

# HALLIBURTON

iCem<sup>®</sup> Service

## **PETROSTAR SERVICES**

Ft. Lupton District, Colorado

### **For: Aaron Smith**

Date: Monday, September 16, 2019

### **Krause**

Weld, Wattenberg

Case 1

Job Date: Monday, September 16, 2019

Sincerely,

**Jamar Horton**

## Legal Notice

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### Disclaimer:

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## 1.0 Cementing Job Summary

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### 1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the cement 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.

**Approximately XX bbls of cement were returned to surface.**

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 Fort Lupton**

### 1.2 Squeeze Job Information

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		Units	Description
1	Was the well full prior to cementing?	Y/N	
2	Injection Rate #1 & Pressure	psi/bpm	
3	Injection Rate #2 & Pressure	psi/bpm	
4	Injection Rate #3 & Pressure	psi/bpm	
5	Initial ISIP	psi	
6	Density of fluid used for Initial ISIP	lb/gal	
7	Final ISIP	psi	
8	Density of displacement fluid	lb/gal	

### 1.3 Plug Job Information

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		Units	Description
1	Density of well fluid exiting well prior to job	lb/gal	
2	Density of well fluid entering well prior to job	lb/gal	
3	Was the well full prior to cementing?	Y/N	
4	How many joints of workstring pulled wet?	# Joints	
5	Depth of workstring for circulation after the plug?	ft	
6	Calculated Plug Height (workstring out)	ft	

## 2.0 Real-Time Job Summary

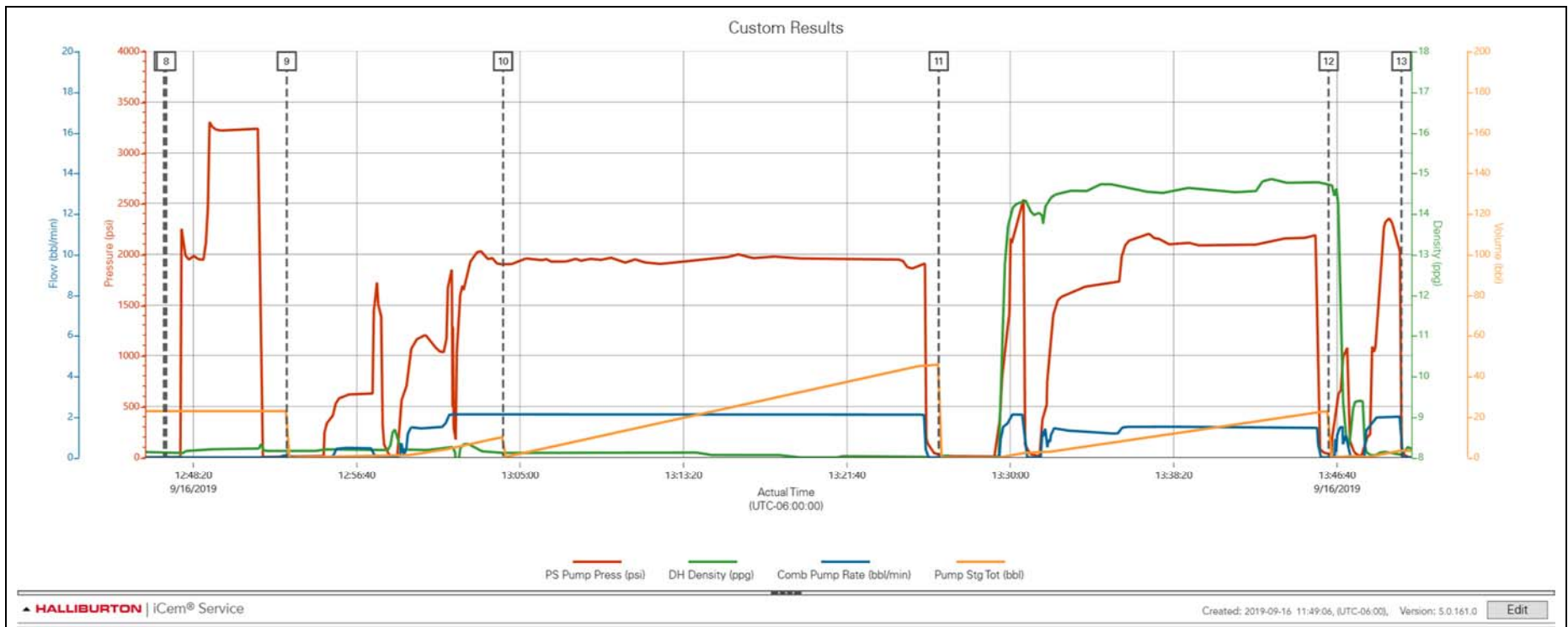
### 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	PS Pump Press <i>(psi)</i>	DH Density <i>(ppg)</i>	Comb Pump Rate <i>(bbl/min)</i>	Pump Stg Tot <i>(bbl)</i>	Comments
Event	1	Depart from Service Center or Other Site	Depart from Service Center or Other Site	9/16/2019	06:30:00	USER					Journey Management meeting held prior to departure. journey called into dispatch and approved.
Event	2	Arrive at Location from Service Center	Arrive at Location from Service Center	9/16/2019	10:00:00	USER					With all Equipment and materials. Hazard hunt performed before spotting in equipment. discussed numbers and job procedures with customer.
Event	3	Comment	Comment	9/16/2019	10:05:00	USER					1.5" coil tubing, Csg 4 1/2" 11.6# perfs @ 2500' and 2200' 9" OH, CICR @ 2400' TOC 2193'.
Event	4	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	9/16/2019	10:10:00	USER					JSA with all essential personnel to discuss the hazards of rigging up .
Event	5	Rig-Up Completed	Rig-Up Completed	9/16/2019	11:00:00	USER					Safely with no injuries.
Event	6	Pre-Job Safety Meeting	Pre-Job Safety Meeting	9/16/2019	12:15:00	USER	2510.00	8.30	0.00	2.80	JSA with all essential personnel to discuss the job procedures and the hazards of the job.
Event	7	Start Job	Start Job	9/16/2019	12:46:50	COM4	2.00	8.14	0.00	22.70	Start recording data.
Event	8	Test Lines	Test Lines	9/16/2019	12:46:57	COM4	3.00	8.14	0.00	22.70	To 3000psi.
Event	9	Pump Spacer 1	Pump Spacer 1	9/16/2019	12:53:06	COM4	10.00	8.16	0.10	0.00	10bbbls of mud flush.
Event	10	Pump Spacer 2	Pump Spacer 2	9/16/2019	13:04:08	COM4	1903.00	8.11	2.10	0.00	45bbbls of fresh water.

