

HALLIBURTON

iCem[®] Service

ANADARKO PETROLEUM CORP - EBUS

For: Toby Yates

Date: Friday, June 20, 2014

6N-29 HZ

Case 1

Sincerely,

Mark Dean & Crew

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1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Howard 6N-29HZ** cement **Surface** casing job. A pre-job safety meeting was held before the job where details of the job were discussed, potential safety hazards were reviewed, and environmental compliance procedures were outlined.

Halliburton maintains a continuous quality improvement process and appreciates any comments or suggestions that you may have. Halliburton again thanks you for the opportunity to perform service work on this well. We hope to be your solutions provider for future projects.

Respectfully,

Halliburton [Brighton]

Job Times

	Date	Time	Time Zone
Called Out	6/19/2014	10:00:48	MT
On Location	6/19/2014	15:00:50	MT
Job Started	6/19/2014	17:26:19	MT
Job Completed	6/19/2014	22:08:35	MT
Departed Location	6/20/2014	03:00:24	MT

1.2 Cementing Job Summary

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Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 300466		Ship To #: 3117329		Quote #:		Sales Order #: 0901433737				
Customer: ANADARKO PETROLEUM CORP - EBUS				Customer Rep: Toby Yates						
Well Name: HOWARD		Well #: 6N-29 HZ		API/UWI #: 05-123-37863-00						
Field: WATTENBERG		City (SAP): LOCHBUIE		County/Parish: WELD		State: COLORADO				
Legal Description: SE NW-32-1N-67W-2439FNL-1805FWL										
Contractor:				Rig/Platform Name/Num: Majors 29						
Job BOM: 7521										
Well Type: HORIZONTAL GAS										
Sales Person: HALAMERICA\HB47901				Srvc Supervisor: Mark Dean						
Job										
Formation Name										
Formation Depth (MD)		Top			Bottom					
Form Type				BHST						
Job depth MD		982ft		Job Depth TVD						
Water Depth				Wk Ht Above Floor		4 ft				
Perforation Depth (MD)		From			To					
Well Data										
Description	New / Used	Size in	ID in	Weight lbm/ft	Thread	Grade	Top MD ft	Bottom MD ft	Top TVD ft	Bottom TVD ft
Casing		9.625	8.921	36		J-55	0	982		
Open Hole Section			13.5				0	992		
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make		
Guide Shoe	9.625	1		982	Top Plug	9.625	1	HES		
Float Shoe	9.625	1			Bottom Plug	9.625		HES		
Float Collar	9.625	1		940	SSR plug set	9.625	1	HES		
Insert Float	9.625	1			Plug Container	9.625	1	HES		
Stage Tool	9.625	1			Centralizers	9.625	1	HES		
Miscellaneous Materials										
Gelling Agt		Conc		Surfactant		Conc		Acid Type		Qty
Treatment Fld		Conc		Inhibitor		Conc		Sand Type		Size
Fluid Data										
Stage/Plug #: 1										
Fluid #	Stage Type	Fluid Name		Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
1	Mud Flush III (Powder)	Mud Flush III		12	bbl	8.4				
42 gal/bbl		FRESH WATER								

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
2	Lead Cement	SWIFTCEM (TM) SYSTEM	371	sack	14.2	1.54		6	7.64

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
3	Displacement	Displacement	72	bbl	8.33				

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
4	Top Out	HALCEM (TM) SYSTEM	85	sack	15.8	1.16		2	4.99
4.99 Gal		FRESH WATER							

Cement Left in Pipe	Amount	42 ft	Reason	Shoe Joint
Comment				

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Summary Report

Crew:

Job Start Date: 6/20/2014

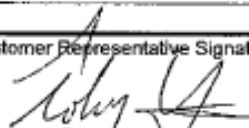
Sales Order #: 0901433737

WO #: 0901433737

PO/AFE #: NA

Customer: ANADARKO PETROLEUM CORP - Field: WATTENBERG
 EBUS
 UWI / API Number: 05-123-37863-00
 Well Name: HOWARD
 Well No: 6N-29 HZ
 County/Parish: WELD
 State: COLORADO
 Latitude: 40.008207
 Longitude: -104.917277
 Sect / Twn / Rng: 32/1/67

Job Type: CMT SURFACE
 CASING BOM
 Service Supervisor: Mark Dean
 Cust Rep Name: Toby Yates
 Cust Rep Phone #:

Remarks:		
The Information Stated Herein Is Correct	Customer Representative Signature 	Date
	Customer Representative Printed Name	

