

HALLIBURTON

iCem[®] Service

NOBLE ENERGY INC

For: CJ Smith

Date: Thursday, May 04, 2017

Lilly Unit 08-09

PTA

Sincerely,

Vaughn Oteri and crew

The Road to Excellence Starts with Safety

Sold To #: 345242	Ship To #: 3796585	Quote #:	Sales Order #: 0904003083
Customer: NOBLE ENERGY INC E-BUSINESS		Customer Rep: CJ Smith	
Well Name: LILLY UNIT	Well #: 08-09	API/UWI #: 05-123-14018	
Field:	City (SAP): RAYMER	County/Parish: WELD	State: COLORADO
Legal Description:			
Contractor: UNKNOWN		Rig/Platform Name/Num: WORKOVER RIG	
Job BOM: 7528 7528			
Well Type: OIL			
Sales Person: HALAMERICA/HB70026		Srvc Supervisor: Vaughn Oteri	

Job

Formation Name	
Formation Depth (MD)	Top Bottom
Form Type	BHST
Job depth MD	5512ft Job Depth TVD
Water Depth	Wk Ht Above Floor
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		8.625	8.097	24			0	211		
Tubing		2.375	1.995	4.7			0	5512		0
Casing		4.5	4.052	10.5			0	5512		

Tools and Accessories

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Perf top 1	2.375			5338	Top Plug	2.375		HES
Perf btm 1	2.375			5512	Bottom Plug	2.375		HES
Retainer 1	2.375			5411	SSR plug set	2.375		HES
Perf top 2	2.375			2300	Plug Container	2.375		HES
Perf btm 2	2.375			2504	Centralizers	2.375		HES
Retainer 2				2399				

Fluid Data

Stage/Plug #: 1

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
1	Mud Flush III (Powder)	Mud Flush III	10	bbl	8.4			2	
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	Plug #1	HALCEM (TM) SYSTEM	85	sack	15.8	1.148		2	4.98

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
3	Mud Flush III (Powder)	Mud Flush III	10	bbl	8.4			2	
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
4	Plug #2	HALCEM (TM) SYSTEM	95	sack	15.8	1.15		2	5

Cement Left In Pipe	Amount	ft	Reason	Shoe Joint

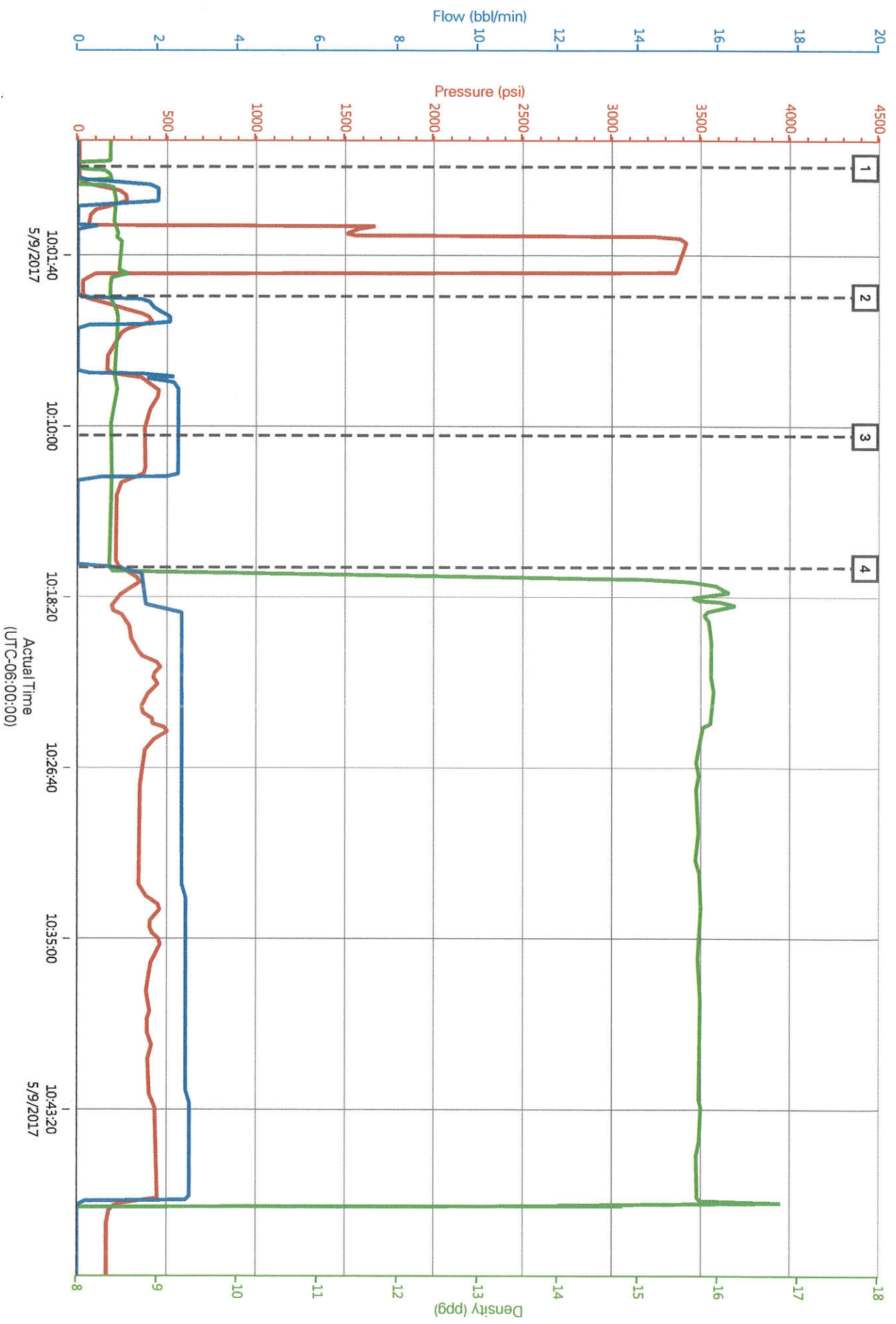
Comment Plug 1 HOP-176.61 TOP-5335.36 2bbl on top of retainer tubing in-198.01 Tubing out-129.03 Under retainer 101feet 1.56bbl Day 2 plug 2 HOC204.25 TOC2299.75 2BBL ON TOP tubing in198.01 tubing out 129.03 below retainer 105feet 1.62bbl

