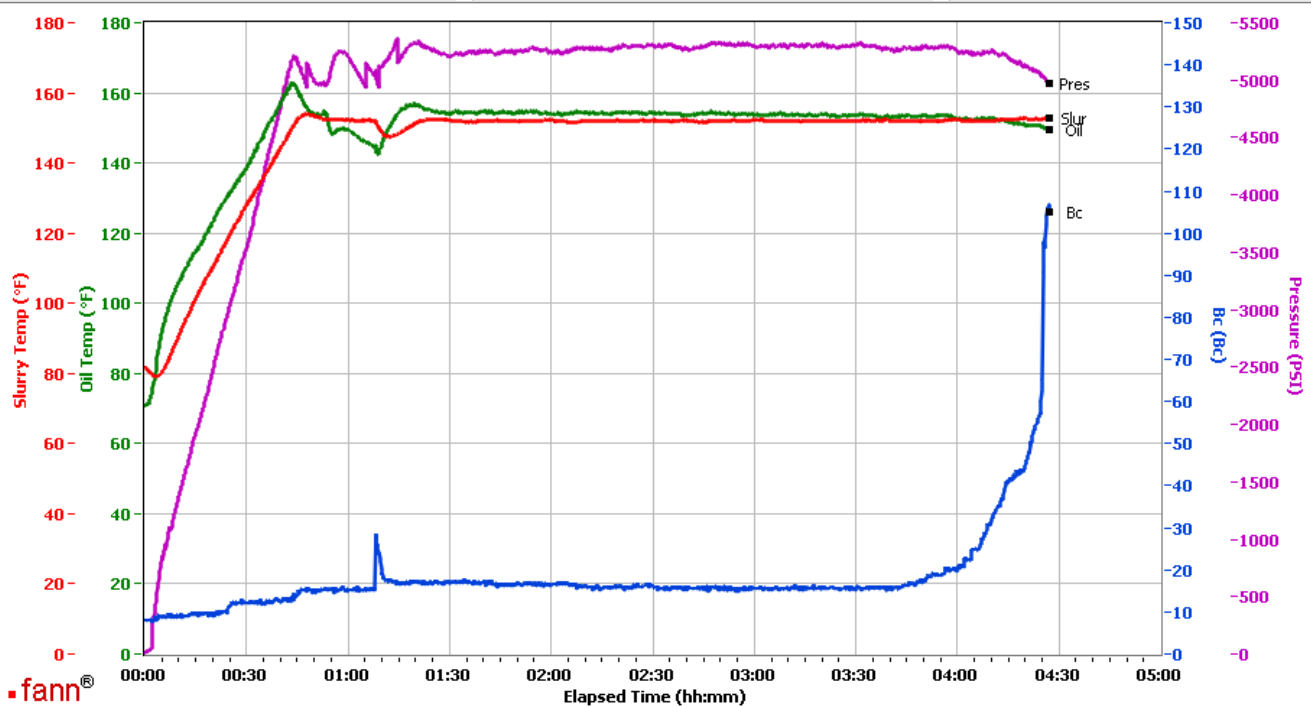
Deflection 16-- > 32-- > 24 after 1 minute.

Grand Junction, Colorado

Fields	Values
Project Name	GJ2465591-1 TERRA PRODUCTION BULK PR
Test ID	35398339
Request ID	GJ2465591-1
Tested by	DEBA
Customer	TERRA ENERGY PARTNERS
Well No	PA 332-26
Rig	H&P271
Casing/Liner Size	4.5"

Fields	Values
Job Type	PRODUCTION CASING
Cement Type	MOUNTAIN G
Cement Weight	Standard
Test Date	04/11/18
Test Time	12:08 AM
Temp. Units	degF
Pressure Units	PSI
SW Version	2.1.0.507

Events	Results
30.00 Bc	04h:08m
40.00 Bc	04h:14m
50.00 Bc	04h:21m
70.00 Bc	04h:25m
100.00 Bc	04h:26m
00h:30m	12.17
01h:00m	15.61
01h:30m	16.93



Data File C:\Documents and Settings\M290\Local Settings\Temporary Internet Files\Content.IE5\4TIJ89YN\GJ2465591-1 TERRA PRODUCTION BULK PRIMARY[1].tdms

Comments CS0847 TR#8658 425 SKS AND CS0848 TR#8678 425 SKS

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