

# HALLIBURTON

iCem<sup>®</sup> Service

## **TERRA ENERGY PARTNERS**

**For: Terra**

Date: Friday, September 22, 2017

**SR 422-12 Production**

API#05-045-23430

Sincerely,

**Grand Junction Cement Engineering**

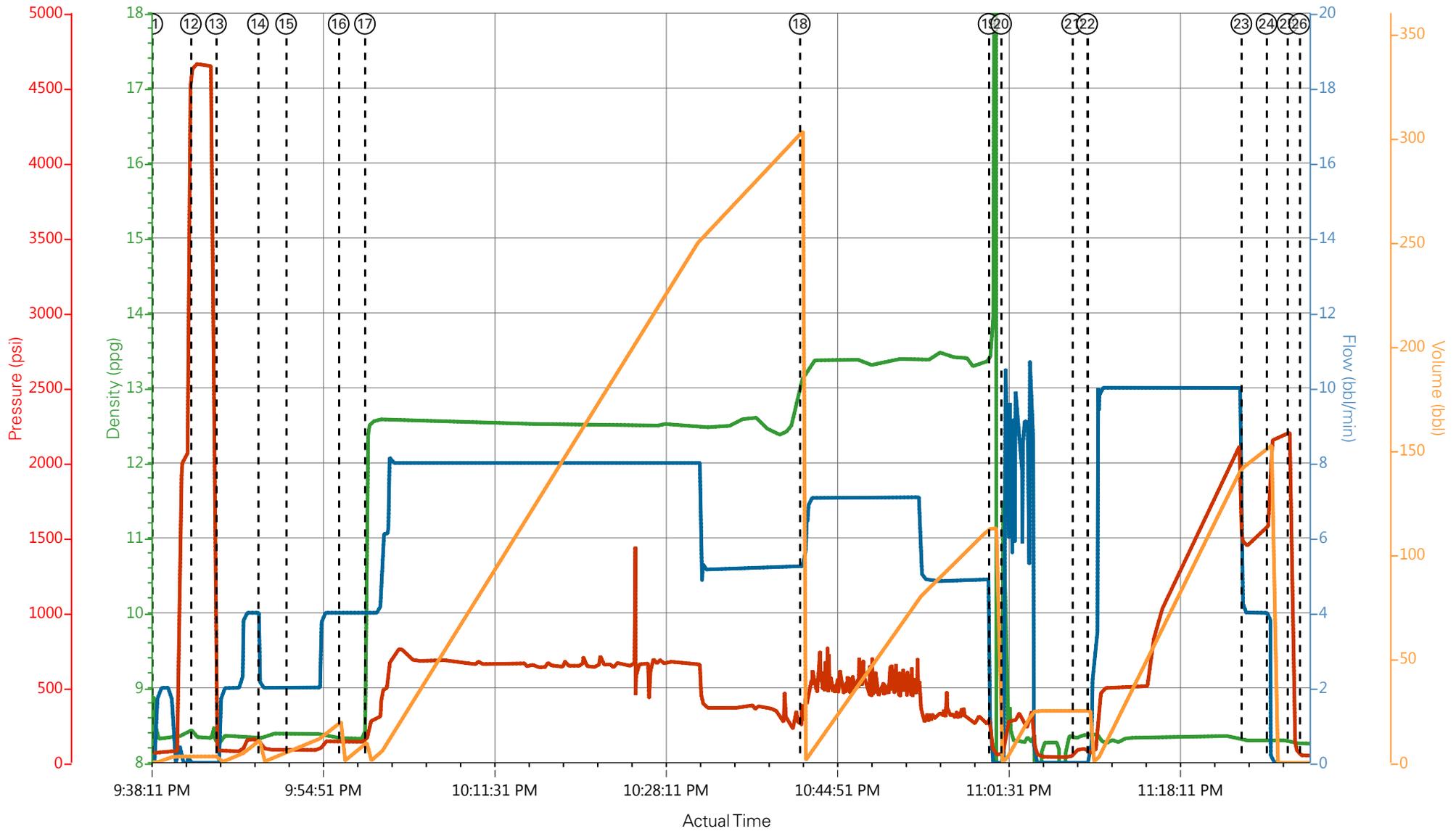
## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	DH Density <i>(ppg)</i>	Comb Pump Rate <i>(bbl/min)</i>	PS Pump Press <i>(psi)</i>	Pump Stg Tot <i>(bbl)</i>	Comments
Event	1	Call Out	9/22/2017	13:00:00	USER					REQUESTED ON LOCATION @ 19:00
Event	2	Pre-Convoy Safety Meeting	9/22/2017	15:45:00	USER					ALL HES PRESENT
Event	3	Crew Leave Yard	9/22/2017	16:00:00	USER					1 HT 400 PUMP TRUCK E8, 1 660 BULK TRUCK, 1 550 SERVICE PICKUP
Event	4	Arrive at Location from Service Center	9/22/2017	18:00:00	USER					RIG RUNNING CASING UPON HES ARRIVAL TO LOCATION
Event	5	Assessment Of Location Safety Meeting	9/22/2017	18:10:00	USER					MET WITH COMPANY REP, SDS OFFERED, DISCUSSED JOB PROCEDURE
Event	6	Pre-Rig Up Safety Meeting	9/22/2017	18:20:00	USER					ALL HES PRESENT
Event	7	Rig-Up Completed	9/22/2017	19:30:00	USER					1 HT 400 PUMP TRUCK E8, 1 660 BULK TRUCK, 1 SILO, 1- 4 1/2" QUICK LATCH PLUG CONTAINER, 1 550 SERVICE PICKUP
Event	8	Pre-Job Safety Meeting	9/22/2017	19:50:00	USER					ALL HES AND RIG CREW PRESENT
Event	9	Other	9/22/2017	19:55:00	USER					RIG CIRCULATED 532 GPM WITH 1400 PSI. PIPE RECIPICATED THROUGHOUT JOB. WATER: TEMP-62, CL-0, PH-7
Event	10	Start Job	9/22/2017	21:36:31	COM5	8.36	0.00	2.00	0.0	TD-9470', TP-9460', SJ-29.3', OH-8.75", CSG-4.5" 11.6# P110, SCSG-9.625" 32.3# J55 1115'. MUD-9.8PPG
Event	11	Prime Pumps	9/22/2017	21:38:33	USER	8.32	2.00	70.00	3.0	FRESH WATER
Event	12	Test Lines	9/22/2017	21:42:18	COM5	8.35	0.00	4657.00	3.0	ALL PRESSURE HELD
Event	13	Pump Water	9/22/2017	21:44:45	COM5	8.35	2.00	70.00	10.0	FRESH WATER
Event	14	Pump Mud Flush III	9/22/2017	21:48:50	COM5	8.33	4.00	150.00	20.0	MUD FLUSH III

