

HALLIBURTON

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TERRA ENERGY PARTNERS-EBUS

United States of America, COLORADO

Date: Saturday, December 08, 2018

CLOUGH NR 14-3 Production

Terra CLOUGH NR 14-3 - PRODUCTION

Job Date: Saturday, December 08, 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	DS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	12/7/2018	20:30:00	USER					CREW CALLED OUT TO H&P 318 FOR TEP PRODUCTION JOB. REQUESTED ON LOCATION AT 02:00.
Event	2	Pre-Convoy Safety Meeting	12/7/2018	23:15:00	USER					WITH ALL HES PERSONNEL
Event	3	Crew Leave Yard	12/7/2018	23:30:00	USER					
Event	4	Arrive at Location	12/8/2018	01:00:00	USER					RIG WAS RUNNING CASING UPON HES ARRIVAL
Event	5	Assessment of Location Safety Meeting	12/8/2018	01:05:00	USER					WITH ALL HES PERSONNEL
Event	6	Spot Equipment	12/8/2018	01:10:00	USER					SPOT EQUIPMENT
Event	7	Pre-Rig Up Safety Meeting	12/8/2018	01:20:00	USER					WITH ALL HES PERSONNEL
Event	8	Rig-Up Equipment	12/8/2018	01:30:00	USER					1-RCM ELITE PUMP TRUCK, 1-1,700 FT3 SILO, 1-1,200 FT3 SILO, 1-660 FT3 BULK TRUCK, 1-PICKUP.
Event	9	Rig-Up Completed	12/8/2018	02:30:00	USER					RIG UP COMPLETED. WAIT FOR RIG TO FINISH RUNNING CASING.
Event	10	Pre-Job Safety Meeting	12/8/2018	06:30:00	USER	154.00	-0.01	0.00	0.00	WITH ALL PERSONNEL ON LOCATION
Event	11	Comment	12/8/2018	06:55:00	USER	153.00	8.30	0.00	24.10	PRESSURIZED MUD SCALES CALIBRATED ON WATER PRIOR TO JOB. ALL FLUID DENSITIES VERIFIED USING PRESSURIZED MUD SCALES DURING JOB.
Event	12	Start Job	12/8/2018	06:56:00	USER	154.00	8.30	0.00	24.10	

Event	13	Pump Water	12/8/2018	06:58:00	USER	99.00	8.35	0.00	0.00	PUMP 2 BBL H2O AHEAD TO PRIME LINES. PUMPED WITH 6X5 PUMP 50 PSI
Event	14	Shutdown	12/8/2018	06:59:24	USER	97.00	8.34	0.00	0.00	SHUTDOWN TO LINE OUT VALVES ON MANIFOLD FOR PRESSURE TEST
Event	15	Pressure Test	12/8/2018	07:02:25	USER	6673.00	8.40	0.00	0.00	SET KICKOUTS TO 500 PSI FOR LOW TEST TO ENSURE KICKOUTS ARE FUNCTIONING PROPERLY. BROUGHT PRESSURE UP TO 6,700 PSI FOR HIGH TEST.
Event	16	Pump H2O Spacer	12/8/2018	07:06:00	USER	42.00	8.25	0.00	0.00	PUMP 20 BBL FRESH WATER SPACER. PUMPED AT 4 BPM WITH 120 PSI
Event	17	Pump Mud Flush III Spacer	12/8/2018	07:14:34	USER	117.00	8.25	4.00	0.70	PUMP 20 BBL MUD FLUSH III SPACER. PUMPED AT 4 BPM WITH 135 PSI. USED 80 LBS MUD FLUSH III FOR SPACER.
Event	18	Pump Lead Cement	12/8/2018	07:19:53	USER	267.00	12.63	4.00	22.00	PUMP 217.5 BBLNEOCER GJ3 LEAD CEMENT. 660 SKS AT 12.7 PPG, 1.85 FT3/SK, 8.94 GAL/SK. PUMPED AT 8 BPM WITH 850 PSI.
Event	19	Pump Tail Cement	12/8/2018	07:55:27	USER	610.00	14.02	6.60	258.30	PUMP 224 BBL THERMACER GJ3 TAIL CEMENT. 740 SKS AT 14.2 PPG, 1.7 FT3/SK, 7.53 GAL/SK. PUMPED AT 8 BPM WITH 900 PSI
Event	20	Shutdown	12/8/2018	08:31:39	USER	407.00	14.27	5.10	268.50	SHUTDOWN TO DROP TOP PLUG.
Event	21	Clean Lines	12/8/2018	08:35:13	USER	-7.00	10.91	0.00	0.00	WASH PUMPS AND LINES TO PIT.
Event	22	Drop Top Plug	12/8/2018	08:38:33	USER	22.00	8.41	0.00	0.00	DROP HES TOP PLUG. PLUG LAUNCHED. WITNESSED BY CUSTOMER REP.
Event	23	Pump Displacement	12/8/2018	08:39:30	USER	15.00	8.39	0.00	0.00	PUMP 145.1 BBL KCL H2O DISPLACEMENT AT 10 BPM WITH 2,850 PSI. USED 1 GALLON MMCR IN FIRST 10 BBL. USED 3 LBS BE-6 IN FIRST 30 BBL.
Event	24	Slow Rate	12/8/2018	08:55:28	USER	2843.00	8.47	9.60	157.40	SLOW RATE TO 4 BPM 10 BBL PRIOR TO CALCULATED DISPLACEMENT TO BUMP PLUG.
Event	25	Bump Plug	12/8/2018	08:56:49	USER	2412.00	8.44	3.90	163.50	PLUG BUMPED AT 4 BPM. FCP-2,250 PSI. BROUGHT PRESSURE UP TO 3,400 PSI. TOTAL DISPLACEMENT-155.1 BBL.
Event	26	Check Floats	12/8/2018	09:01:00	USER	2075.00	8.42	0.00	0.00	FLOATS HOLDING. RETURNED 2 BBL FLUID TO TRUCK

