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# **Caerus Operating LLC TWO-STAGE/MULTI-STAGE CEMENT POST JOB REPORT**

ELU O13 FED 24C-13-496 05-103-12499  
S:13 T:4S R:96W Rio Blanco CO

CallSheet #: 90665  
Proposal #: 75049



**TWO-STAGE/MULTI-STAGE CEMENT Post Job Report**

**Attention:** Mr. Cole Walton | (720) 880-6325 | cwalton@caerusoilandgas.com

Caerus Operating LLC

1001 17TH STREET | DENVER, CO 80202

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Dear Mr. Cole Walton,

Thank you for the opportunity to provide cementing services on this well. American Cementing strives to achieve complete customer satisfaction. If you have any questions regarding the services or data provided, please contact American Cementing at any time.

Sincerely,

**Krystal Schell**

Field Engineer I | (719) 992-1830 | krystal.schell@americacementing.com

**Field Office**      28730 US-6, Rifle, CO 81650  
Phone: (970) 657-1187

## Job Details & Summary

### Geometry

Type	Function	OD (in)	ID (in)	Weight (lb/ft)	Thread	Top (ft)	Bottom (ft)	Excess (%)
Casing	Outer	20	19.5	53	n/a	0	125	0
Open Hole	Outer	n/a	14.75	n/a	n/a	100	3000	25
Open Hole	Outer	n/a	14.75	n/a	n/a	3000	3545	0
Casing	Inner	9.625	8.921	36	n/a	0	3502.56	0
DV Tool						918.4		

### Equipment / People

Unit Type	Unit	Power Unit	Employee #1
Field Storage Silo	FSS-473		
Field Storage Silo	FSS-469		
Cement Trailer Float	CTF-576	TRC-059	Candace Serrano
Cement Pump Float	CPF-012	TRH-1137	James Lujan
Cement Pump Float	CPF-053	TRH-1522	Danny Ridgeway
Light Duty Vehicles	LDV-157		Francisco Castillo

### Timing

Event	Date/Time
ERTS	03/14/2024 16:00
Call Out	3/14/2024 11:00
Depart Facility	3/14/2024 14:05
On Location	3/14/2024 16:12
Rig Up Iron	3/14/2024 16:30
Job Started	3/14/2024 18:36
Job Completed	3/15/2024 08:30
Rig Down Iron	3/15/2024 08:45
Depart Location	3/15/2024 10:30

### General Job Information

Metrics	Value
Well Fluid Density	9.8 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	300 bbls
Rig Circulation Time	0.5 hours
Calculated Displacement	267/69 bbls
Actual Displacement	267/69 bbls
Total Spacer to Surface	0 bbls
Total CMT to Surface	0 bbls
Well Topped Out	Yes
Top Out Volume	105 bbls

### Job Details

Metrics	Value
Flare Prior to Job	No
Flare Prior to Job	0 units
Flare During Job	No
Flare During Job	0 units
Flare at End of Job	No
Flare at End of Job	0 units
Well Full Prior to Job	Yes
Well Fluid Density Into Well	9.8 lb/gal
Well Fluid Density Out of Well	9.8 lb/gal

### Job Details (cont.)

Metrics	Value
BHCT	90 °F
BHST	132 °F

### Water Analysis

Metrics	Value	Recommended
Water Source	Upright Rig Tank	
Temperature	70 °F	50-80 °F
pH Level	7	5.5-8.5
Chlorides	0 mg/L	0-3000 mg/L
Total Alkalinity	240	0-1000
Total Hardness	250 mg/L	0-500 mg/L
Carbonates	0 mg/L	0-100 mg/L
Sulfates	200 mg/L	0-1500 mg/L
Potassium	250 mg/L	0-3000 mg/L
Iron	0 mg/L	0-300 mg/L

### Circulation

Lost Circulation Experienced	Losses into Spacer	Losses into Cement	Losses into Displacement
Yes	N/A	N/A	N/A

#### Circulation Details

NO RETURNS THROUGH OUT JOB

### Job Execution Information

Fluid	Product	Function	Density (lb/gal)	Yield (ft <sup>3</sup> /sk)	Water Rq. (gal/sk)	Water Rq. (gal/bbl)	Volume (sks)	Volume (bbl)	Designed Top (ft)
1	Water	Flush	8.34			42.00		20.00	818
2	Stage 1 Lead	Lead	12.00	2.47	14.42		708.00	311.20	950
3	Stage 1 Tail	Tail	13.00	1.94	10.51		185.00	64.07	3000
4	Water	DisplacementFinal	8.34			42.00		267.00	0
1	Water	Flush	8.34			42.00		20.00	0
2	Stage 2 Primary	Primary	12.00	2.51	14.63		352.00	157.07	0
3	Water	DisplacementFinal	8.34			42.00		69.00	0

