

HALLIBURTON

iCem[®] Service

TERRA ENERGY PARTNERS-EBUS

For: Terra

Date: Sunday, March 17, 2019

TR 543-22-597 Production PJR

API #05-045-23687-00

Sincerely,

Grand Junction Cement Engineering

2.0 Real-Time Job Summary

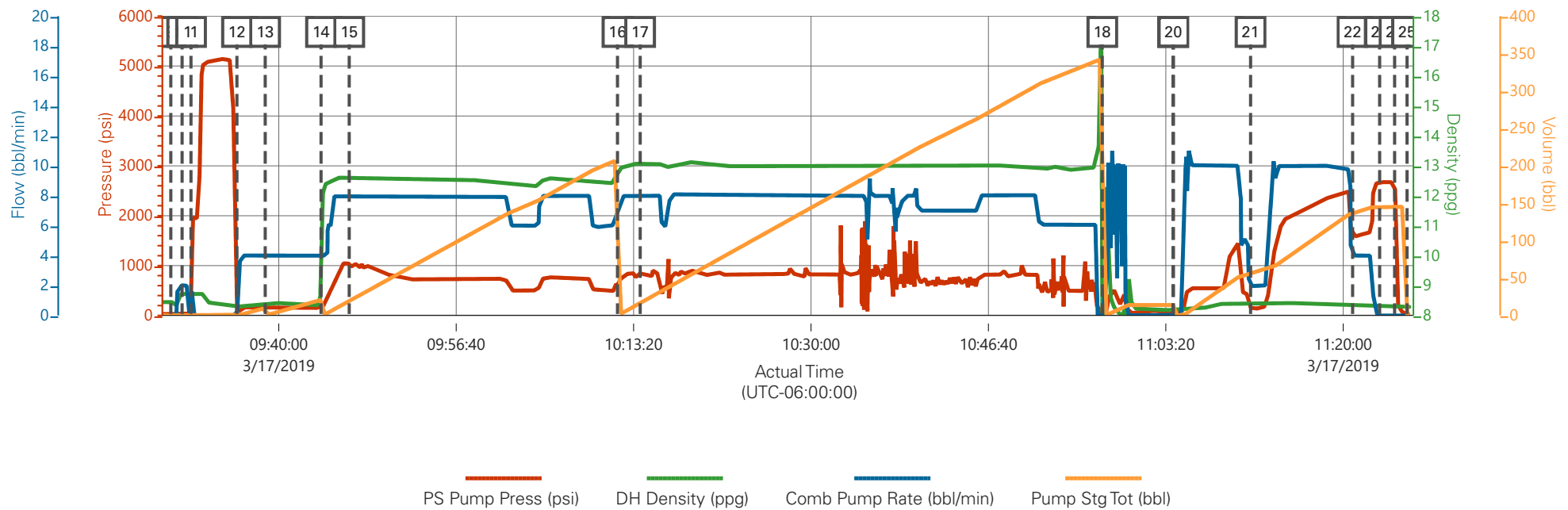
2.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	3/16/2019	23:00:00	USER					REQUESTED ON LOCATION @ 07:00
Event	2	Pre-Convoy Safety Meeting	3/17/2019	01:00:00	USER					ALL HES PRESENT
Event	3	Crew Leave Yard	3/17/2019	01:10:00	USER					1 HT 400 PUMP TRUCK E8, 1 660 BULK TRUCK, 1 550 SERVICE PICKUP
Event	4	Arrive At Loc	3/17/2019	04:45:00	USER					RIG RUNNING CASING WHEN HES ARRIVED AT LOCATION
Event	5	Assessment Of Location Safety Meeting	3/17/2019	05:00:00	USER					MET WITH COMP REP, AND WENT OVER NUMBERS AND JOB PROCEDURE. WALKED AROUND LOCATION AND COLLECTED WATER SAMPLE (PH- 7.0, CHLORIDES- 500, TEMP- 52F). COMP REP WAS OFFERED SDS FOR ALL CHEMICLES USED BY HES. CALIBRATED MUD SCALES ON WATER.
Event	6	Pre-Rig Up Safety Meeting	3/17/2019	05:10:00	USER					ALL HES PRESENT
Event	7	Rig-Up Equipment	3/17/2019	05:20:00	USER					HES RIGGED UP 1 HT400 PUMP TRUCK, 1 660 BULK TRUCK, 2 CEMENT SILOS, 2" DISCHARGE IRON, AND 4" SUCTION HOSE WITHOUT ENTERING RED ZONE.
Event	8	Pre-Job Safety Meeting	3/17/2019	09:00:00	USER					ALL HES EMPLOYEES AND RIG CREW PRESENT, RIG CIRCULATED @ 10 BPM PRIOR TO JOB PRESSURE @ 1380 PSI. WITH 1500CFM .
Event	9	Start Job	3/17/2019	09:29:51	COM6					TD 9450.44', TP 9446', SJ 30.76', SURFACE CSG 9 5/8" 36# J55 SET @ 2678' PRODUCTION CSG 4 1/2" 11.6# P-110, OH 8 3/4", MUD 9 PPG

