

HALLIBURTON

iCem[®] Service

CONOCO/PHILLIPS COMPANY-EBUS

End Of Well Report

Big Sandy 3-65 36-31 2BH

Sincerely,

Meghan Jacobs

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1.0 Surface Casing Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Big Sandy 3-65-36-31 2BH** 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.

Approximately 78 bbls 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 Ft. Lupton

The Road to Excellence Starts with Safety

Sold To #: 352431		Ship To #: 3848907		Quote #: 0022398104		Sales Order #: 0904678905					
Customer: CONOCO/PHILLIPS COMPANY-EBUS				Customer Rep: Erich Ouellette							
Well Name: BIG SANDY 3-65 36-31			Well #: 2BH		API/UWI #: 05-001-10100-00						
Field: WILDCAT		City (SAP): AURORA		County/Parish: ADAMS		State: COLORADO					
Legal Description: NE SE-35-3S-65W-2505FSL-465FEL											
Contractor:				Rig/Platform Name/Num: Nabors B16							
Job BOM: 7521 7521											
Well Type: HORIZONTAL OIL											
Sales Person: HALAMERICA\HB41307				Srv Supervisor: Kendall Broom - H194727							
Job											
Formation Name											
Formation Depth (MD)		Top		Bottom							
Form Type				BHST							
Job depth MD		2108ft		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	
Open Hole Section			13.5				0	2108			
Casing		9.625	8.921	36	LTC	J-55	0	2097			
Open Hole Section			13.5				1522	2108			
Tools and Accessories											
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make		
Guide Shoe	9.625			2097		Top Plug	9.625	1	HES		
Float Shoe	9.625					Bottom Plug	9.625	1	HES		
Float Collar	9.625					SSR plug set	9.625		HES		
Insert Float	9.625					Plug Container	9.625	1	HES		
Stage Tool	9.625					Centralizers	9.625		HES		
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	10 lb/gal Tuned Spacer III	Tuned Spacer III			50	bbl	10	8.82			
0.10 gal/bbl		D-AIR 3000L, 5 GAL PAIL (101007444)									
38.32 gal/bbl		FRESH WATER									
63.66 lbm/bbl		BARITE, BULK (100003681)									

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
2	SwiftCem	SWIFTCEM (TM) SYSTEM	455	sack	12	2.57		5	15.14
3	SwiftCem	SWIFTCEM (TM) SYSTEM	250	sack	14.2	1.59		6	7.9
4	Displacement	Displacement	158	bbl	8.33			6	
Cement Left In Pipe		Amount	45 ft		Reason			Shoe Joint	
Comment									

2.0 Surface Casing Lab Test Reports

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Rockies, Brighton

Lab Results- Lead

Job Information

Request/Slurry	2457105/1	Rig Name	Nabors B16	Date	27/FEB/2018
Submitted By	Tyler Hill	Job Type	Surface Casing	Bulk Plant	Brighton
Customer	ConocoPhillips	Location		Well	Big Sandy 3-65-36-31 2BH

Well Information

Casing/Liner Size	9.625 in	Depth MD	2022 ft	BHST	35°C / 95°F
Hole Size	13.5 in	Depth TVD	2022 ft	BHCT	34°C / 93°F
Pressure	1250 psi				

Cement Information - Lead Design

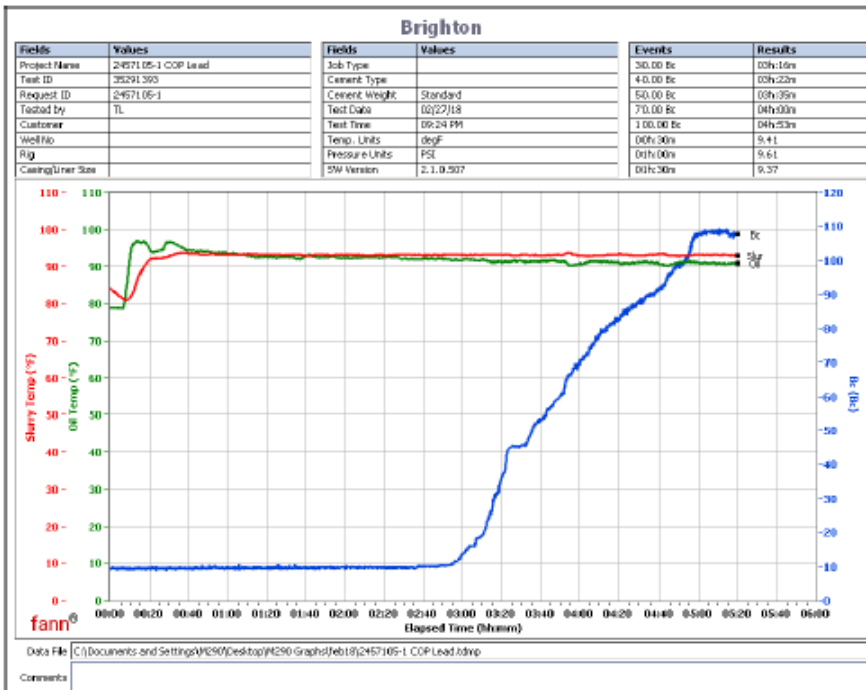
Conc	UOM	Cement/Additive	Sample Type	Sample Date	Lot No.	Cement Properties		
100	% BWOC	Cemex Type I-II	Bulk Blend	28.02.18	4632	Slurry Density	12	lbm/gal
15.14	gal/sack	Field (Fresh) Water	Lab	15.02.18	2/15/18	Slurry Yield	2.57	ft ³ /sack
2	% BWOC	Cal-Seal 60	Bulk Blend	28.02.18		Water Requirement	15.14	gal/sack
2.3	% BWOC	Econolite (Powder - PB)	Bulk Blend	28.02.18	U010418			
0.2	% BWOC	VERSASET (PB)	Bulk Blend	28.02.18	2017-7-2			
6	lb/sk	Mountain Enhancer 923	Bulk Blend	28.02.18				