Event	11	Pump Cement	Pump Cement	9/16/2019	13:26:21	COM4	23.00	8.00	0.00	45.50	91sk 22bbls 14.5ppg 1.39yd 6.78gal/sk verified with pressurized scales.
Event	12	Pump Displacement	Pump Displacement	9/16/2019	13:46:14	COM4	31.00	14.71	0.00	22.50	4.5bbls of fresh water.
Event	13	End Job	End Job	9/16/2019	13:49:57	COM4	75.00	8.12	0.00	3.40	Stop recording data.
Event	14	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	9/16/2019	14:20:00	USER					JSA with all essential personnel to discuss the hazards of rigging down.
Event	15	Rig-Down Completed	Rig-Down Completed	9/16/2019	14:50:00	USER					Safely with no injuries.
Event	16	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	9/16/2019	15:00:00	USER					Journey Management meeting held prior to departure. journey called into dispatch and approved.
Event	17	Comment	Comment	9/16/2019	15:05:00	USER					"" .....Thank You for choosing Halliburton.....""

## 3.0 Attachments

### 3.1 Case 1-Custom Results.png





# HALLIBURTON

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## **PETROSTAR SERVICES**

Ft. Lupton District, Colorado

### **For: Steve Record**

Date: Wednesday, September 18, 2019

### **Krause**

Weld, Wattenberg

Case 2

Job Date: Wednesday, September 18, 2019

Sincerely,

**Jamar Horton**

## Legal Notice

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    Case 1-Custom Results.png ..... **Error! Bookmark not defined.**

    Case 2-Custom Results.png ..... **Error! Bookmark not defined.**

## 1.0 Cementing Job Summary

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### 1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the cement 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.