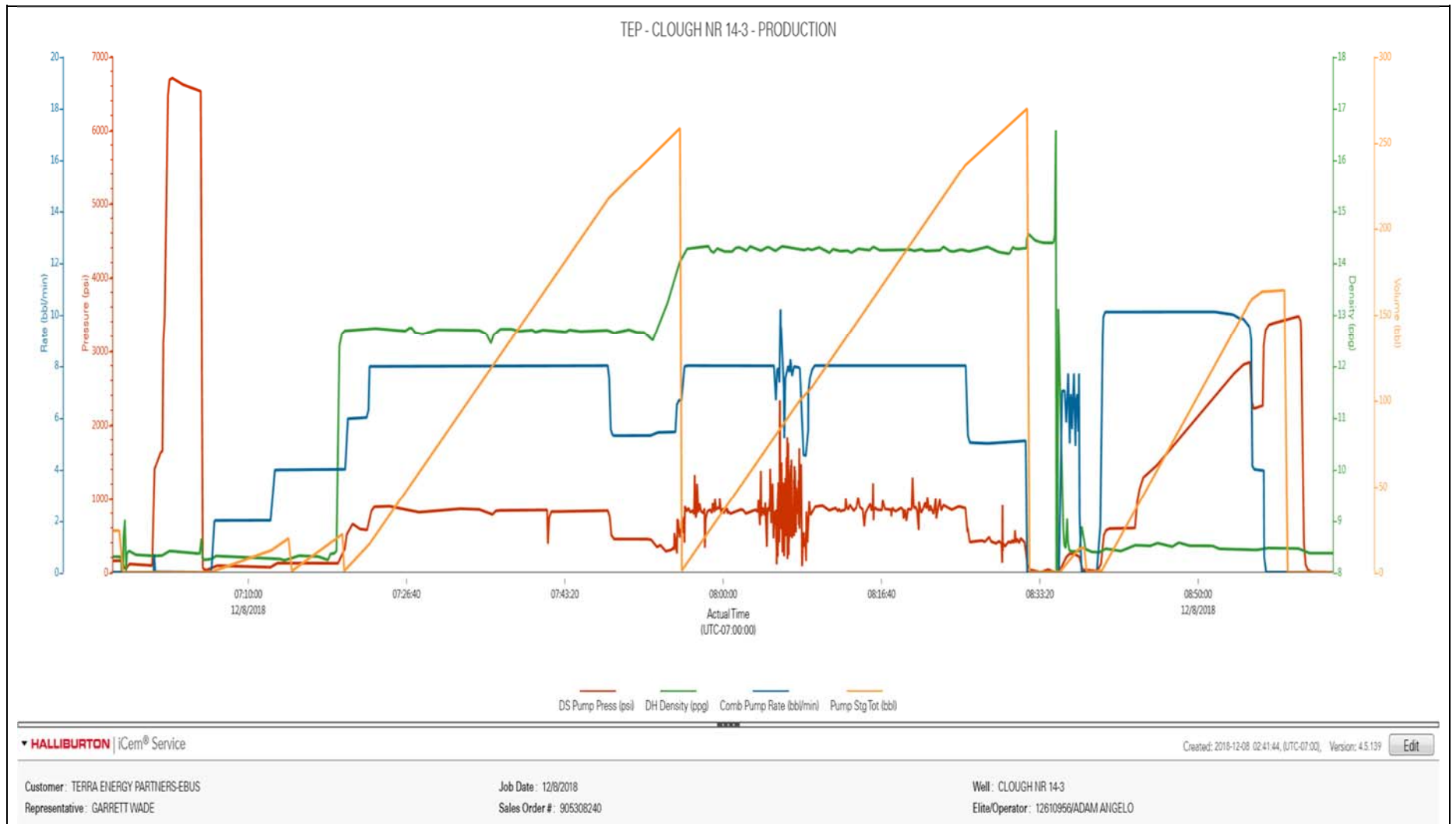
Event	27	End Job	12/8/2018	09:03:00	USER	-3.00	8.36	0.00	0.00	PIPE WAS RECIPROCATED WHILE PUMPING CEMENT AND STATIC WHILE PUMPING DISPLACEMENT. GOOD CIRCULATION THROUGHOUT JOB.
Event	28	Pre-Rig Down Safety Meeting	12/8/2018	09:05:00	USER	0.00	8.37	0.00	0.00	WITH ALL HES PERSONNEL
Event	29	Rig-Down Equipment	12/8/2018	09:10:00	USER	-10.00	0.09	0.00	0.00	
Event	30	Rig-Down Completed	12/8/2018	09:50:00	USER					
Event	31	Pre-Convoy Safety Meeting	12/8/2018	09:55:00	USER					WITH ALL HES PERSONNEL
Event	32	Crew Leave Location	12/8/2018	10:00:00	USER					
Event	33	Well Info	12/8/2018	10:01:00	USER					TD-10,046', TP-10,039.37' SET AT 10,036', SHOE-32.15', HOLE 8 3/4", MUD-11.2 PPG WBM PV-12 YP-14, CSG-4 1/2" 11.6 LB/FT P-110, PREV CSG SET AT 1,109' 9 5/8" 36 LB/FT, DEVIATED 15 DEGREES
Event	34	Rig Info	12/8/2018	10:02:00	USER					RIG ON BOTTOM AT 05:15, CIRCULATED AT 11 BPM WITH 1,200 PSI. PIPE WAS RECIPROCATED DURING RIG CIRCULATION. CIRCULATED 896 BBL. NO LOSSES. GAS-95 UNITS
Event	35	Job Info	12/8/2018	10:03:00	USER					ESTIMATED TOP OF TAIL CEMENT-5,950', ESTIMATED TOP OF LEAD CEMENT-1,974'. USED 1 GALLON MMCR AND 3 LBS BE-6 FOR JOB. TOP PLUG WAS USED FOR JOB.
Event	36	Comment	12/8/2018	10:04:00	USER					THANK YOU FOR USING HALLIBURTON CEMENT DEPARTMENT. JEREMY YOUNG AND CREW.