### Job Fluid Details

Fluid	Type	Fluid	Product	Function	Conc.	Uom
2	Lead	Stage 1 Lead	ASTM TYPE IL	Cement	100.00	%
2	Lead	Stage 1 Lead	A-10	Accelerator	5.00	%BWOB
2	Lead	Stage 1 Lead	A-2	Accelerator	3.00	lb/sk
2	Lead	Stage 1 Lead	IntegraSeal PHENO	LostCirculation	0.50	lb/sk
2	Lead	Stage 1 Lead	IntegraSeal POLI	LostCirculation	0.25	lb/sk
2	Lead	Stage 1 Lead	R-7C	Retarder	0.10	%BWOB
2	Lead	Stage 1 Lead	STATIC FREE	Other	0.01	%BWOB
2	Lead	Stage 1 Lead	XCem-308	Defoamer	0.30	%BWOB
3	Tail	Stage 1 Tail	ASTM TYPE IL	Cement	100.00	%
3	Tail	Stage 1 Tail	A-10	Accelerator	5.00	%BWOB
3	Tail	Stage 1 Tail	A-2	Accelerator	2.00	lb/sk
3	Tail	Stage 1 Tail	A-7P	Accelerator	2.00	lb/sk
3	Tail	Stage 1 Tail	XCem-308	Defoamer	0.30	%BWOB
2	Primary	Stage 2 Primary	ASTM TYPE IL	Cement	100.00	%
2	Primary	Stage 2 Primary	A-10	Accelerator	5.00	%BWOB
2	Primary	Stage 2 Primary	A-2	Accelerator	3.50	lb/sk
2	Primary	Stage 2 Primary	A-7P	Accelerator	2.00	lb/sk
2	Primary	Stage 2 Primary	XCem-308	Defoamer	0.30	%BWOB