Event	10	Prime Lines	3/17/2019	09:30:55	USER	8.33	2	60	2	FRESH WATER
Event	11	Test Lines	3/17/2019	09:31:45	COM6			5140		ALL LINES HELD PRESSURE AT 5140 PSI
Event	12	Pump H2O Spacer	3/17/2019	09:36:04	COM6	8.33	4	60	10	10 BBL FRESH WATER
Event	13	Mud Flush	3/17/2019	09:38:43	COM6	8.4	4	160	20	20BBLs MUD FLUSH
Event	14	Pump Lead Cement	3/17/2019	09:43:58	COM6	12.5	8	730	196	565 SKS NEOCEM CMT 12.5 PPG, 1.94 FT3/SK, 9.6 GAL/SK
Event	15	Check Weight	3/17/2019	09:46:37	USER					WEIGHT VERIFIED VIA PRESSUREIZED MUD SCALES
Event	16	Pump Tail Cement	3/17/2019	10:11:49	COM6	13.0	8	850	295	800 SKS NEOCEM CMT 13 PPG, 2.07 FT3/SK, 9.43 GAL/SK.
Event	17	Check Weight	3/17/2019	10:13:57	USER					WEIGHT VERIFIED VIA PRESSUREIZED MUD SCALES
Event	18	Clean Lines	3/17/2019	10:57:22	COM6					END OF CEMENT. CLEAN PUMPS AND LINES TO PIT.
Event	19	Drop Top Plug	3/17/2019	11:04:01	COM6					LAUNCH VERIFIED BY CO-REP
Event	20	Pump Displacement	3/17/2019	11:04:03	COM6	8.4	10	2500	146	1 GAL MMCR IN FIRST 10 BBLs, 3 LBS BE-6 IN FIRST 30 BBLs, 1 50 LB. BAG KCL THROUGHOUT DISPLACEMENT
Event	21	Slow Rate	3/17/2019	11:11:18	USER					SLOWED TO FIX LEAK ON CEMENT HEAD
Event	22	Slow Rate	3/17/2019	11:20:53	USER	8.4	4	1580	136	SLOW RATE TO 4 BPM TO BUMP PLUG
Event	23	Bump Plug	3/17/2019	11:23:26	COM6	8.4	4	1680	146	LANDED PLUG AT 1680 PSI, BROUGHT UP TO 2675 PSI
Event	24	Check Floats	3/17/2019	11:24:50	USER					FLOATS HELD, 1.5BBLs BACK TO TRUCK
Event	25	End Job	3/17/2019	11:26:00	COM6					RETURNS THROUGH OUT CEMENT WITH 1500CFM ON PARASITE LINE. LOST RETURNS AT THE BEGINNING OF DISPLACEMENT WHEN AIR WAS SHUT OFF. PIPE WAS RECIPERICATED. USED THIRD PARTY TOP PLUG, NO SUGAR USED. 30BBLs OF SPACER TO SURFACE.
Event	26	Post-Job Safety	3/17/2019	11:30:00	USER					ALL HES PRESENT