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)	Comments
Event	1	Start Job	Start Job	5/9/2017	09:57:21	COM4	8.00	6.53	0.00	
Event	2	Pressure Test	Pressure Test	5/9/2017	09:59:00	USER	279.00	8.48	2.00	Test Lines to 3500psi
Event	3	Pump Spacer 1	Pump Spacer 1	5/9/2017	10:03:39	COM4	29.00	8.40	0.00	Pumped 10bbls of Mud Flush @ 2.5bpm 440psi
Event	4	Pump Spacer 2	Pump Spacer 2	5/9/2017	10:10:27	COM4	385.00	8.41	2.50	Pumped 5bbls of H2O @ 2.5bpm 410psi
Event	5	Pump Cement	Pump Cement	5/9/2017	10:16:53	COM4	243.00	8.39	0.90	Pumped 400skt(82bbls) of Cement @ 2.5bpm 330psi
Event	6	End Job	End Job	5/9/2017	11:01:19	COM4	255.00	7.91	5.20	

Noble Lilly Unit 08-09 Plug #3



2.0 Real-Time Job Summary

2.1 Job Event Log

Event	Type	Seq. No.	Activity	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		Call Out	Call Out	5/4/2017	02:00:00	USER					Call out from ARC hub
Event 2	Arrive At Loc		Arrive At Loc	Arrive At Loc	5/4/2017	06:25:00	USER					Requested on location @0800 Arrived on location @0625 met with company rep to discuss job process and concerns
Event 3	Other		Other	Other	5/4/2017	06:25:25	USER					Retainer set @2399 feet Top Perf@2300 Bottom Perf@2504 Calculated HOC 204.25 TOC2299.75 105 Feet blow retainer and bottom perf 1.68bbl cement 2bbl on top retainer tubing in hoc198.01 tubing out129.03
Event 4	Start Job		Start Job	Start Job	5/4/2017	15:56:48	COM4	-18.00	8.41	0.00	8.8	Held pre-job safety meeting with all hands on location to discuss job process and hazards
Event 5	Test Lines		Test Lines	Test Lines	5/4/2017	15:59:26	COM4	-17.00	8.40	0.00	10.3	Pressure tested pumps and lines with fresh water 3003 psi found no leaks and pressure held good
Event 6	Pump Spacer 1		Pump Spacer 1	Pump Spacer 1	5/4/2017	16:01:58	COM4	2.00	8.40	0.00	10.3	Mixed 10bbl of Mud flush III at 2.0bpm 298psi
Event 7	Pump Cement		Pump Cement	Pump Cement	5/4/2017	16:07:42	COM4	262.00	8.19	1.90	10.1	Mixed 95sks or 19bbl of 15.8ppg Y1.15 G/sks 0 Halcem at 2.0bpm 289psi
Event 8	Pump Displacement		Pump Displacement	Pump Displacement	5/4/2017	16:17:10	COM4	-13.00	14.76	2.00	0.0	Pumped 7.2bbl of fresh