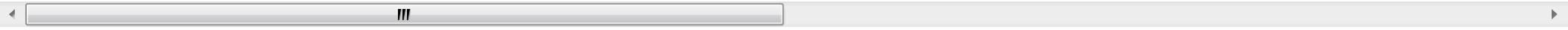
Event	15	Check weight	9/22/2017	21:51:34	COM5					WEIGHT VERIFIED BY PRESSURIZED MUD SCALES
Event	16	Pump Water	9/22/2017	21:56:41	COM5	8.32	4.00	142.00	10.0	FRESH WATER
Event	17	Pump Lead Cement	9/22/2017	21:59:14	COM5	12.50	8.00	710.00	259.1	NEOCEM LEAD, 750SKS, 12.5PPG, 1.94CF/SK, 9.6GAL/SK. 3 BOXES TUFF FIBER ADDED
Event	18	Pump Tail Cement	9/22/2017	22:41:31	COM5	13.30	7.00	534.00	81.6	THERMACEM TAIL, 265SKS, 13.3PPG, 1.73CF/SK, 7.81GAL/SK
Event	19	Shutdown	9/22/2017	22:59:52	COM5					END OF CEMENT
Event	20	Clean Lines	9/22/2017	23:01:05	USER					CLEANED PUMPS AND LINES TO PIT, RIG BLEW AIR BACK TO CLEAR LINE
Event	21	Drop Top Plug	9/22/2017	23:08:00	USER					PLUG AWAY
Event	22	Pump Displacement	9/22/2017	23:09:28	COM5	8.37	10.00	2135.00	146.2	KCL WATER, 3-1#BE6, 1GAL MMCR ADDED
Event	23	Slow Rate	9/22/2017	23:24:27	USER	8.29	4.00	1477.00	136.2	SLOW RATE LAST 10 BBLS
Event	24	Bump Plug	9/22/2017	23:26:53	COM5	8.29	4.00	1580.00	146.2	PLUG BUMPED 1580 PSI
Event	25	Check Floats	9/22/2017	23:28:55	USER	8.30	0.00	2209.00	0.0	FLOATS HELD 1 BBL BACK
Event	26	End Job	9/22/2017	23:30:05	COM5					GOOD RETURNS THROUGH OUT JOB.
Event	27	Post-Job Safety Meeting (Pre Rig-Down)	9/22/2017	23:35:00	USER					ALL HES PRESENT
Event	28	Rig-Down Completed	9/23/2017	00:15:00	USER					
Event	29	Pre-Convoy Safety Meeting	9/23/2017	00:30:00	USER					ALL HES PRESENT
Event	30	Crew Leave Location	9/23/2017	00:45:00	USER					THANK YOU FOR CHOOSING HALLIBURTON, ANDREW BRENNECKE AND CREW