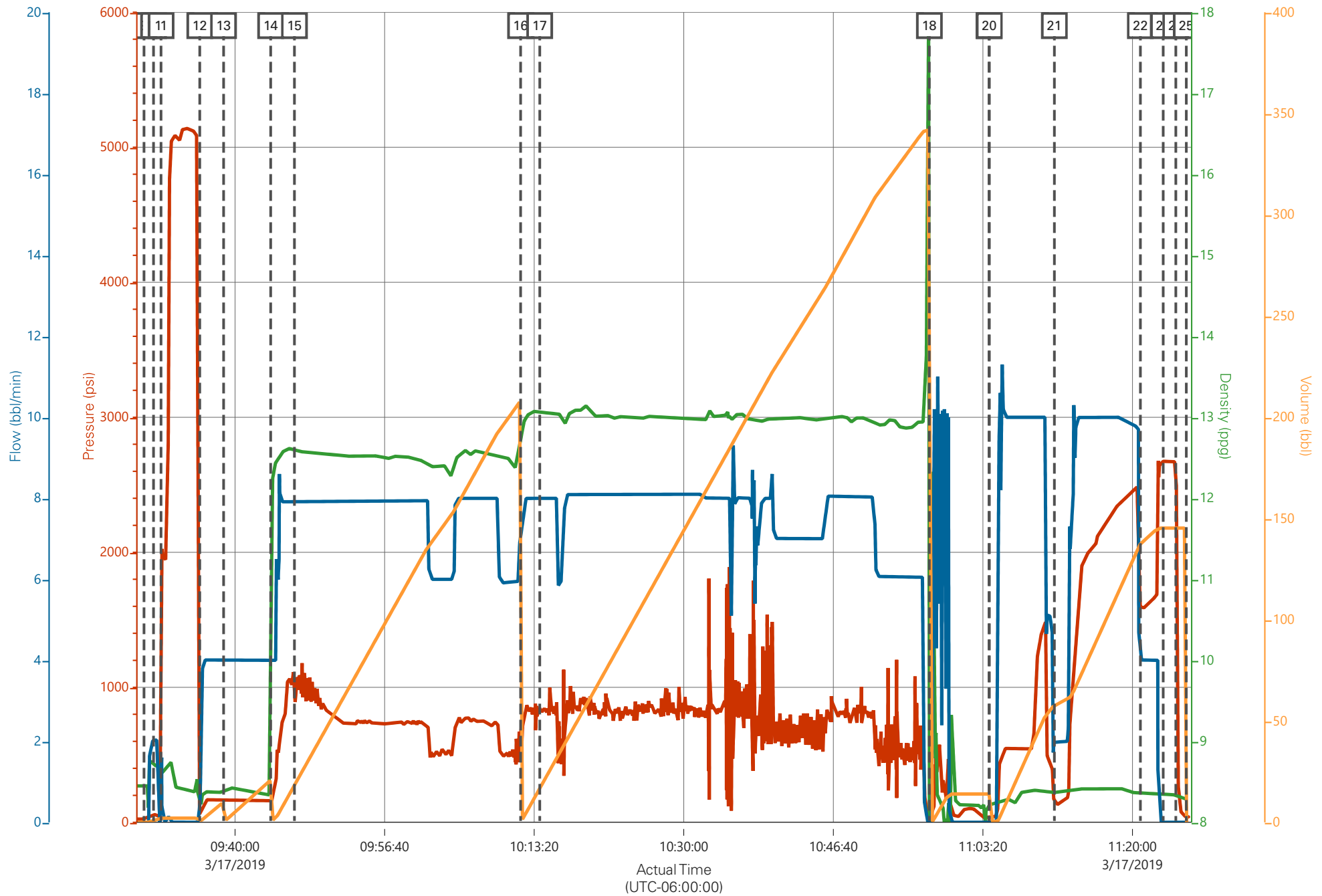
Meeting (Pre Rig-Down)						
Event	27	Rig Down Lines	3/17/2019	11:40:00	USER	ALL HES PRESENT
Event	28	Pre-Convoy Safety Meeting	3/17/2019	13:20:00	USER	ALL HES PRESENT
Event	29	Crew Leave Location	3/17/2019	13:33:00	USER	THANK YOU FOR CHOOSING HALLIBURTON CEMENT, SHAWN BLOSSOM AND CREW