**Approximately XX bbls of cement were returned to surface.**

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 Fort Lupton**

### 1.2 Squeeze Job Information

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		Units	Description
1	Was the well full prior to cementing?	Y/N	
2	Injection Rate #1 & Pressure	psi/bpm	
3	Injection Rate #2 & Pressure	psi/bpm	
4	Injection Rate #3 & Pressure	psi/bpm	
5	Initial ISIP	psi	
6	Density of fluid used for Initial ISIP	lb/gal	
7	Final ISIP	psi	
8	Density of displacement fluid	lb/gal	

### 1.3 Plug Job Information

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		Units	Description
1	Density of well fluid exiting well prior to job	lb/gal	
2	Density of well fluid entering well prior to job	lb/gal	
3	Was the well full prior to cementing?	Y/N	
4	How many joints of workstring pulled wet?	# Joints	
5	Depth of workstring for circulation after the plug?	ft	
6	Calculated Plug Height (workstring out)	ft	

## 2.0 Real-Time Job Summary

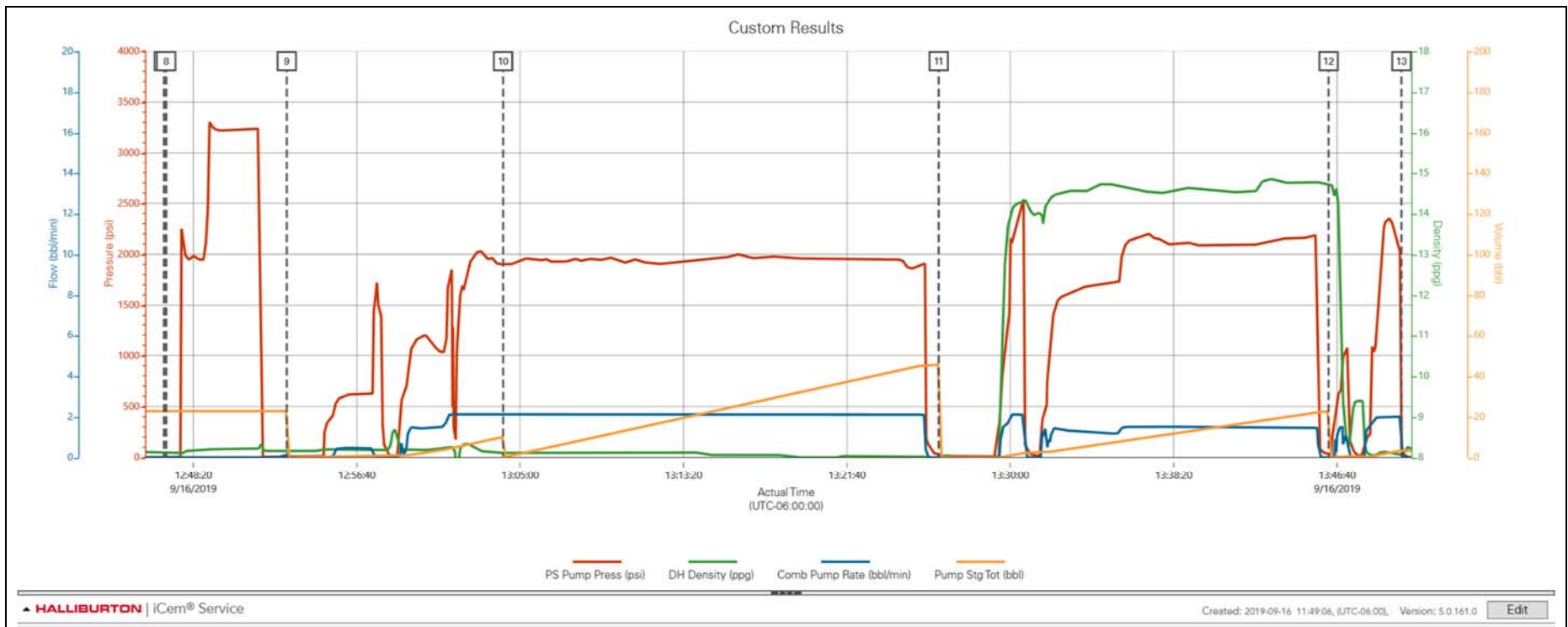
### 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	PS Pump Press <i>(psi)</i>	DH Density <i>(ppg)</i>	Comb Pump Rate <i>(bbl/min)</i>	Pump Stg Tot <i>(bbl)</i>	Comments
Event	1	Depart from Service Center or Other Site	Depart from Service Center or Other Site	9/18/2019	05:30:00	USER					Journey Management meeting held prior to departure. journey called into dispatch and approved.
Event	2	Arrive at Location from Service Center	Arrive at Location from Service Center	9/18/2019	06:30:00	USER					With all Equipment and materials. Hazard hunt performed before spotting in equipment. discussed numbers and job procedures with customer.
Event	3	Comment	Comment	9/18/2019	06:35:00	USER					Csg 4 1/2" 11.6# Cut @ 1183',9"OH, Estimated TOC 1011'. Water test: PH 7, Chloride less than 300.
Event	4	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	9/18/2019	06:40:00	USER					JSA with all essential personnel to discuss the hazards of rigging up .
Event	5	Rig-Up Completed	Rig-Up Completed	9/18/2019	07:10:00	USER					Safely with no injuries.
Event	6	Pre-Job Safety Meeting	Pre-Job Safety Meeting	9/18/2019	07:25:00	USER					JSA with all essential personnel to discuss the job procedures and the hazards of the job.
Event	7	Start Job	Start Job	9/18/2019	08:16:26	COM4	-6.00	8.85	0.00	8.90	Start recording data.
Event	8	Pump Spacer 1	Pump Spacer 1	9/18/2019	08:28:13	COM4	11.00	8.74	0.00	0.00	10bbls of mud flush.
Event	9	Pump Spacer 2	Pump Spacer 2	9/18/2019	08:36:00	COM4	132.00	8.73	1.90	0.00	5bbls of fresh water.