# TERRA - YOUBERG SR 422-12 - 4 1/2" PRODUCTION



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

- ① Call Out                      ③ Crew Leave Yard                      ⑤ Assessment Of Location Safety Meeting                      ⑦ Rig-Up Completed                      ⑨ Other                      ⑪ Prime Pumps                      ⑬ Pump Water
- ② Pre-Convoy Safety Meeting                      ④ Arrive at Location from Service Center                      ⑥ Pre-Rig Up Safety Meeting                      ⑧ Pre-Job Safety Meeting                      ⑩ Start Job                      ⑫ Test Lines                      ⑭ Pump Mud Flush I



**HALLIBURTON** | iCem® Service

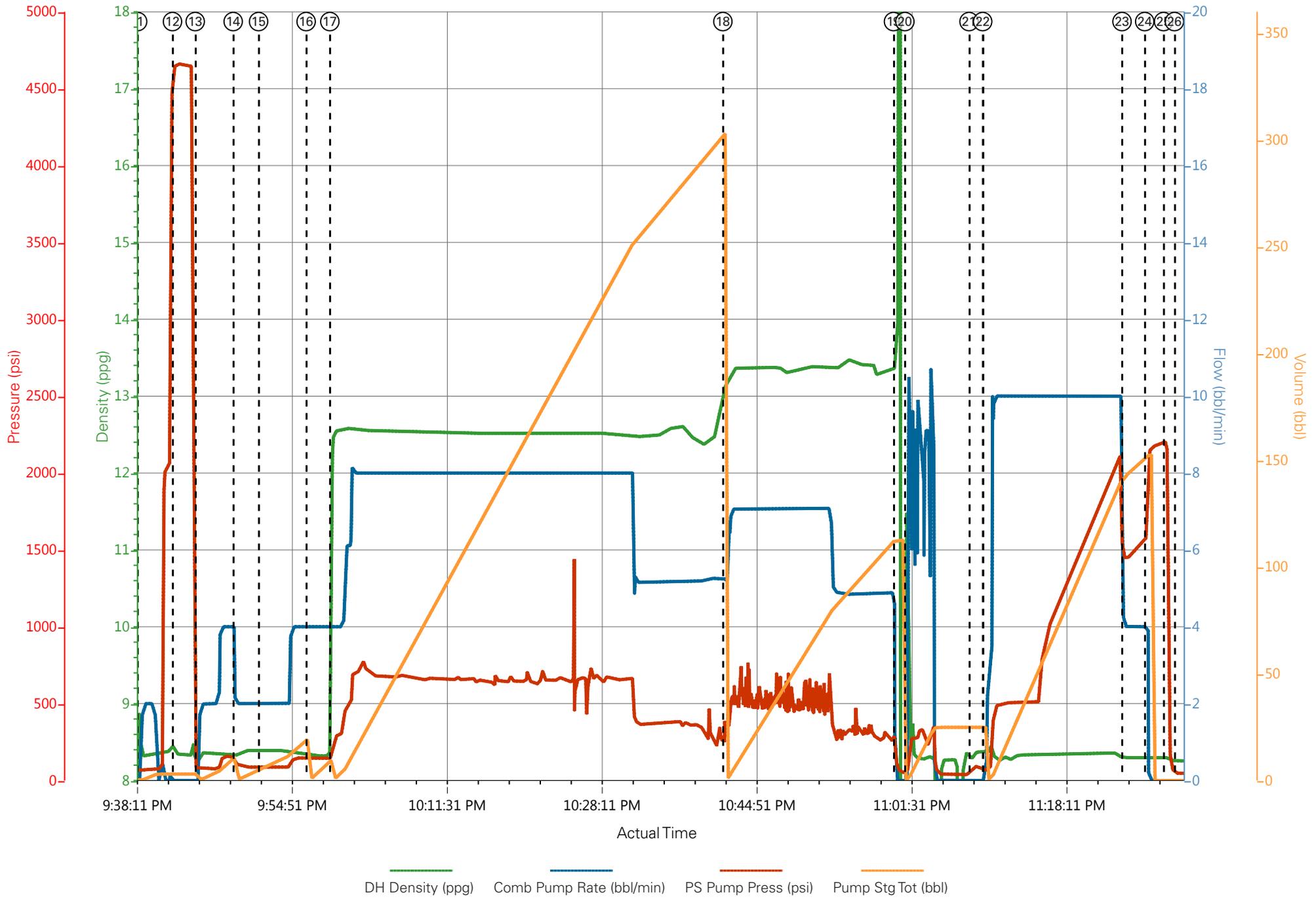
Created: 2017-09-22 19:04:50, Version: 4.2.393