2.0 Attachments

2.1 TEP - CLOUGH NR 14-3 - PRODUCTION-WITH EVENTS.png



2.2 TEP - CLOUGH NR 14-3 - PRODUCTION-WITHOUT EVENTS.png



Job Information

Request/Slurry	2517910/1	Rig Name	H&P 318	Date	27/NOV/2018
Submitted By	Lukas Van Zyl	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	NR 14-3

Well Information

Casing/Liner Size	4.5 in	Depth MD	10157 ft	BHST	121°C / 249°F
Hole Size	8.75 in	Depth TVD	9934 ft	BHCT	82°C / 179°F
Pressure	6204 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>MP</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	Cement Properties		
							Slurry Density	12.7	lbm/gal
							Slurry Yield	1.85	ft3/sack
							Water Requirement	8.95	gal/sack
							Total Mix Fluid	8.95	gal/sack
							Water Source	Fresh Water	
							Water Chloride		

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Operation Test Results Request ID 2517910/1

Thickening Time - ON-OFF-ON, Request Test ID:36016428

04/DEC/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	6204	58	3:41	4:14	4:21	4:21	10	68	15	10

Total Sks = 660

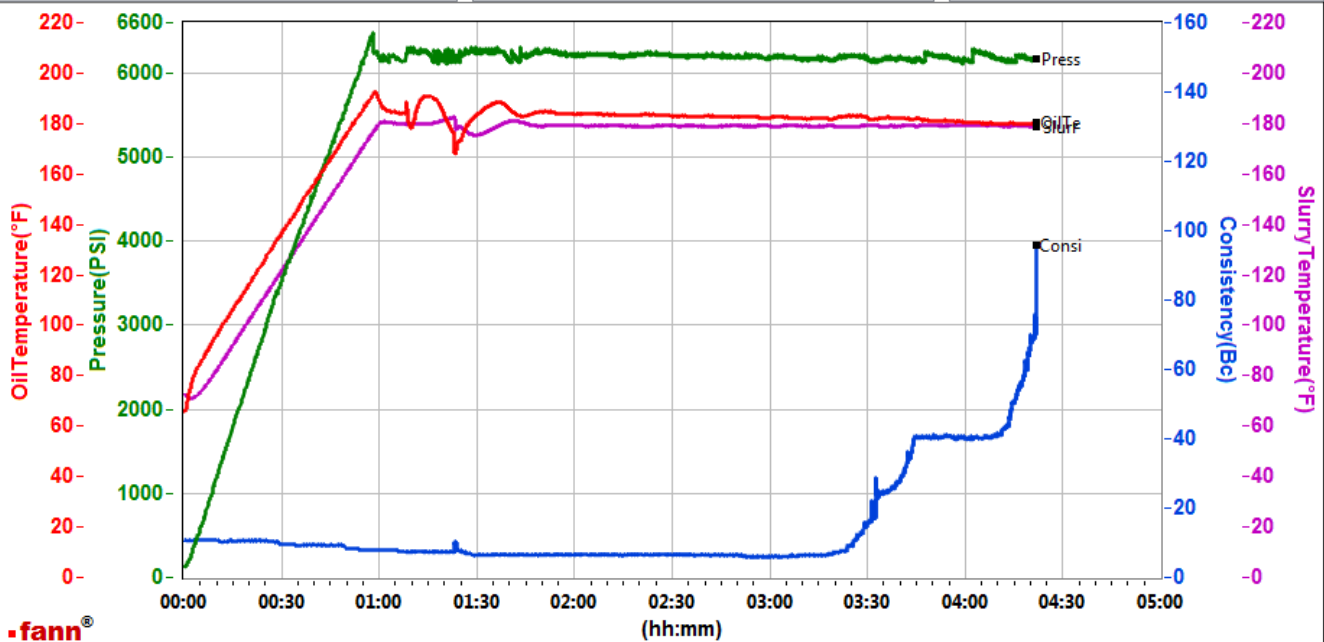
CS2551 TR#6813 330 SKS

CS2552 TR#4053 330 SKS

Deflection: 7 - 10

GRAND JUNCTION

Fields	Values	Fields	Values	Events	Results
Project Name	2511791-1 H&P 318 Terr	Rig	H&P 318	30 BC	3:41
SW Version	1.0	Casing/Liner Size	4.5 INCH	50 BC	4:14
Test ID	36016428 - TT	Job Type	PRODUCTION CASING	70 BC	4:21
Request ID	2517910-1	Cement Weight	GCC TYPE I-II	100 BC	4:21
Tested by	DEBA	Comments	Light Weight		
Customer	TERRA ENERGY PARTN	Date Time	12/4/2018 07:20:24.603		
Well No	NR 14-3	Temp. Units	degF		



Data File C:\Users\H185329\Desktop\000 Graphs\GJ2517910-1 TERRA PRODUCTION BULK LEAD.tdms

Comments Light Weight

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Rockies, Grand Junction

Lab Results- Tail

Job Information

Request/Slurry	2517911/1	Rig Name	H&P 318	Date	27/NOV/2018
Submitted By	Lukas Van Zyl	Job Type	Production Casing	Bulk Plant	Grand Junction
Customer	Terra Energy Partners	Location	Garfield	Well	NR 14-3

