

HALLIBURTON

iCem[®] Service

TERRA ENERGY PARTNERS

United States of America, COLORADO

For: Terra

Date: Saturday, November 17, 2018

NR 44-3 Production PJR

API# 05-045-23902-00

Sincerely,

Grand Junction Cement Engineering

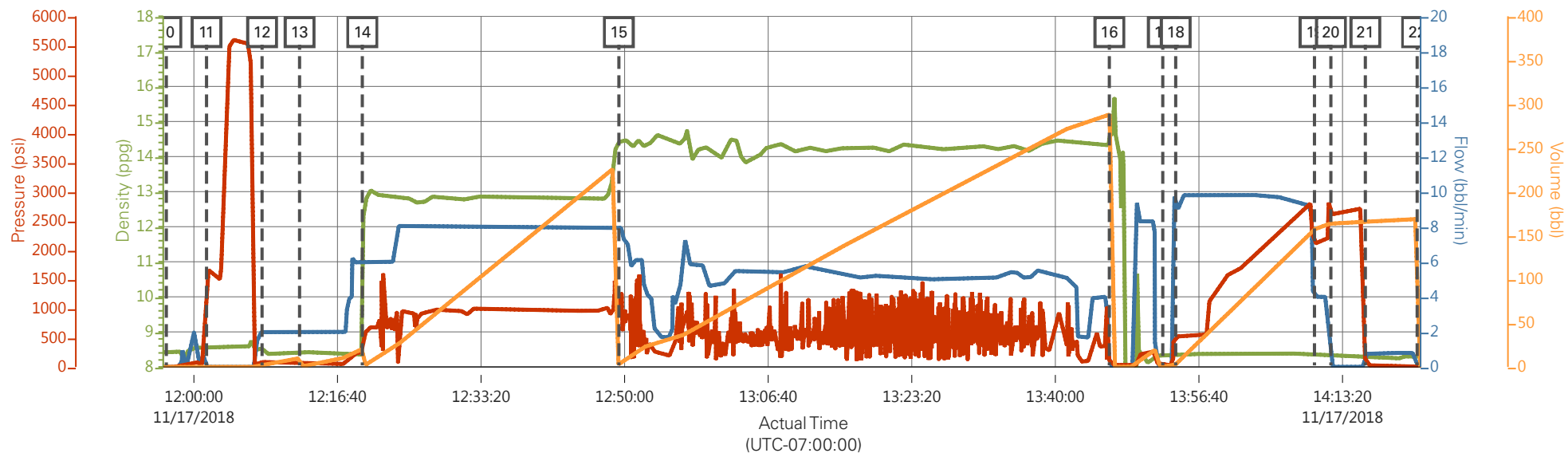
1.0 Real-Time Job Summary

1.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	11/17/2018	01:00:00	USER					
Event	2	Pre-Convoy Safety Meeting	11/17/2018	05:10:00	USER					
Event	3	Crew Leave Yard	11/17/2018	05:30:00	USER					
Event	4	Arrive At Loc	11/17/2018	07:30:00	USER					CREW WAS REQUESTED ON LOC @ 0730, CREW ARRIVED AT 0730, RIG RUNNING CASING
Event	5	Assessment Of Location Safety Meeting	11/17/2018	07:40:00	USER					
Event	6	Spot Equipment	11/17/2018	07:45:00	USER					
Event	7	Pre-Rig Up Safety Meeting	11/17/2018	07:55:00	USER					
Event	8	Rig-Up Equipment	11/17/2018	08:00:00	USER					
Event	9	Pre-Job Safety Meeting	11/17/2018	11:30:00	USER					
Event	10	Start Job	11/17/2018	11:56:48	COM5					TD: 10623 TP: 10617.8 SJ: 31.54 MW: 11.2PPG 4 1/2" 11.6#/FT CSG IN 8 3/4" OH WATER TEST: PH: 7 POTASSIUM: 450 CHLORIDES: 0 SULFATES: <200 TEMP: 64 DEGREES.
Event	11	Test Lines	11/17/2018	12:01:28	COM5			5000.00		5000 PSI TEST SUCCESSFUL
Event	12	H2O Spacer	11/17/2018	12:07:55	COM5	8.33	4.00	220.00	10.00	10 BBL FRESH H2O SPACER
Event	13	Mudflush Spacer	11/17/2018	12:12:16	COM5	8.40	4.00	260.00	20.00	20 BBL MUDFLUSH SPACER