Customer : TERRA ENERGY PARTNERS  
 Representative : JOSH PHILLIPS

Job Date : 9/22/2017  
 Sales Order # : 904312009

Well : YOUBERG SR 422-12  
 ELITE 8 : A. BRENNECKE / ANGELO

# TERRA - YOUBERG SR 422-12 - 4 1/2" PRODUCTION



### Job Information

<b>Request/Slurry</b>	2417653/1	<b>Rig Name</b>	H&P 318	<b>Date</b>	18/SEP/2017
<b>Submitted By</b>	Aaron Katz	<b>Job Type</b>	Production Casing	<b>Bulk Plant</b>	Grand Junction
<b>Customer</b>	Terra Energy Partners	<b>Location</b>	Garfield	<b>Well</b>	SR 422-12

### Well Information

<b>Casing/Liner Size</b>	4.5 in	<b>Depth MD</b>	9477 ft	<b>BHST</b>	115°C / 239°F
<b>Hole Size</b>	8.75 in	<b>Depth TVD</b>	9321 ft	<b>BHCT</b>	76°C / 169°F
<b>Pressure</b>	5830 psi				

### Drilling Fluid Information

<b>Mud Supplier Name</b>		<b>Mud Trade Name</b>		<b>Density</b>	
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### Cement Information - Lead Design