Well Information

Casing/Liner Size	4.5 in	Depth MD	10157 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>MP</u>	<u>Sample Type</u>	<u>Sample Date</u>	<u>Lot No.</u>	Cement Properties		
							Slurry Density	14.2	lbm/gal
							Slurry Yield	1.7	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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Operation Test Results Request ID 2517911/1

Thickening Time - ON-OFF-ON, Request Test ID:36016430

03/DEC/2018

Test Temp (degF)	Pressure (psi)	Reached in (min)	70 Bc (hh:mm)	100 Bc (hh:mm)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (BC)
179	6254	58	2:21	2:23	12	68	15	26

Total sks = 740

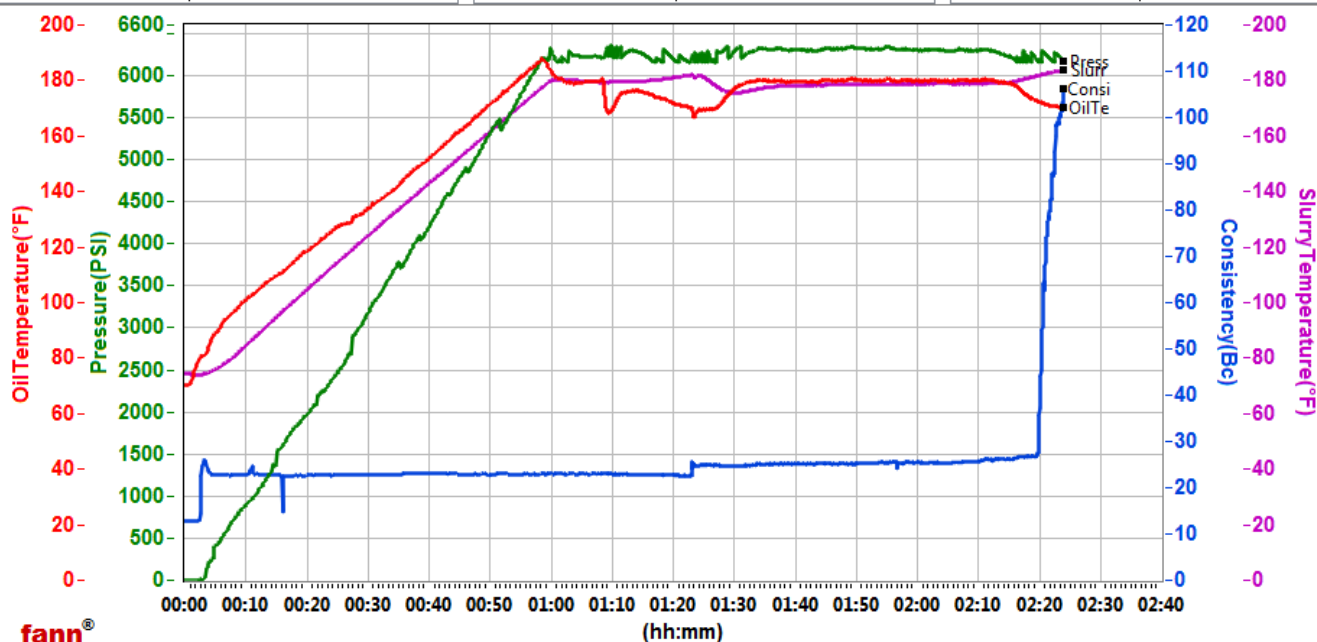
CS2549 TR# 1513 370 SKS

CS2550 TR#2878 370 sks

deflected from 22Bc--- > 26Bc

GRAND JUNCTION

Fields	Values	Fields	Values	Events	Results
Project Name	TempTest	Rig	H&P318		
SW Version	1.0	Casing/Liner Size	4.5INCHES		
Test ID	36016430 - TT	Job Type	PRODUCTION CASING		
Request ID	2517911-1	Cement Weight	MOUNTAIN G		
Tested by	DEBA	Comments	Standard		
Customer	TERRA ENERGY PARTN	Date Time	12/3/2018 11:23:47.608		
Well No	NR 14-3	Temp. Units	degF		



Data File C:\Users\hx25273\Desktop\HPHT Graphs\GJ2517911-1 TERRA PRODUCTION BULK TAIL.tdms

Comments Standard

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