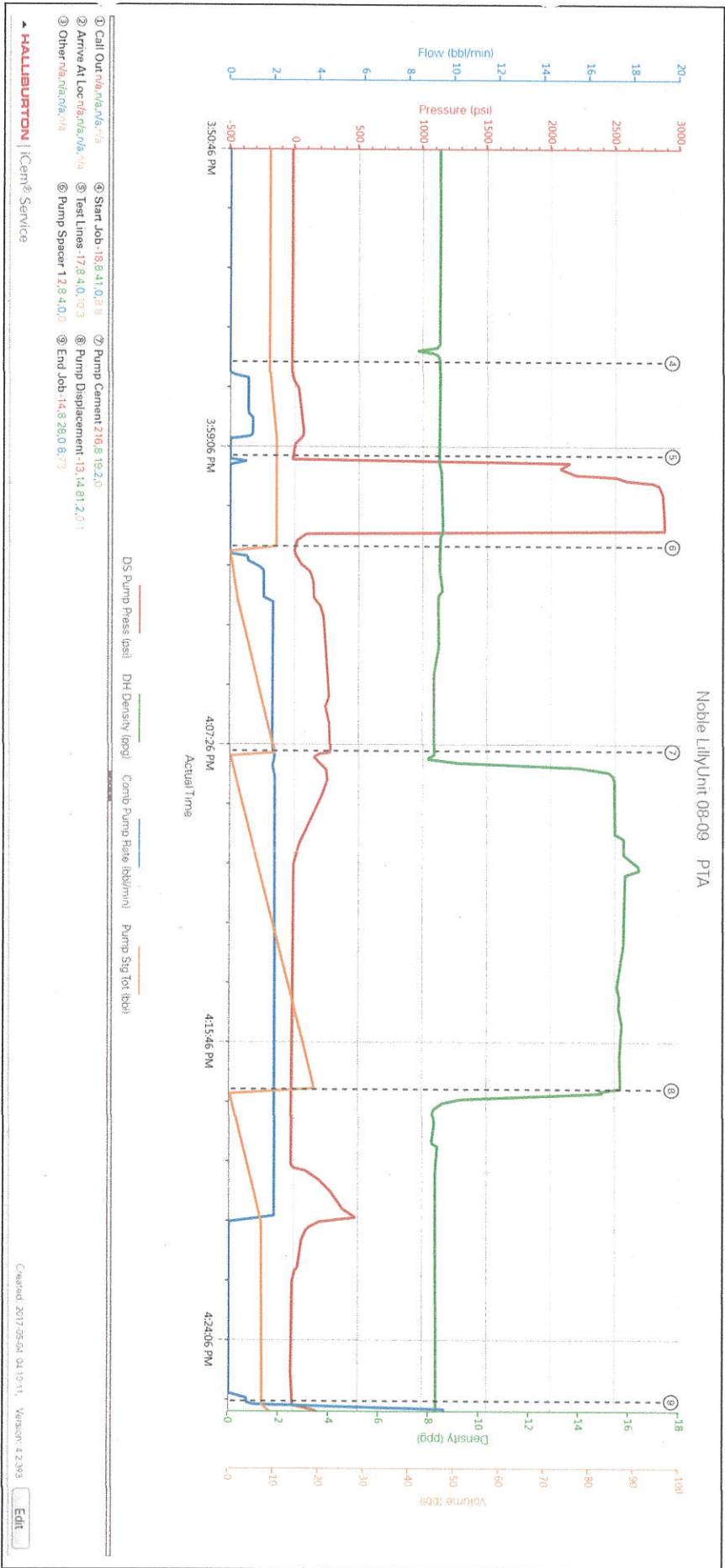
HALLIBURTON

Customer: NOBLE ENERGY INC
Job: Noble Lilly Unit 08-09 PTA Day 2
Case: Case 1

Event	9	End Job	End Job	5/4/2017	16:25:53	COM4	-14.00	8.28	0.80	7.3	No cement back to surface
											water to displace cement