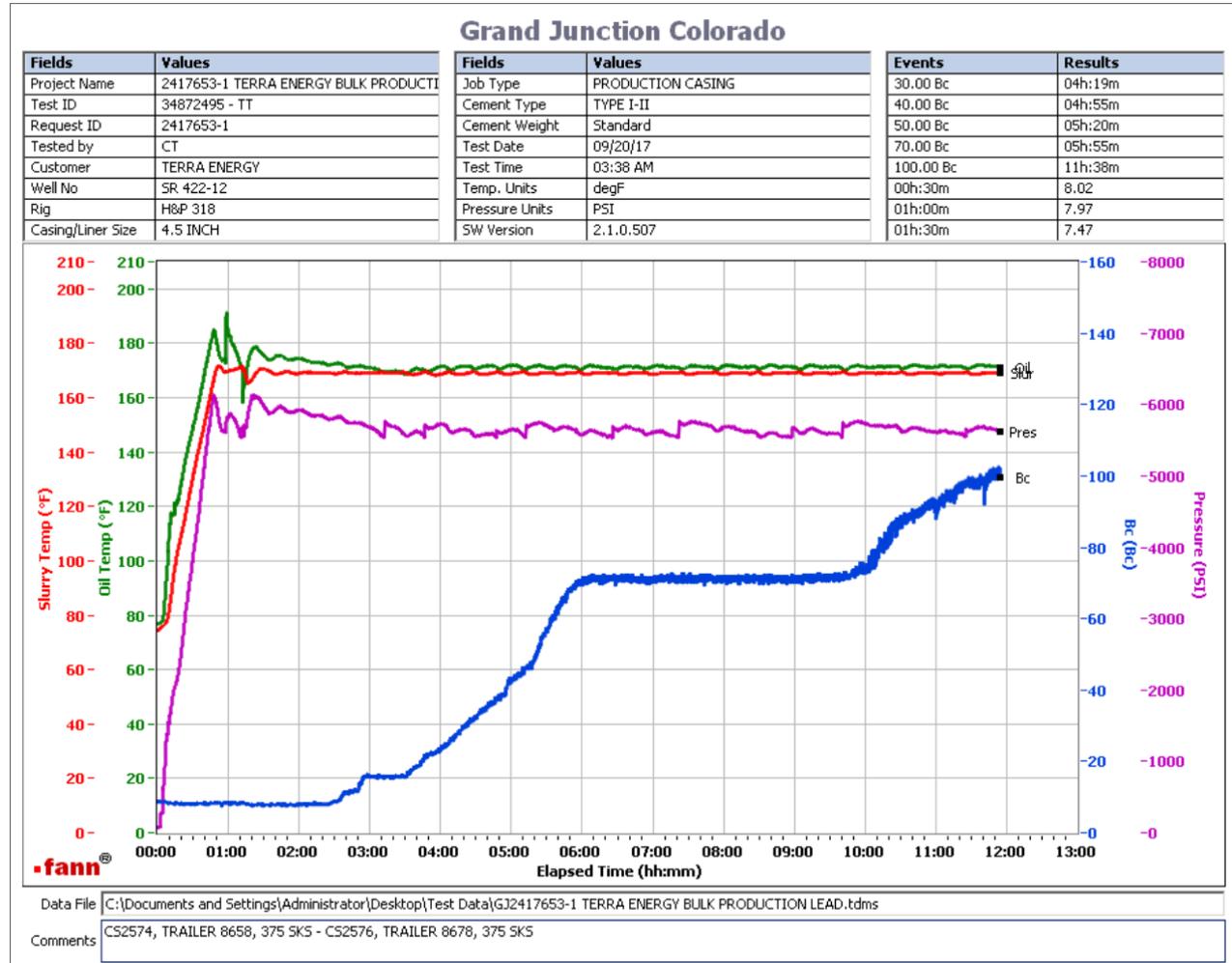
<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	<u>Cement Properties</u>		
		NeoCem Lead				Slurry Density	12.5	lbm/gal
						Slurry Yield	1.941	ft3/sack
						Water Requirement	9.623	gal/sack
						Total Mix Fluid	9.623	gal/sack
						Water Source	Fresh Water	
						Water Chloride		

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Thickening Time - ON-OFF-ON

20/SEP/2017

Test Temp (°F)	Pressure (psi)	Reached in (min)	30 Bc (hh:min)	50 Bc (hh:min)	70 Bc (hh:min)	100 Bc (hh:min)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)
169	5830	47	4:19	5:20	5:55	11:38	9	57	15	8



Total sks= 750  
 CS2574, Trailer 8658, 375 sks  
 CS2576, Trailer 8678, 375 sks  
 No deflection

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**Job Information**

<b>Request/Slurry</b>	2417654/1	<b>Rig Name</b>	H&P 318	<b>Date</b>	18/SEP/2017
<b>Submitted By</b>	Aaron Katz	<b>Job Type</b>	Production Casing	<b>Bulk Plant</b>	Grand Junction
<b>Customer</b>	Terra Energy Partners	<b>Location</b>	Garfield	<b>Well</b>	SR 422-12

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<b>Pressure</b>	5830 psi				

**Drilling Fluid Information**

<b>Mud Supplier Name</b>		<b>Mud Trade Name</b>		<b>Density</b>	
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**Cement Information - Tail Design** 