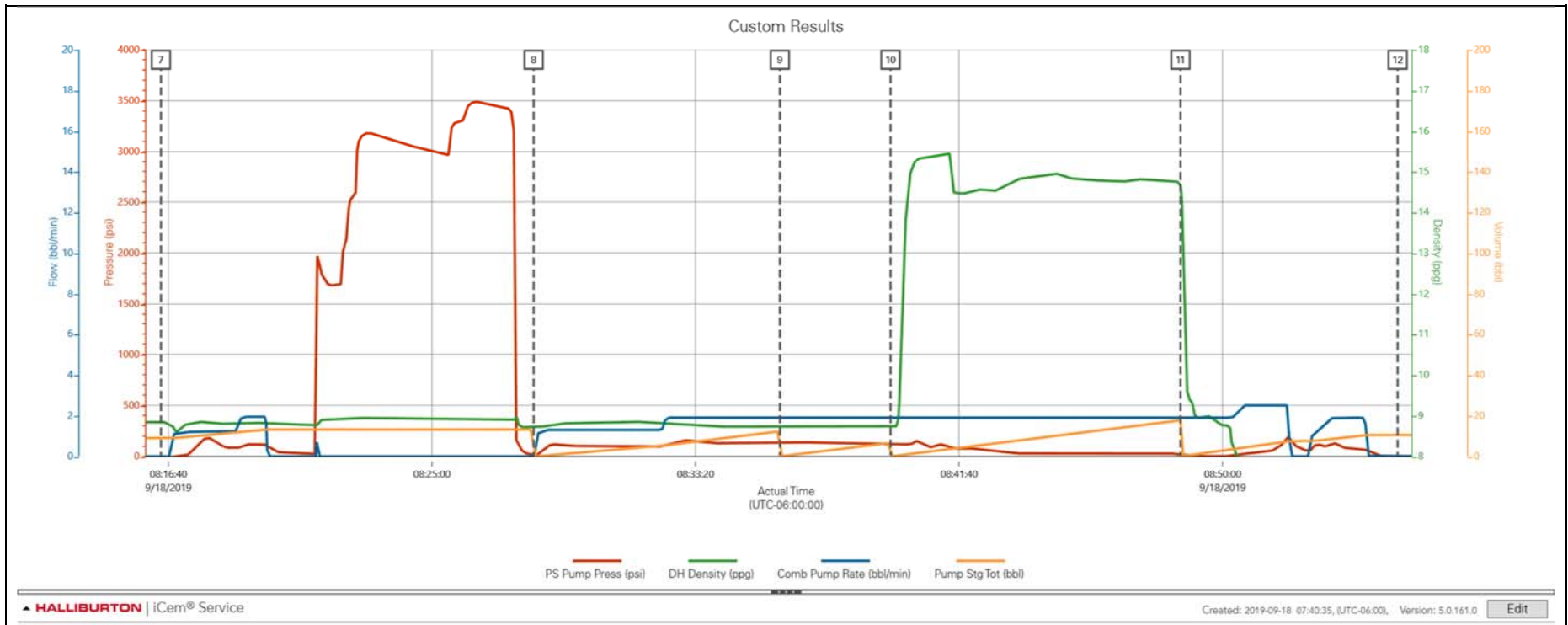
Event	10	Pump Cement	Pump Cement	9/18/2019	08:39:30	COM4	126.00	8.72	1.90	0.00	60sk 16bbbls 14.5ppg 1.51yd 7.53gal/sk verified with pressurized scales.
Event	11	Pump Displacement	Pump Displacement	9/18/2019	08:48:40	COM4	26.00	14.69	1.90	17.70	15.6bbbls to balance.
Event	12	End Job	End Job	9/18/2019	08:55:32	COM4	-2.00	6.72	0.00	10.50	Stopeording data.
Event	13	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	9/18/2019	09:15:00	USER					JSA with all essential personnel to discuss the hazards of rigging down.
Event	14	Rig-Down Completed	Rig-Down Completed	9/18/2019	10:00:00	USER					Safely with no injuries.
Event	15	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	9/18/2019	10:30:00	USER					Journey Management meeting held prior to departure. journey called into dispatch and approved.
Event	16	Comment	Comment	9/18/2019	10:35:00	USER					"" .....Thank You for choosing Halliburton.....""