TEP TR 543-22-597 Production



Description	Actual Time (UTC-06:00:00)	PS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)	Pump Stg Tot (bbl)
9 Start Job	09:29:51	23.00	8.45	0.00	0.00
10 Prime Lines	09:30:55	58.00	8.70	2.00	1.00
11 Test Lines	09:31:45	37.00	8.68	0.00	2.00
12 Pump H2O Spacer	09:36:04	48.00	8.25	0.00	0.00
13 Mud Flush	09:38:43	159.00	8.37	4.00	10.10
14 Pump Lead Cement	09:43:58	144.00	9.63	4.00	0.00
15 Check Weight	09:46:37	1046.00	12.61	8.00	18.10
16 Pump Tail Cement	10:11:49	634.00	12.79	7.10	208.20
17 Check Weight	10:13:57	843.00	13.05	8.00	16.80
18 Clean Lines	10:57:22	46.00	9.59	0.00	341.80
19 Drop Top Plug	11:04:01	45.00	8.22	0.00	14.00
20 Pump Displacement	11:04:03	46.00	8.22	0.00	0.00
21 Slow Rate	11:11:18	139.00	8.36	2.00	57.60
22 Slow Rate	11:20:53	1592.00	8.35	4.00	137.50
23 Bump Plug	11:23:26	2675.00	8.34	0.00	145.30
24 Check Floats	11:24:50	2660.00	8.34	0.00	145.30
25 End Job	11:26:00	41.00	8.29	0.00	0.00

TEP TR 543-22-597 Production



Job Information

Request/Slurry	2541046/1	Rig Name	H&P 271	Date	11/MAR/2019
Submitted By	Connor Matthews	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	Trail Ridge 543-22-597

Well Information

Casing/Liner Size	4.5 in	Depth MD	9493 ft	BHST	112°C / 234°F
Hole Size	8.75 in	Depth TVD	9069 ft	BHCT	73°C / 164°F
Pressure	5648 psi				

Drilling Fluid Information

Mud Supplier Name	Baroid	Mud Trade Name	BARADRIL-N	Density	
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Cement Information - Lead Design

<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>MP</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	Cement Properties		
							Slurry Density	12.5	lbm/gal
							Slurry Yield	1.94	ft3/sack
							Water Requirement	9.62	gal/sack
							Total Mix Fluid	9.62	gal/sack
							Water Source	Fresh Water	
							Water Chloride		

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Operation Test Results Request ID 2541046/1

Thickening Time - ON-OFF-ON, Request Test ID:36306258

14/MAR/2019

Test Temp (degF)	Pressure (psi)	Reached in (min)	30 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)	Termination time (hh:mm)	Termination Bc
164	5648	46	4:50	5:38	6:05	5	56	15	4	14:11	37