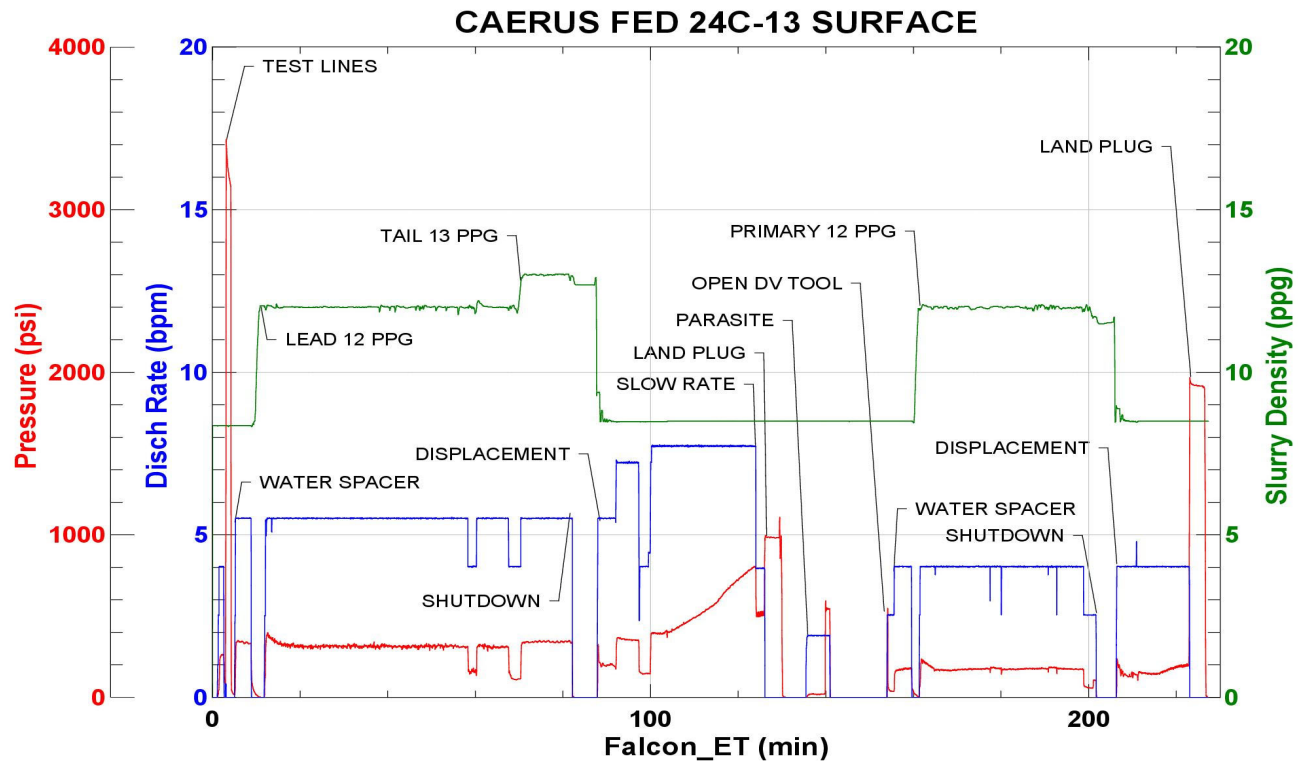
## Job Logs

Line	Event	Date (MM/DD/YY)	Time (HH:MM)	Density (lb/gal)	Pump Rate (bpm)	Pump Volume (bbls)	Pipe Pressure (psi)	Comment
1	CALLOUT	3/14/2024	11:00					ON LOCATION AT 16:00 HRS
2	LEAVE THE YARD	3/14/2024	14:05					CREW LEAVE THE YARD
3	ON LOCATION	3/14/2024	16:12					CREW ON LOCATION
4	RIG UP	3/14/2024	16:30					RIG UP MEETING, RIG UP
5	SAFETY MEETING	3/14/2024	18:30					PRE-JOB SAFETY MEETING
6	PRESSURE TEST	3/14/2024	18:44				3400	PRESSURE TEST LINES
7	WATER SPACER	3/14/2024	18:46	8.34	5.5	20	329	WATER SPACER
8	LEAD CEMENT	3/14/2024	18:53	12	5.5	50	309	LEAD 708 SKS/311 BBLS AT 12 PPG
9	LEAD CEMENT	3/14/2024	19:02	12	5.5	50	315	100 BBLS LEAD CEMENT PUMPED
10	LEAD CEMENT	3/14/2024	19:12	12	5.5	50	323	150 BBLS LEAD CEMENT PUMPED
11	LEAD CEMENT	3/14/2024	19:20	12	5.5	50	345	200 BBLS LEAD CEMENT PUMPED
12	LEAD CEMENT	3/14/2024	19:29	12	5.5	50	347	250 BBLS LEAD CEMENT PUMPED
13	LEAD CEMENT	3/14/2024	19:38	12	5.5	61	343	311 BBLS LEAD CEMENT PUMPED
14	TAIL CEMENT	3/14/2024	19:51	13	5.5	64	375	TAIL 185 SKS/64 BBLS AT 13 PPG, TOP OF TAIL 3,000'
15	SHUTDOWN	3/14/2024	20:03					SHUTDOWN, DROP PLUG
16	DISPLACEMENT	3/14/2024	20:09	8.34	7	50	353	DISPLACEMENT WATER
17	DISPLACEMENT	3/14/2024	20:17	8.34	7.7	50	419	100 BBLS DISPLACEMENT PUMPED
18	DISPLACEMENT	3/14/2024	20:24	8.34	7.7	50	515	150 BBLS DISPLACEMENT PUMPED
19	DISPLACEMENT	3/14/2024	20:21	8.34	7.7	50	673	200 BBLS DISPLACEMENT PUMPED
20	DISPLACEMENT	3/14/2024	20:38	8.34	7.7	57	801	257 BBLS DISPLACEMENT PUMPED
21	SLOW RATE	3/14/2024	20:45	8.34	4	10	529	SLOW RATE
22	LAND PLUG	3/14/2024	20:47				1011	LAND PLUG, NO RETURNS
23	CHECK FLOATS	3/14/2024	20:51					FLOATS HELD, 1 BBL FLOW BACK
24	PARASITE	3/14/2024	20:57	9	2	10	690	SUGAR WATER THROUGH PARASITE, BROKE AT 690 PSI
25	OPENING DEVICE	3/14/2024	21:02					DROP DV TOOL OPENING DEVICE
26	OPEN DV TOOL	3/14/2024	21:14				555	OPEN DV TOOL AT 555 PSI
27	WATER SPACER	3/14/2024	21:15	8.34	4	20	175	WATER SPACER
28	PRIMARY	3/14/2024	21:22	12	4	50	215	PRIMARY 352 SKS/157 BBLS AT 12 PPG
29	PRIMARY	3/14/2024	21:34	12	4	50	221	100 BBLS PRIMARY PUMPED, GOT RETURNS AT 94BBLS, LOST AT 115 BBLS
30	PRIMARY	3/14/2024	21:47	12	4	57	221	157 BBLS PRIMARY PUMPED
31	SHUTDOWN	3/14/2024	22:02					SHUTDOWN, DROP PLUG
32	DISPLACEMENT	3/14/2024	22:06	8.34	4	69	213	DISPLACEMENT WATER
33	LAND PLUG	3/14/2024	22:23	8.34			1800	LAND PLUG, NO RETURNS
34	CHECK FLOATS	3/14/2024	22:27					FLOATS HELD, 0.5 BBL FLOW BACK
35	OTHER	3/14/2024	22:30					GET READY FOR TOPOUT
36	TOPOUT-1	3/15/2024	01:18	15.8	2.5	60	255	TOPOUT-1 293 SKS/60 BBLS AT 15.8 PPG
37	SHUTDOWN	3/15/2024	01:42					SHUTDOWN, WASH PUMP AND LINES
38	TOPOUT-2	3/15/2024	04:16	15.8	2.7	40	243	TOPOUT-2 196 SKS/40 BBLS AT 15.8 PPG
39	SHUTDOWN	3/15/2024	04:59					SHUTDOWN, WASH PUMP AND LINES
40	TOPOUT-3	3/15/2024	08:21	15.8	2	5	121	TOPOUT-3 25 SKS/5 BBLS, 4 BBLS TOPOUT, 1 BBL TO THE PIT, 514 SKS/105BBLS TOTAL
41	SHUTDOWN	3/15/2024	08:30					SHUTDOWN, WASH PUMP AND LINES
42	RIG DOWN	2/15/2024	08:45					RIG DOWN MEETING, RIG DOWN
43	LEAVE LOCATION	3/15/2024	10:30					CREW LEAVE LOCATION