1.3 Planned Pumping Schedule

Stage /Plug #	Fluid #	Fluid Type	Fluid Name	Surface Density lbm/gal	Avg Rate bbl/min	Surface Volume	Downhole Volume
1	1	Spacer	Fresh Water Spacer	8.33	2.0	10.0 bbl	10.0 bbl
1	1	Spacer	Mud Flush	8.40	2.0	12.0 bbl	12.0 bbl
1	1	Spacer	Fresh Water Spacer	8.33	3.0	10.0 bbl	10.0 bbl
1	2	Cement Slurry	SwiftCem B2	14.2	5.5	371.0 sacks	371.0 sacks

1.4 Job Overview

		Units	Description
1	Surface temperature at time of job	°F	
2	Mud type (OBM, WBM, SBM, Water, Brine)	-	WBM
3	Actual mud density	lb/gal	
4	Time circulated before job	HH:MM	
5	Mud volume circulated	Bbls	
6	Rate at which well was circulated	Bpm	
7	Pipe movement during hole circulation	Y/N	N
8	Rig pressure while circulating	Psi	
9	Time from end mud circulation to start of job	HH:MM	
10	Pipe movement during cementing	Y/N	
11	Calculated displacement	Bbls	101
12	Job displaced by	Rig/HES	HES
13	Annular before job)?	Y/N	N
14	Annular flow after job	Y/N	N
15	Length of rat hole	Ft	
16	Units of gas detected while circulating	Units	
17	Was lost circulation experienced at any time ?	Y/N	N