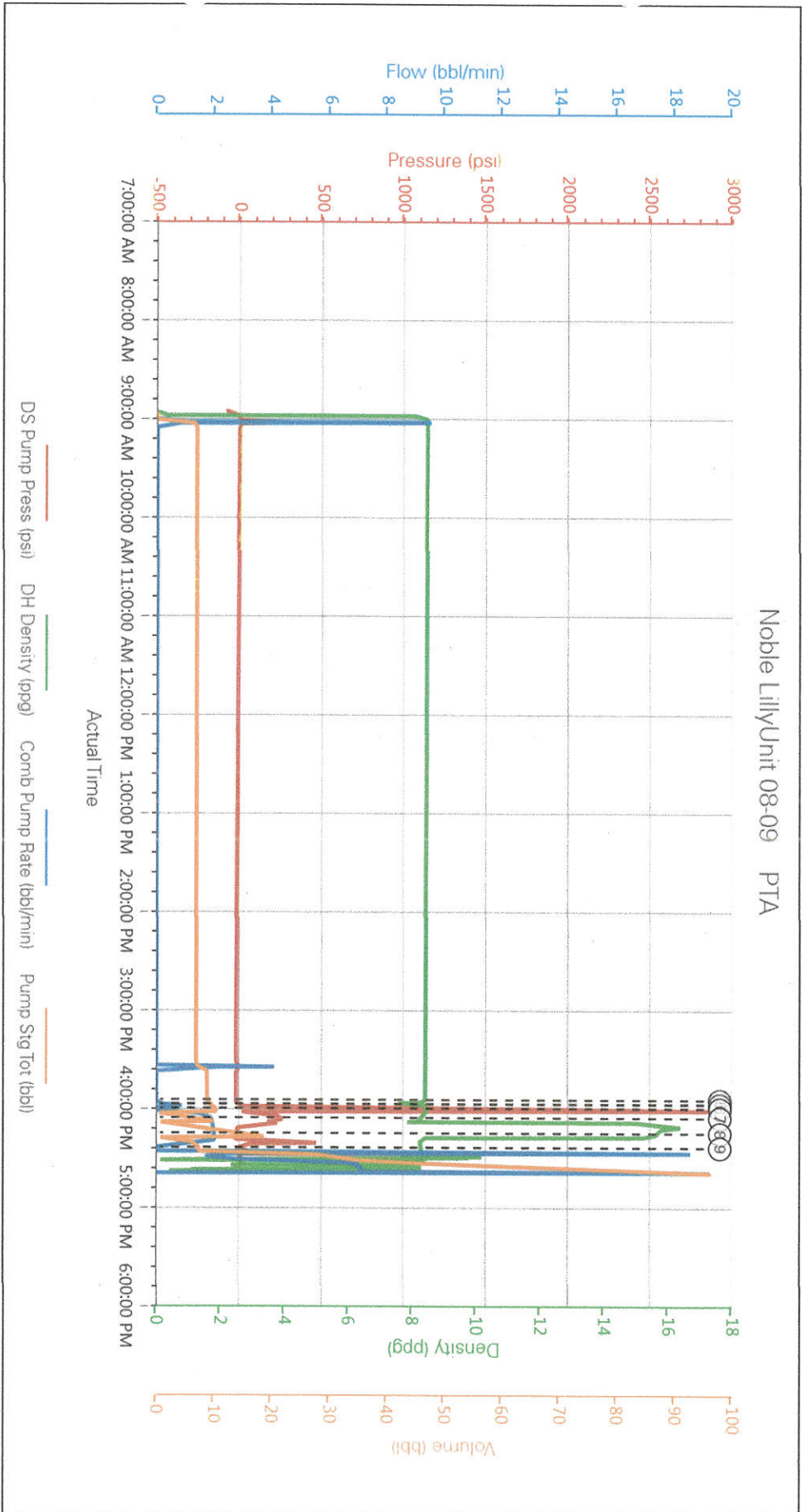
3.0 Attachments

3.1 Case 1-Custom Results.png



4.0 Custom Graphs

4.1 Custom Graph



5.0 Appendix

5.1 3D Wellbore Schematic