## Pump Diagrams



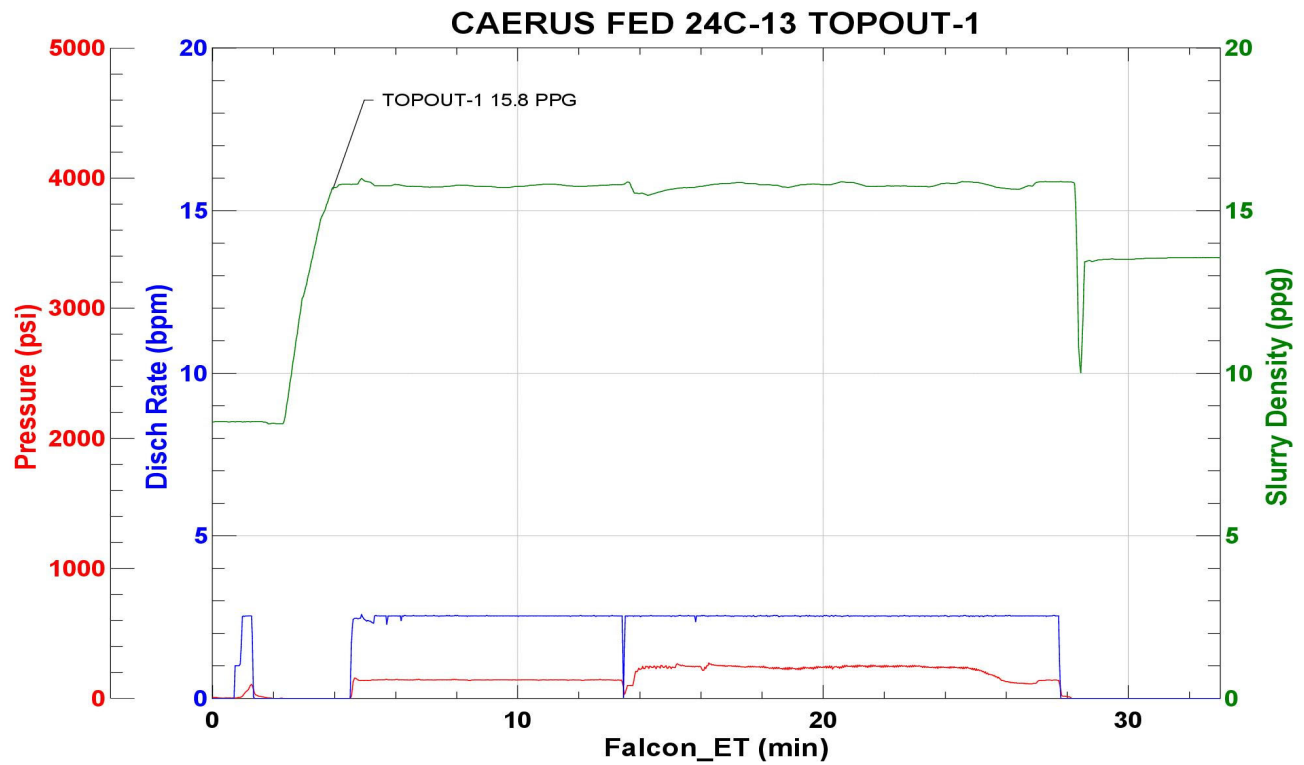
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Customer: CAERUS  
Well Name: FED 24C-13