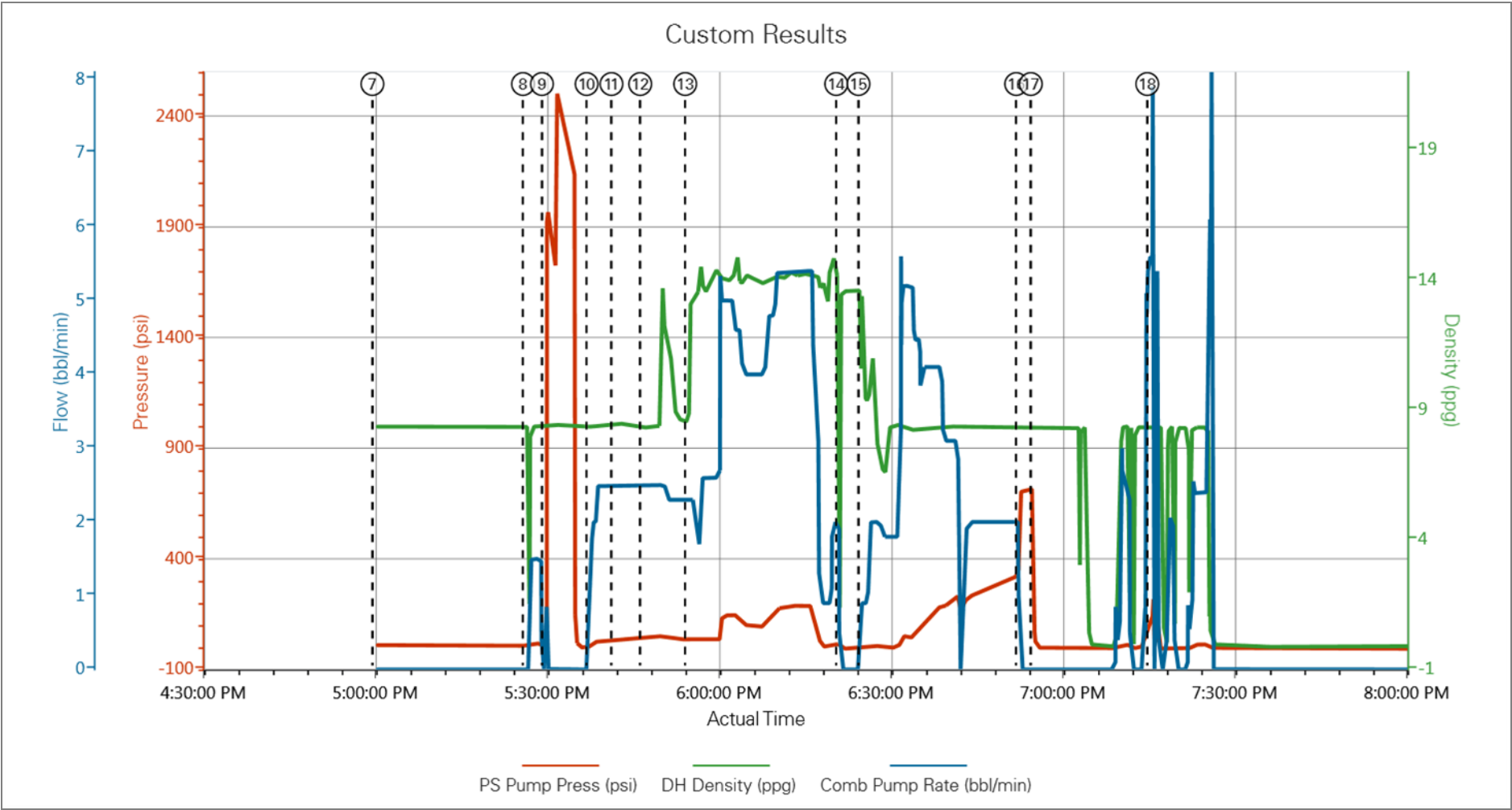
1.5 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Pass-Side Pump Pressure (psi)	Downhole Density (ppg)	Combined Pump Rate (bbl/min)	Comment
Event	1	Call Out	Call Out	6/19/2014	10:00:48	USER				Crew called at 10:00 am
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	6/19/2014	14:00:05	USER				Discussed load checks planned routes and safe driving
Event	3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	6/19/2014	14:15:36	USER				Departed yard in convoy
Event	4	Arrive At Loc	Arrive At Loc	6/19/2014	15:00:50	USER				Req on location at 15:00
Event	5	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	6/19/2014	15:05:01	USER				Discussed spotting using proper spotters and layout of trucks
Event	6	Rig-Up Equipment	Rig-Up Equipment	6/19/2014	15:30:30	USER				Discussed using proper PPE layout of iron and red zones
Event	7	Pre-Job Safety Meeting	Pre-Job Safety Meeting	6/19/2014	17:00:03	USER	10.00	8.38	0.00	Discussed job procedure with customer and crew
Event	8	Start Job	Start Job	6/19/2014	17:26:19	COM1	1.00	8.35	0.00	Primed pump & lines
Event	9	Test Lines	Test Lines	6/19/2014	17:29:38	COM1	3.00	8.35	0.00	Tested lines to 2000 psi (Pressure Held)
Event	10	Pump Spacer 1	Pump Water	6/19/2014	17:37:26	COM1	6.00	8.39	1.30	Pumped 10 fresh ahead
Event	11	Pump Spacer 2	Pump Mud Flush	6/19/2014	17:41:46	COM1	37.00	8.38	2.50	Pumped 12 bbl of mud flush III
Event	12	Pump Spacer 1	Pump Water	6/19/2014	17:46:47	COM1	31.00	8.14	2.50	Pumped 10 water behind
Event	13	Pump Cement	Pump Cement	6/19/2014	17:54:38	COM1	37.00	9.90	2.30	Pumped 101 bbl (14.2 # cement 371sks)
Event	14	Shutdown	Shutdown	6/19/2014	18:20:59	COM1	2.00	9.26	0.00	Shut down to drop top plug
Event	15	Pump Displacement	Pump Displacement	6/19/2014	18:24:52	COM1	2.00	12.67	0.90	Pumped 72bbl fresh water displacement
Event	16	Bump Plug	Bump Plug	6/19/2014	18:52:23	COM1	689.00	8.31	0.00	Bumped plug at 300psi (500 over)
Event	17	Check Floats	Check Floats	6/19/2014	18:54:57	USER	51.00	8.33	0.00	.5 bbl back to truck (Floats held)