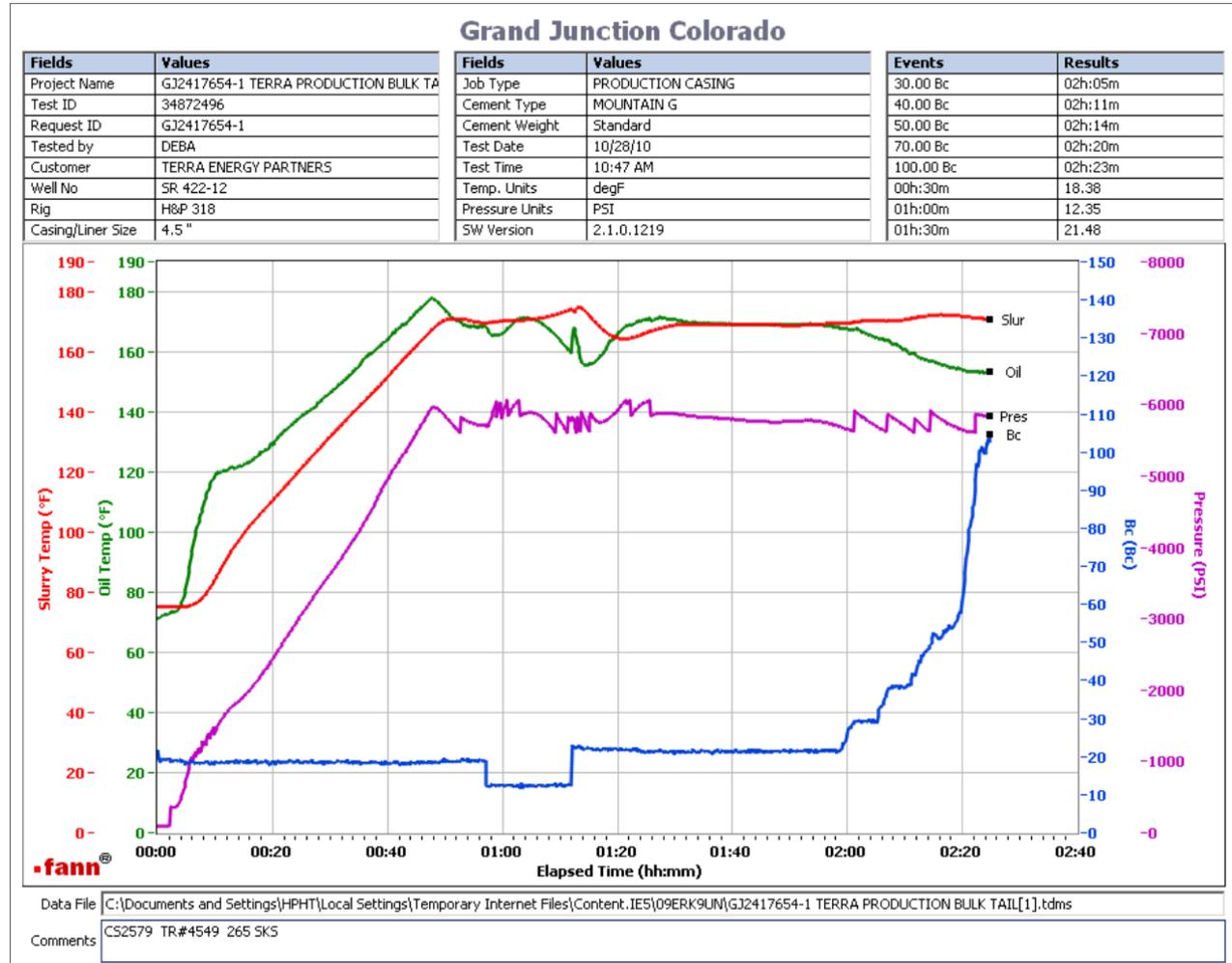
<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	<b>Cement Properties</b>		
		ThermaCem Tail				Slurry Density	13.3	lbm/gal
						Slurry Yield	1.733	ft3/sack
						Water Requirement	7.799	gal/sack
						Total Mix Fluid	7.799	gal/sack
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Thickening Time - ON-OFF-ON

20/SEP/2017

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169	5830	47	2:05	2:14	2:20	2:23	19	57	15	22



265 sks tail  
 CS2579 TR#4549 265 sks  
 Deflection: 18 - 22

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