## 3.0 Attachments

### 3.1 Case 1-Custom Results.png



3.2 Case 2-Custom Results.png





# HALLIBURTON

iCem<sup>®</sup> Service

## **PETROSTAR SERVICES-EBUS**

**For: Aaron Smith**

Date: Friday, September 20, 2019

**Krause 12-28**

KRAUSE 12-28

Job Date: Friday, September 20, 2019

Sincerely,

**Nick Roles and Crew**

## Legal Notice

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## 1.0 Real-Time Job Summary

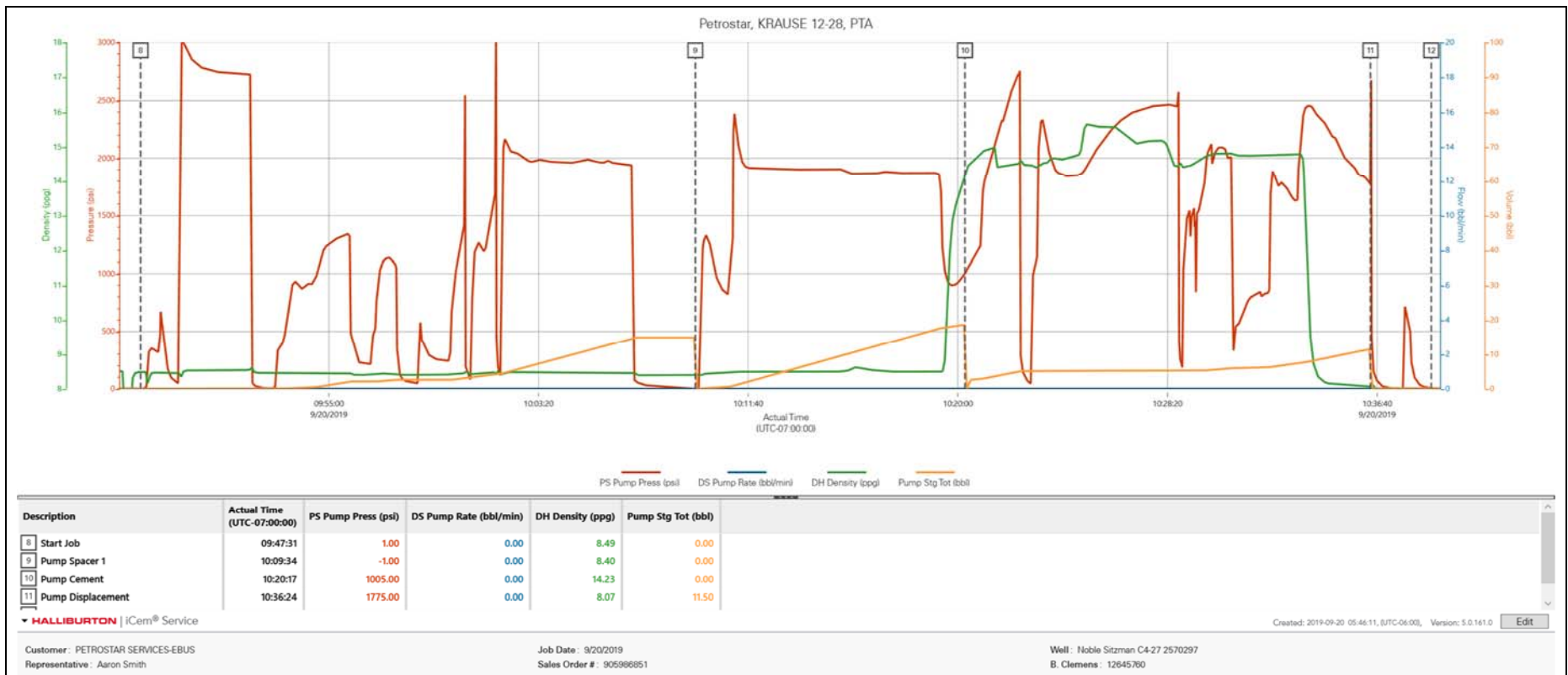
### 1.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	PS Pump Press (psi)	DS Pump Rate (bbl/min)	DH Density (ppg)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	Call Out	9/20/2019	03:00:00	USER					Called out by Service Coordinator for O/L at 0630
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	9/20/2019	05:45:00	USER					Held meeting with all personnel in convoy to discuss directions and hazards associated with drive, all fit to drive.
Event	3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	9/20/2019	06:00:00	USER					Journey Management prior to departure
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	9/20/2019	06:30:00	USER					Upon arrival met with company man to discuss job details and calculations, performed hazard hunt and site assessment.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	9/20/2019	07:00:00	USER					Discussed rigging up hazards and procedure according to HMS.
Event	6	Other	Other	9/20/2019	07:15:00	USER					Water test- PH-6, Chlor-0, Temp-65. Cement temp-70.
Event	7	Pre-Job Safety Meeting	Pre-Job Safety Meeting	9/20/2019	08:00:00	USER					Held safety meeting with all job associated personnel to discuss job procedure, hazards and stop work authority.