Job Start: Thursday, March 14, 2024



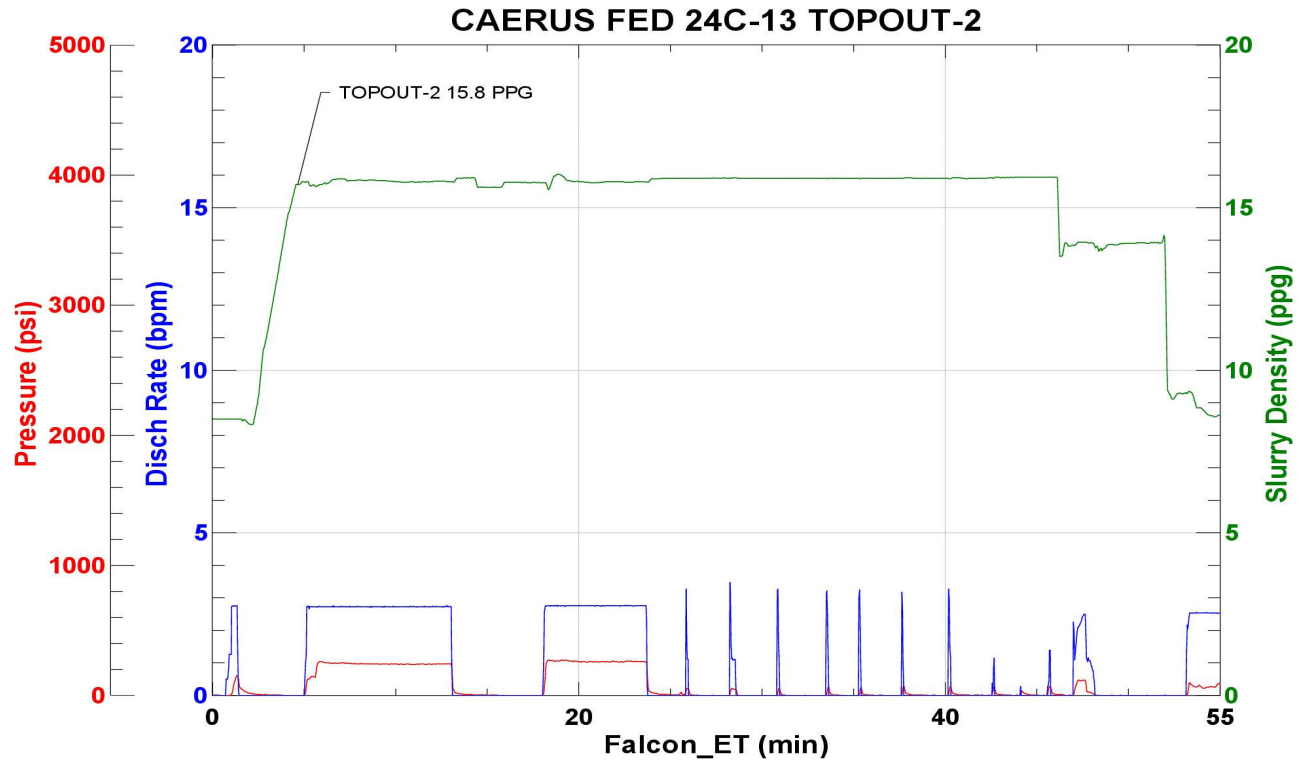
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Job Start: Friday, March 15, 2024