Total sks = 565

CS0329 TR#1283 R 145 SKS

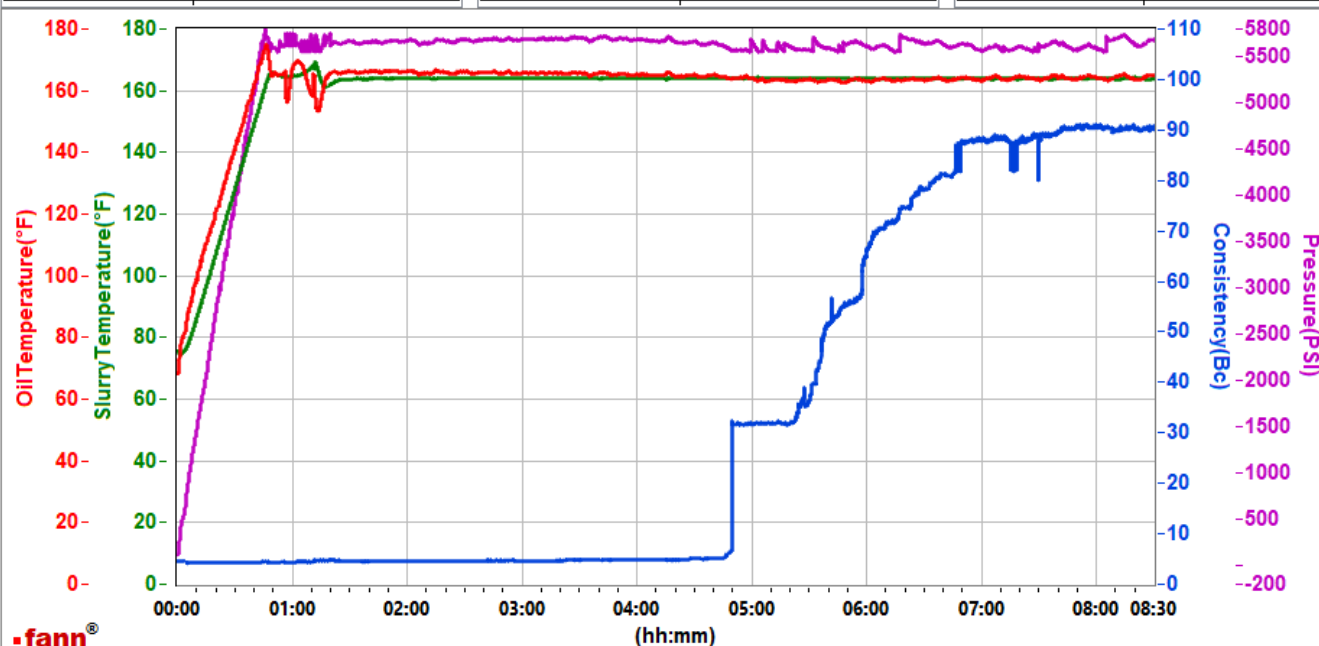
CS0330 TR#2878 420 SJKS

No deflection

Test pulled at 14:11, 37 Bc. Slurry was 98% core set and spinning in the cup. Hit 91 Bc at 8:29 and started spinning in cup. Small temp oscillation started around 5:02.

GRAND JUNCTION

Fields	Values	Fields	Values	Events	Results
Project Name	GJ2541046-1 Terra Prodi	Rig	H&P271	30 Bc	4:50
SW Version	1.0	Casing/Liner Size	4.5 INCH	50 Bc	5:38
Test ID	36306258- TT	Job Type	PRODUCTION CASING	70 Bc	6:05
Request ID	2541046-1	Cement Weight	GCC TYPE I-II		
Tested by	DS	Comments	Light Weight		
Customer	TERRA ENERGY PARTN	Date Time	3/13/2019 11:45:13.703		
Well No	TR 543-22-597	Temp. Units	degF		



Data File N:\01 Test Graphs\GJ2541046-1 TERRA PRODUCTION BULK LEAD.tdms

Comments Light Weight

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Rockies, Grand Junction

Lab Results- Tail

Job Information

Request/Slurry	2541047/1	Rig Name	H&P 271	Date	11/MAR/2019
Submitted By	Connor Matthews	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	Trail Ridge 543-22-597

Well Information

Casing/Liner Size	4.5 in	Depth MD	9493 ft	BHST	112°C / 234°F
Hole Size	8.75 in	Depth TVD	9069 ft	BHCT	73°C / 164°F
Pressure	5648 psi				

Drilling Fluid Information

Mud Supplier Name	Baroid	Mud Trade Name	BARADRIL-N	Density
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Cement Information - Tail Design



<u>Conc</u>	<u>UOM</u>	<u>Cement/Additive</u>	<u>MP</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	Cement Properties		
							Slurry Density	13	lbm/gal
							Slurry Yield	2.07	ft3/sack
							Water Requirement	9.42	gal/sack
							Total Mix Fluid	9.42	gal/sack
							Water Source	Fresh Water	
							Water Chloride		