Event	8	Start Job	Start Job	9/20/2019	09:47:31	COM4	1.00	0.00	8.49	0.00	Tub-733' 1.5" ID-1.23", OH-40' 9", 12' 12.25", Surf-8.625" 24#. Pump unit did not read bpm on flecs, we

											pumped est off of rpm and pressure.
Event	9	Circulate Well	Circulate Well	9/20/2019	09:52:40	USER	3.00	0.00	8.46	0.10	Pumped 15bbls fresh water to circulate well, to get coil to 1111'. Once on bottom coil pulled to 733'.
Event	10	Pump Spacer 1	Pump Spacer 1	9/20/2019	10:09:34	COM4	-1.00	0.00	8.40	0.00	Pumped 10bbls with 40#s Mud Flush III at 2bpm 2000psi, followed with 5bbls fresh water at 2bpm.
Event	11	Pump Cement	Pump Cement	9/20/2019	10:20:17	COM4	1005.00	0.00	14.23	0.00	Pumped 50sks or 12.4bbls 14.5#1.39y 6.78g/s PlugCem at 2bpm 2000psi. While coil pulled slow.
Event	12	Pump Displacement	Pump Displacement	9/20/2019	10:36:24	COM4	1775.00	0.00	8.07	11.50	Pumped 4.4bbls fresh water to clean coil lines.
Event	13	End Job	End Job	9/20/2019	10:38:49	USER	3.00	0.00	7.99	0.20	Coil unit pulled tubing to 35', Clean pumps and lines. Est. TOC-565'.
Event	14	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	9/20/2019	11:00:00	USER	2131.00	0.00	8.33	42.90	Discussed rigging down hazards and procedure according to HMS with all HES personnel
Event	15	Safety Meeting - Departing Location	Safety Meeting - Departing Location	9/20/2019	11:15:00	USER					Held meeting with all personnel in convoy to discuss directions and hazards associated with drive, all fit to drive.
Event	16	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	9/20/2019	11:30:00	USER					Pre journey management prior to departure.

## 2.0 Attachments

### 2.1 KRAUSE 12-28-Custom Results.png



3.0 Custom Graphs

3.1 Custom Graph