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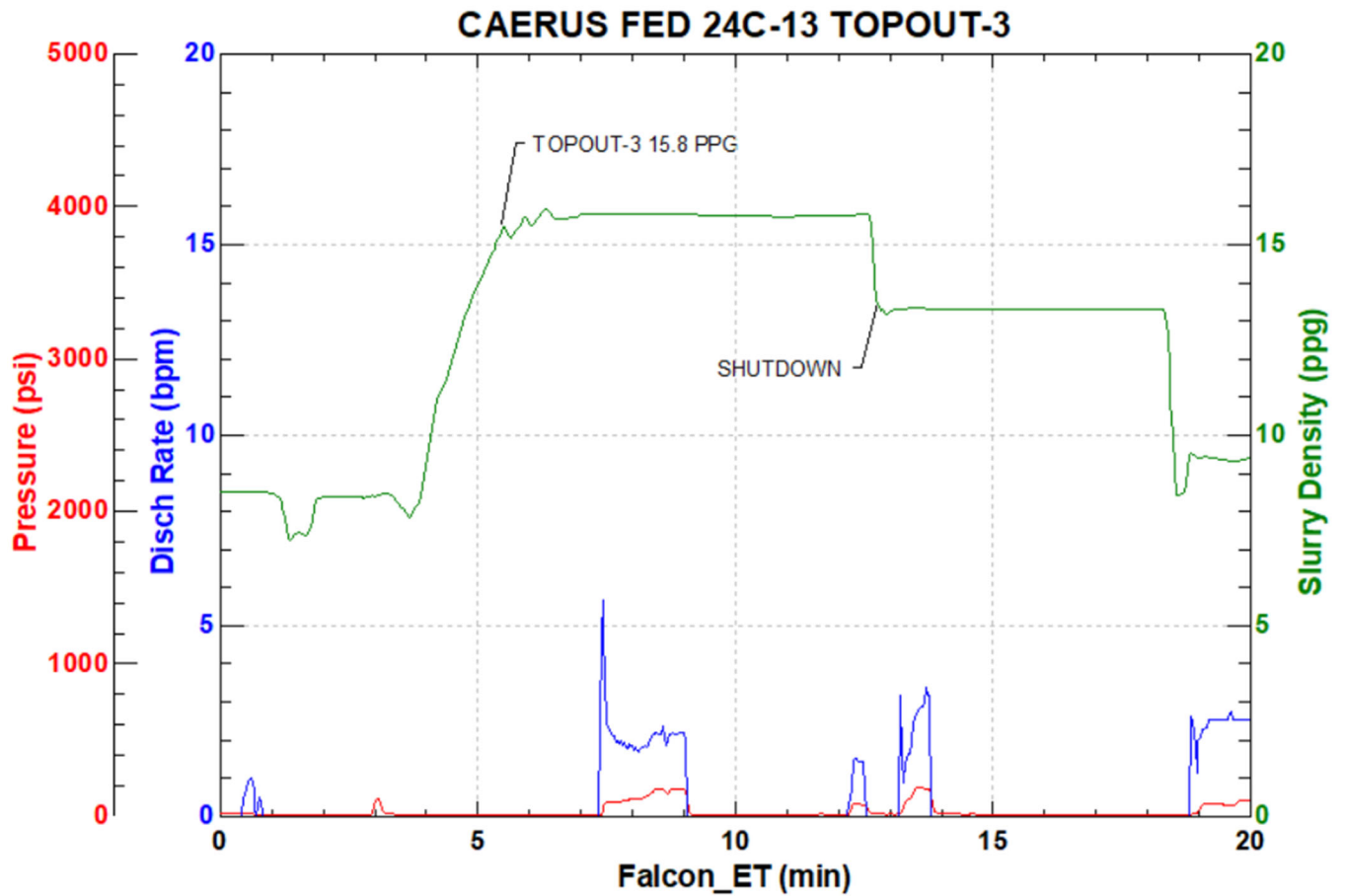


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