Event	14	Pump Lead Cement	11/17/2018	12:19:33	COM5	12.70	8.00	670.00	222.4	675 SKS @ 12.7 PPG 1.85 YLD 8.94 GAL/SK H2O
Event	15	Pump Tail Cement	11/17/2018	12:49:20	COM5	14.43	5.00	1112.00	224.1	740 SKS @ 14.2 PPG 1.7 YLD 7.53 GAL/SK H2O HAD TO MIX AND PUMP TAIL CMT AT 5 BPM DUE TO MIXING ISSUES, CAUSE TBD.
Event	16	Shutdown	11/17/2018	13:46:16	USER					
Event	17	Drop Top Plug	11/17/2018	13:52:28	COM5					PLUG AWAY
Event	18	Pump Displacement	11/17/2018	13:53:58	COM5	8.48	10.00	2820.00	164.1	FRESH H2O DISPLACEMENT W/ KCL, 3# BE-6, 1 GAL MMCR
Event	19	Slow Rate	11/17/2018	14:10:05	USER	8.33	4.00	2105.00	154.00	
Event	20	Bump Plug	11/17/2018	14:11:59	COM5	8.32	4.00	2630.00	164.1	PLUG BUMPED AT CALCULATED DISPLACEMENT
Event	21	Check Floats	11/17/2018	14:15:59	COM5					FLOATS HELD, GAINED 3 BBL BACK TO PUMP
Event	22	End Job	11/17/2018	14:22:00	COM5					
Event	23	Post-Job Safety Meeting (Pre Rig- Down)	11/17/2018	14:25:00	USER					
Event	24	Rig-Down Equipment	11/17/2018	14:30:00	USER					GOOD CIRCULATION THROUGHOUT JOB. PIPE WAS RECIPROCATED. NO ADD HOURS CHARGED. TOP PLUG USED, 3# BE-6 USED, 1 GAL MMCR.
Event	25	Depart Location Safety Meeting	11/17/2018	15:50:00	USER					
Event	26	Crew Leave Location	11/17/2018	16:00:00	USER					THANK YOU FOR CHOOSING HALLIBURTON CEMENTING ANTHONY ANDREWS AND CREW

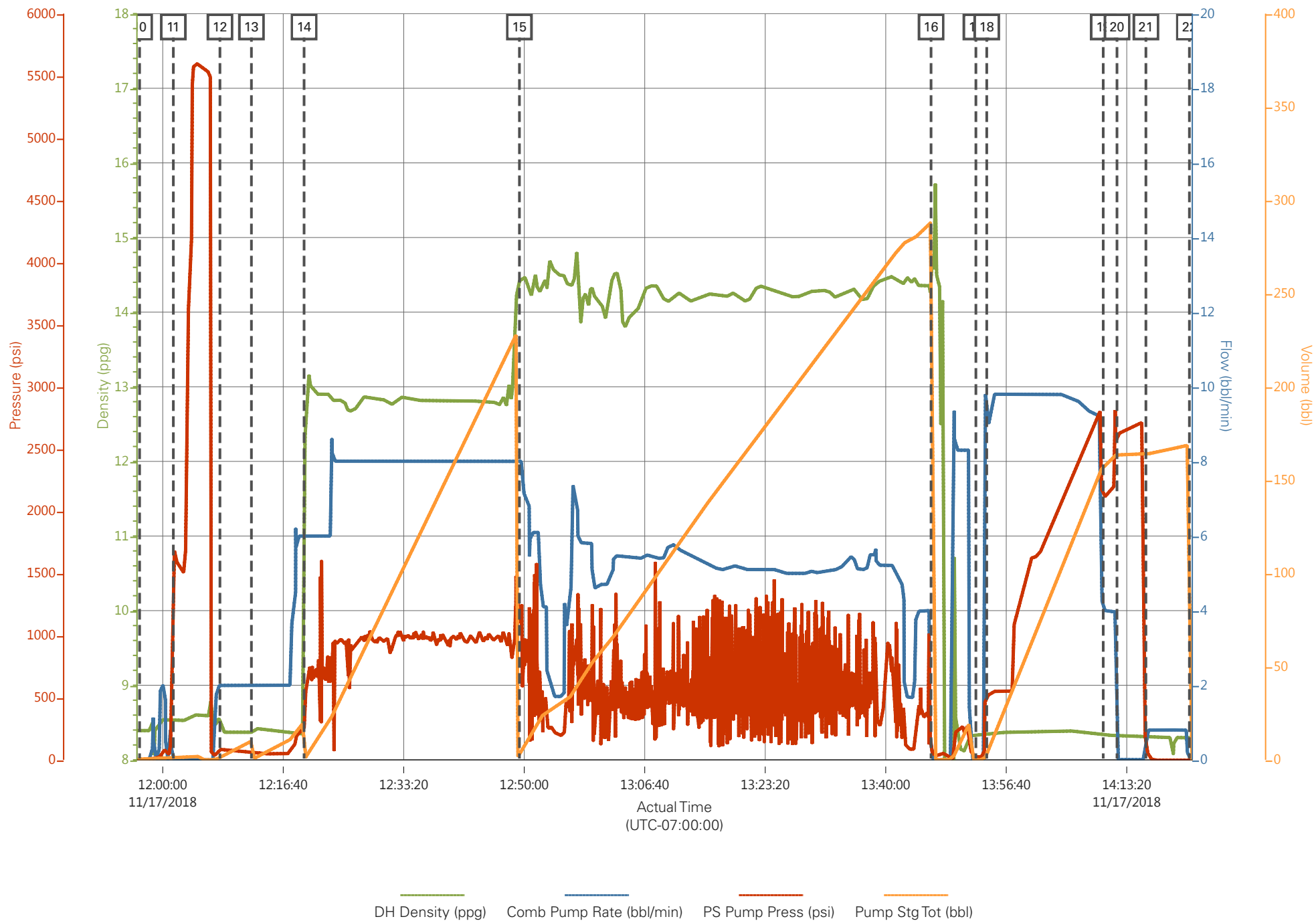
TEP - CLOUGH NR 44-3 - 4 1/2" PRODUCTION