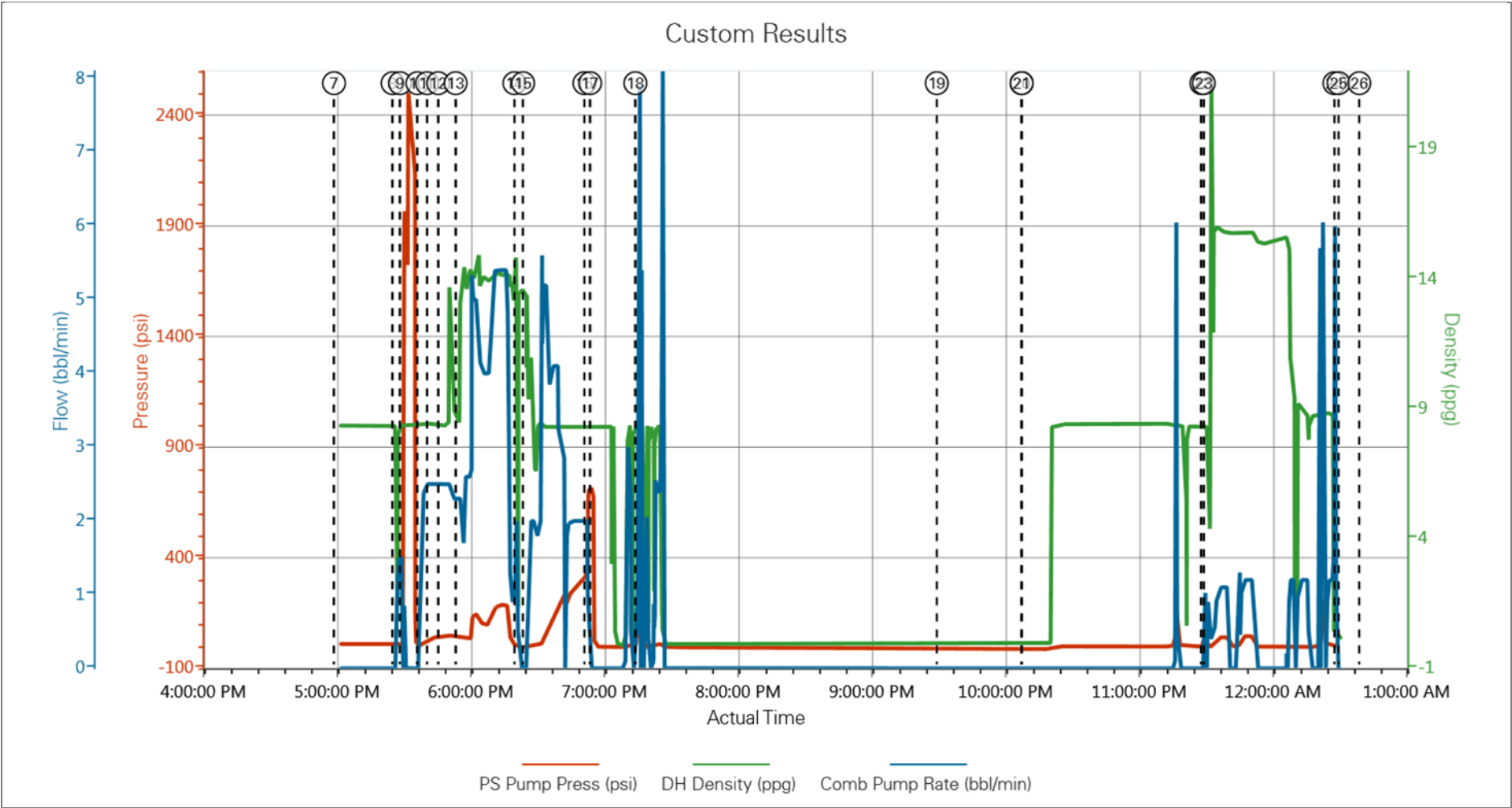
Event	18	Wait on HES Materials to Arrive - Start Time	Wait on HES Materials to Arrive - Start Time	6/19/2014	19:15:16	USER	121.00	8.27	5.60	No cement to surface customer required 100 additional sks for topout
Event	19	Wait on HES Materials to Arrive - End Time	Wait on HES Materials to Arrive - End Time	6/19/2014	21:30:32	USER				Topout truck arrived waiting on rig move to run 1" pipe
Event	20	End Job	End Job	6/19/2014	22:08:35	COM1	-12.00	-0.06	0.00	No cement to surface topout required
Event	21	Start Job	Start Job	6/19/2014	22:08:38	COM1	-12.00	-0.06	0.00	Primed pumps
Event	22	Pump Spacer 1	Establish circulation	6/19/2014	23:29:14	COM1	14.00	8.19	1.00	Filled lines to establish circulation
Event	23	Pump Lead Cement	Pump Topout Cement	6/19/2014	23:30:18	COM1	-3.00	8.33	0.00	17.5 bbl of topout cement at 15.8# (85 sks)
Event	24	End Job	End Job	6/20/2014	00:28:57	COM1	-1.00	0.22	0.00	8bbl of topout cement to surface
Event	25	Post-Job Safety Meeting (Pre Rig-Down)	Post-Job Safety Meeting (Pre Rig-Down)	6/20/2014	00:30:50	USER				Discussed trapped pressure
Event	26	Rig-Down Equipment	Rig-Down Equipment	6/20/2014	00:40:07	USER				Rig- Down safely
Event	27	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	6/20/2014	03:00:24	USER				Job completed sucessfully by M. Dean and crew