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Operation Test Results Request ID 2541047/1

Thickening Time - ON-OFF-ON, Request Test ID:36306260

13/MAR/2019

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)
164	5648	46	2:21	2:29	2:41	2:43	15	56	15	26

Total sks =800

CS0324 TR#8658 350 SKS

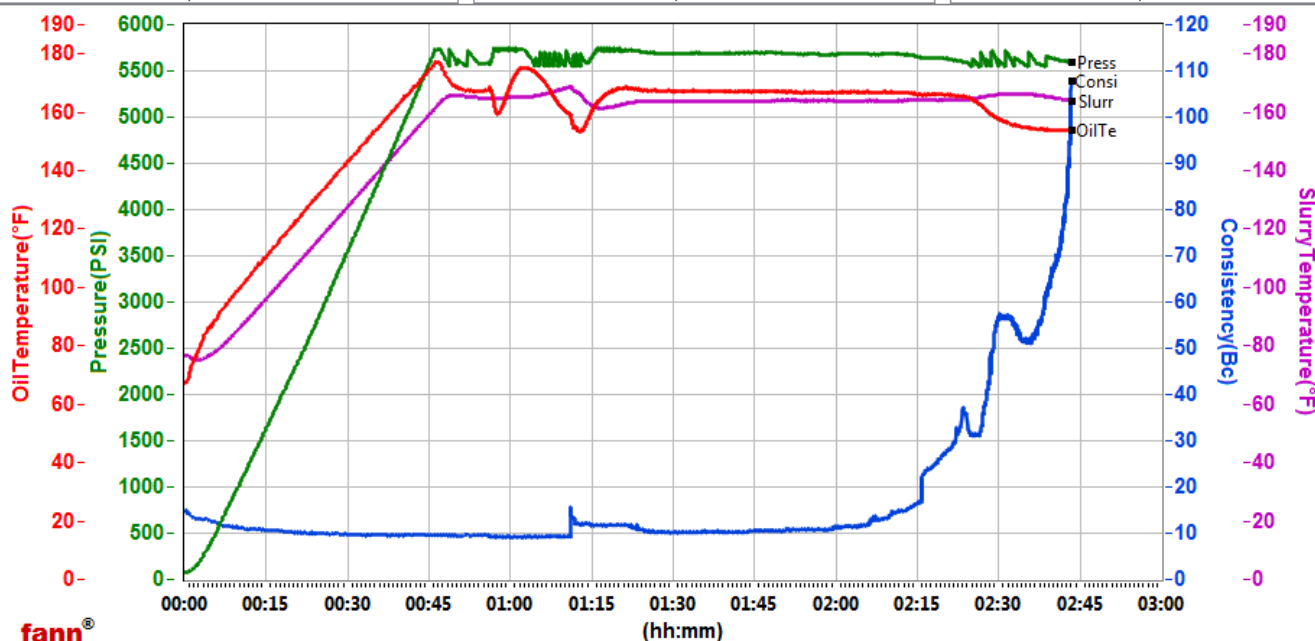
CS0327 TR#8678 350 SKS

CS0328 TR#1283 100 SKS

deflected from 8Bc--- > 26Bc--- > 12Bc within one minute

Grand Junction

Fields	Values	Fields	Values	Events	Results
Project Name	TempTest	Rig	H&P271	30Bc	2:21
SW Version	1.0	Casing/Liner Size	4.5 INCH	50Bc	2:29
Test ID	36306260-TT	Job Type	PRODUCTION CASING	70Bc	2:41
Request ID	2541047-1	Cement Weight	GCC TYPE I-II	100Bc	2:43
Tested by	DEBA	Comments	Light Weight		
Customer	TERRA ENERGY PARTN	Date Time	3/13/2019 10:06:53.598		
Well No	TR 543-22-597	Temp. Units	degF		



Data File C:\Users\hx25273\Desktop\HPHT Graphs\GJ2541047-1 TERRA PRODUCTION BULKTAIL tdms.tdms

Comments Light Weight

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