— DH Density (ppg)
 — Comb Pump Rate (bbl/min)
 — PS Pump Press (psi)
 — Pump Stg Tot (bbl)

Description	Actual Time (UTC-07:00:00)	DH Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Pump Stg Tot (bbl)
10 Start Job	11:56:48	8.39	0.00	-1.00	0.00
11 Test Lines	12:01:28	8.54	0.00	1692.00	1.80
12 H2O Spacer	12:07:55	8.56	2.00	87.00	1.30
13 Mudflush Spacer	12:12:16	8.36	2.00	68.00	0.00
14 Pump Lead Cement	12:19:33	9.64	6.00	247.00	0.10
15 Pump Tail Cement	12:49:20	14.43	8.00	1112.00	3.30
16 Shutdown	13:46:16	14.43	0.00	102.00	287.90
17 Drop Top Plug	13:52:28	8.32	0.00	23.00	0.00
18 Pump Displacement	13:53:58	8.32	9.10	538.00	2.90
19 Slow Rate	14:10:05	8.33	4.00	2105.00	157.00
20 Bump Plug	14:11:59	8.32	0.00	2630.00	163.70
21 Check Floats	14:15:59	8.31	0.80	131.00	163.80
22 End Job	14:22:00	8.30	0.00	-5.00	0.00

TEP - CLOUGH NR 44-3 - 4 1/2" PRODUCTION



HALLIBURTON

Rockies, Grand Junction

Lab Results- Lead

Job Information

Request/Slurry	2513132/1	Rig Name	H&P 318	Date	05/NOV/2018
Submitted By	Connor Matthews	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	NR 44-3

Well Information

Casing/Liner Size	4.5 in	Depth MD	10670 ft	BHST	121°C / 249°F
Hole Size	8.75 in	Depth TVD	9943 ft	BHCT	82°C / 179°F
Pressure	6260 psi				

Drilling Fluid Information

Mud Supplier Name	Mud Trade Name	Density
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Cement Information - Lead Design