2.0 Custom Graphs

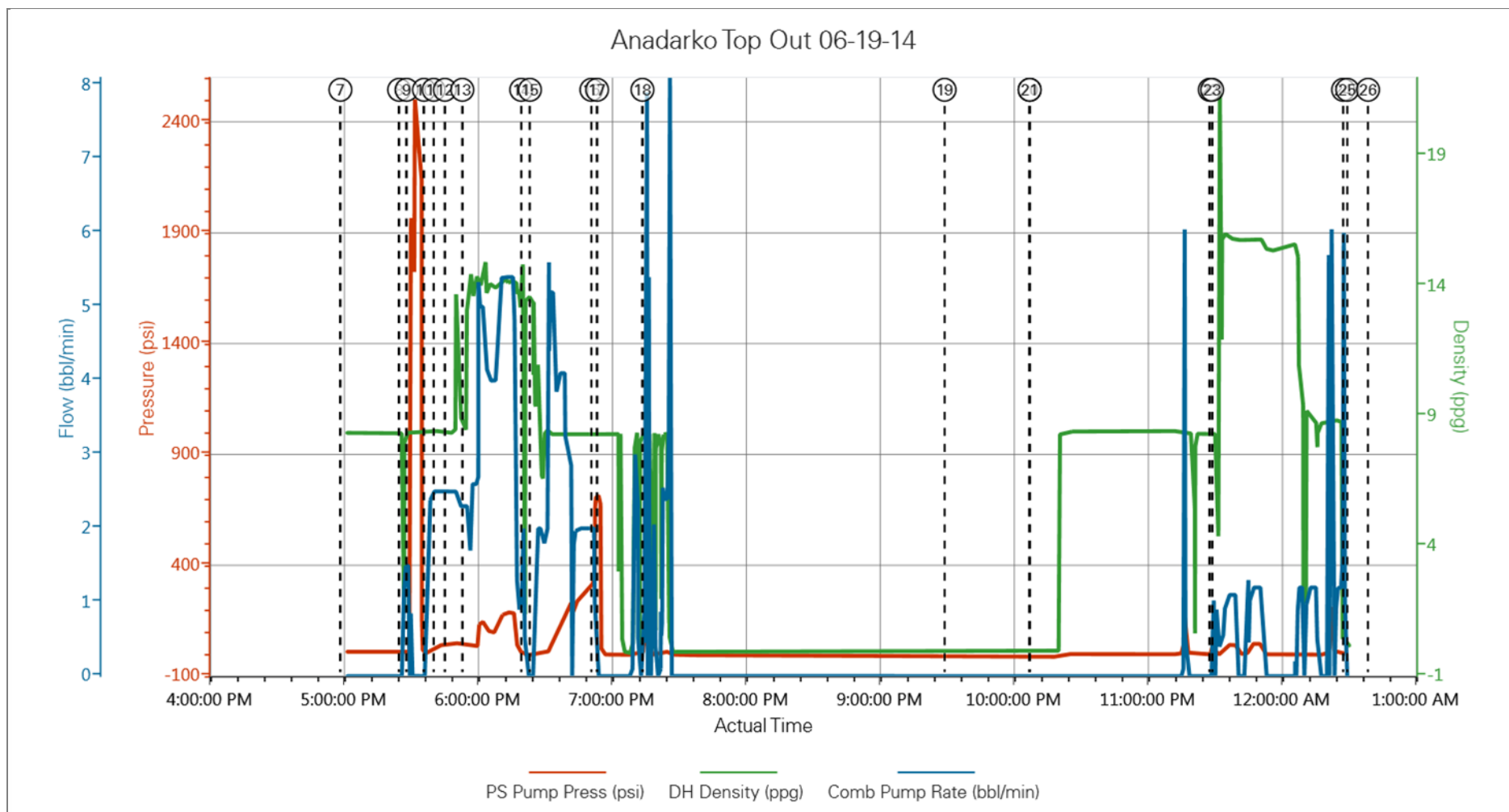
2.1 Custom Graph



2.2 Custom Graph



2.3 Custom Graph



3.0 Appendix

Insert Planned Pump Schedule from Proposal or actual Job Procedure built for job