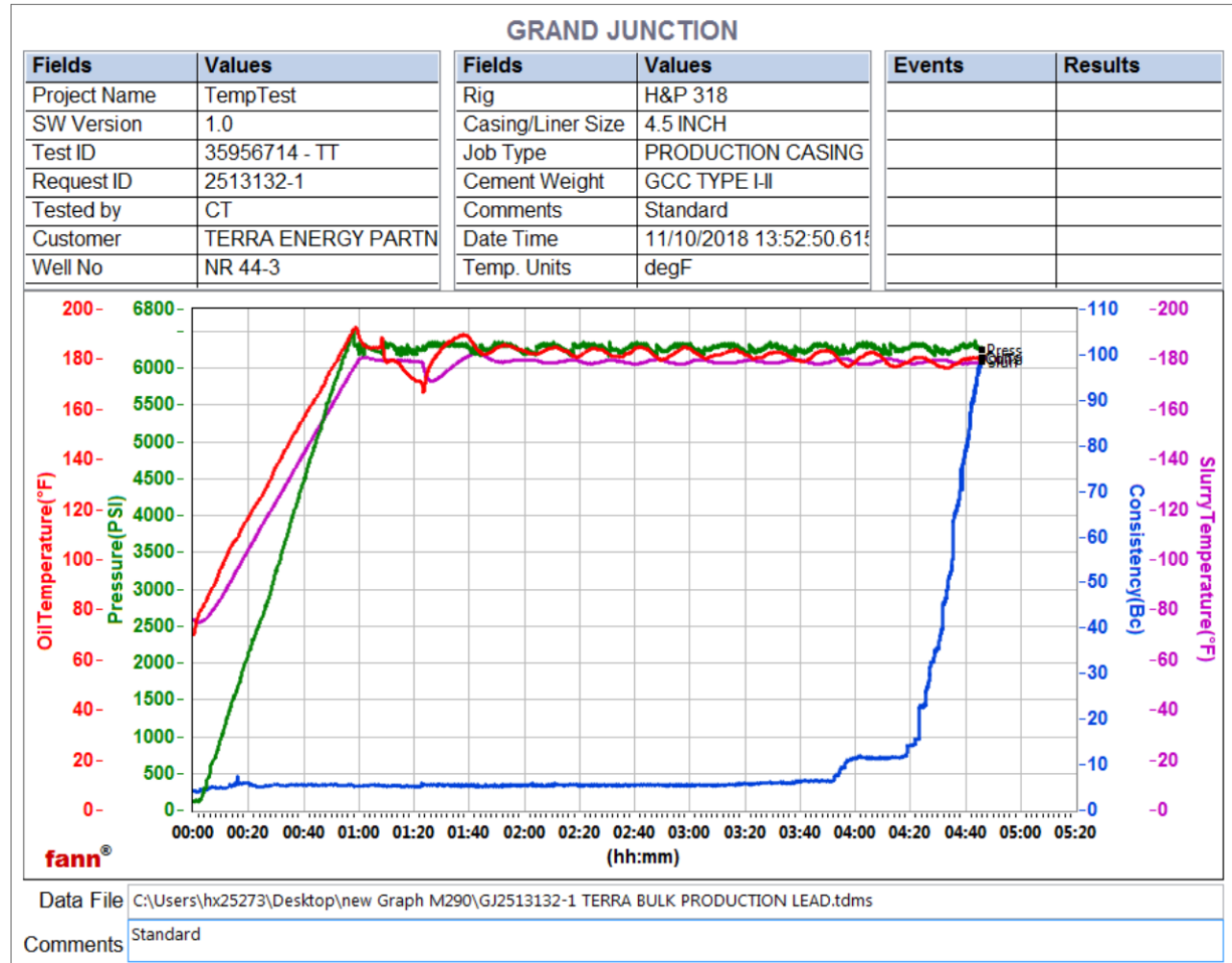
<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	Cement Properties		
		NeoCem Lead				Slurry Density	12.7	lbm/gal
						Slurry Yield	1.851	ft3/sack
						Water Requirement	8.949	gal/sack
						Total Mix Fluid	8.949	gal/sack
						Water Source	Fresh Water	
						Water Chloride		

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Thickening Time - ON-OFF-ON

11/NOV/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)
179	6260	58	4:27	4:34	4:38	4:45	4	68	15	5



Total sks = 675
 CS2445, Trailer 3212, 275 sks
 CS2444, Trailer 8677, 400 sks
 no deflection, 5Bc--- > 4Bc

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Rockies, Grand Junction

Lab Results- Tail

Job Information

Request/Slurry	2513133/1	Rig Name	H&P 318	Date	05/NOV/2018
Submitted By	Connor Matthews	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	NR 44-3

Well Information

Casing/Liner Size	4.5 in	Depth MD	10119 ft	BHST	121°C / 249°F
Hole Size	8.75 in	Depth TVD	9934 ft	BHCT	82°C / 179°F
Pressure	6254 psi				

Drilling Fluid Information

Mud Supplier Name	Mud Trade Name	Density
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Cement Information - Tail Design



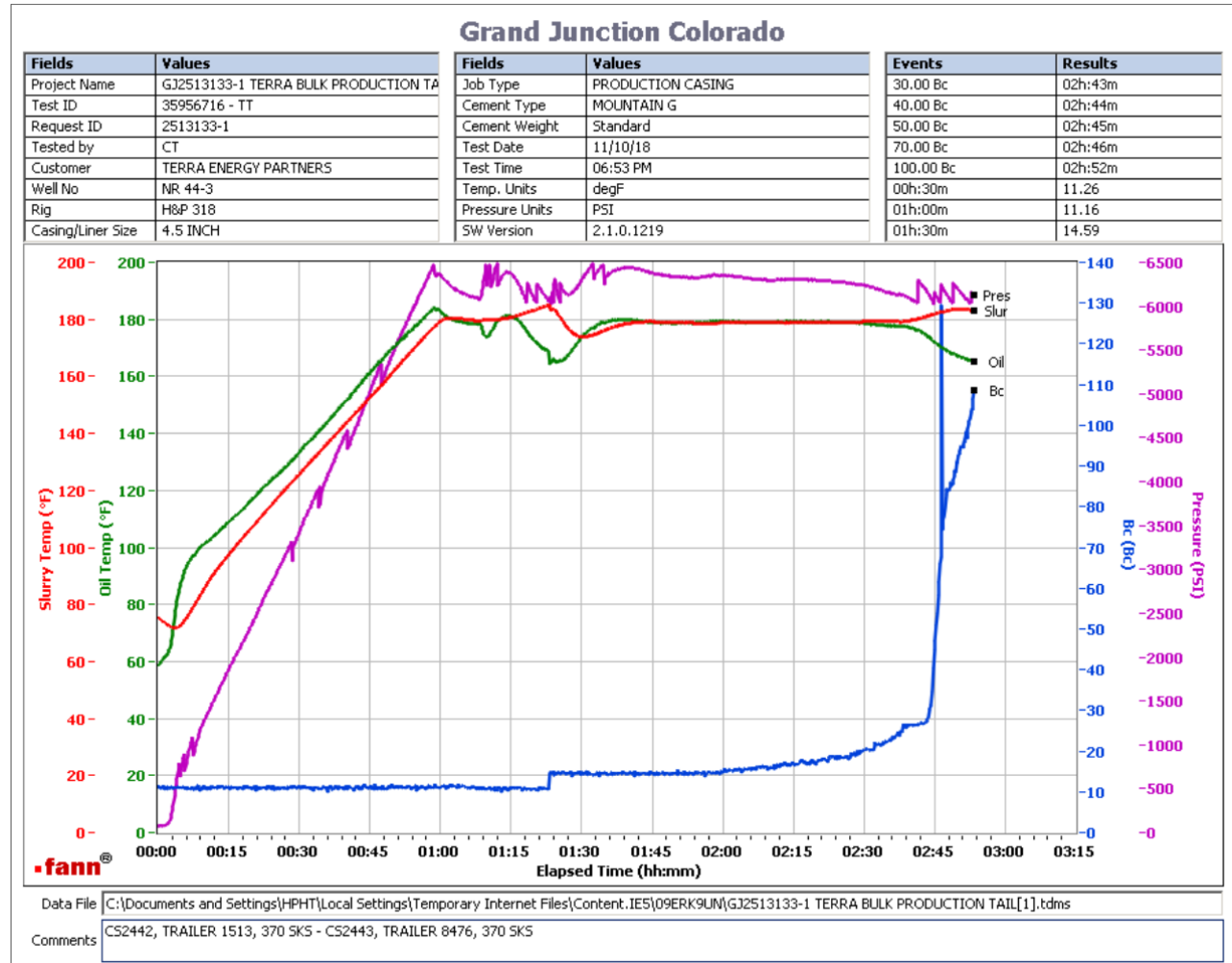
<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	Cement Properties		
		ThermaCem Tail				Slurry Density	14.2	lbm/gal
						Slurry Yield	1.704	ft3/sack
						Water Requirement	7.53	gal/sack
						Total Mix Fluid	7.53	gal/sack
						Water Source	Fresh Water	
						Water Chloride		

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Thickening Time - ON-OFF-ON

11/NOV/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)
179	6254	58	2:43	2:45	2:46	2:52	11	68	15	14



Total sks = 740
 CS2442, Trailer 1513, 370 sks
 CS2443, Trailer 8476, 370 sks
 Deflection: 11 - 14
 please see the graph, the heat of hydration at 2:30

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