Operation Test Results Request ID 2457105/1

Thickening Time

28/FEB/2018

Temp (degF)	Pressure (psi)	Reached in (min)	Start BC	30 Bc (hh:mm)	40 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	100 Bc (hh:mm)
93	1250	17	9.4	3:16	3:22	3:35	4:00	4:53



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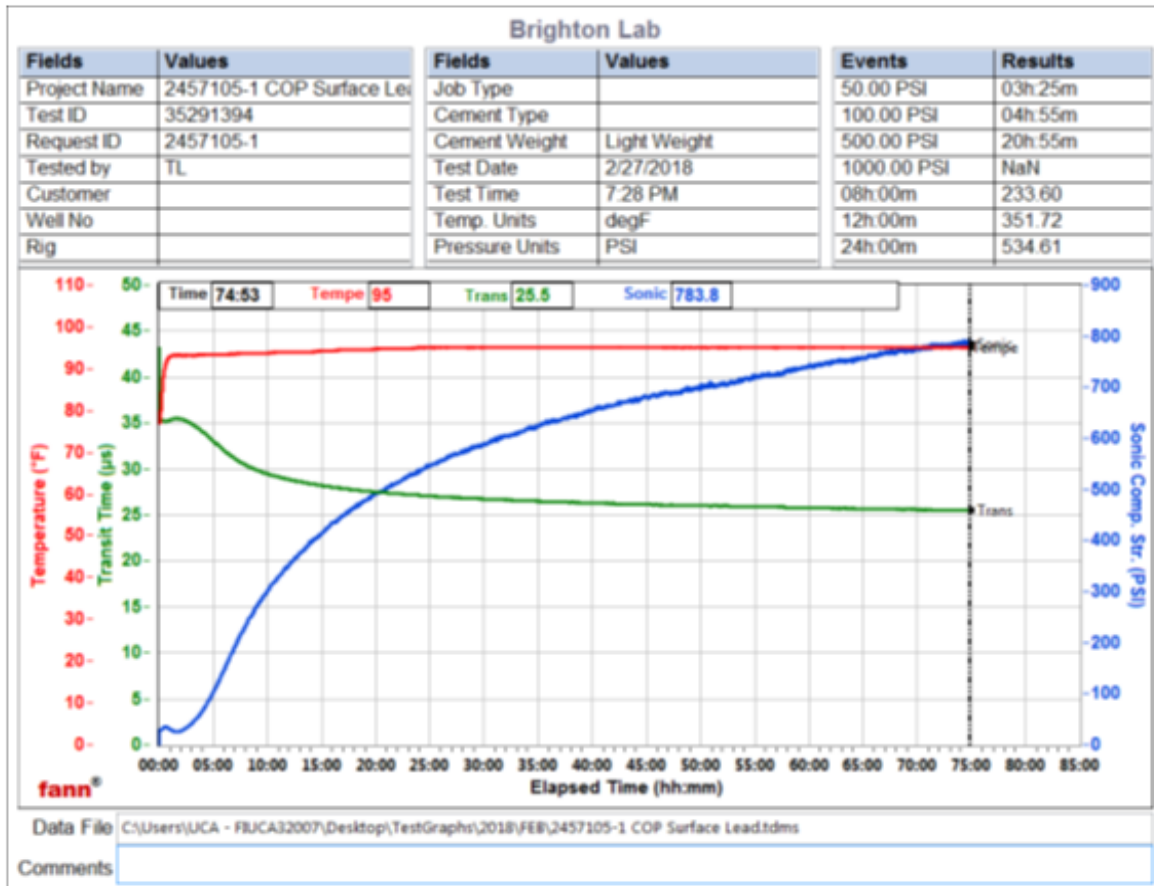
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(v. 4.5.139)

UCA Comp. Strength

03/MAR/2018

End Temp (degF)	Pressure (psi)	50 psi (hh:mm)	100 psi (hh:mm)	500 psi (hh:mm)	8hr CS (psi)	12 hr CS (psi)	16 hr CS (psi)	24 hr CS (psi)	48 hr CS (psi)	End CS (psi)	End Time (hrs)
95	800	3:25	4:55	20:55	233	351	434	534	691	783	74



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Rockies, Brighton

Lab Results- Tail

Job Information

Request/Slurry	2457106/1	Rig Name	Nabors B16	Date	27/FEB/2018
Submitted By	Tyler Hill	Job Type	Surface Casing	Bulk Plant	Brighton
Customer	ConocoPhillips	Location		Well	Big Sandy 3-65-36-31 2BH

Well Information

Casing/Liner Size	9.625 in	Depth MD	2022 ft	BHST	35°C / 95°F
Hole Size	13.5 in	Depth TVD	2022 ft	BHCT	34°C / 93°F
Pressure	1250 psi				

Cement Information - Tail Design

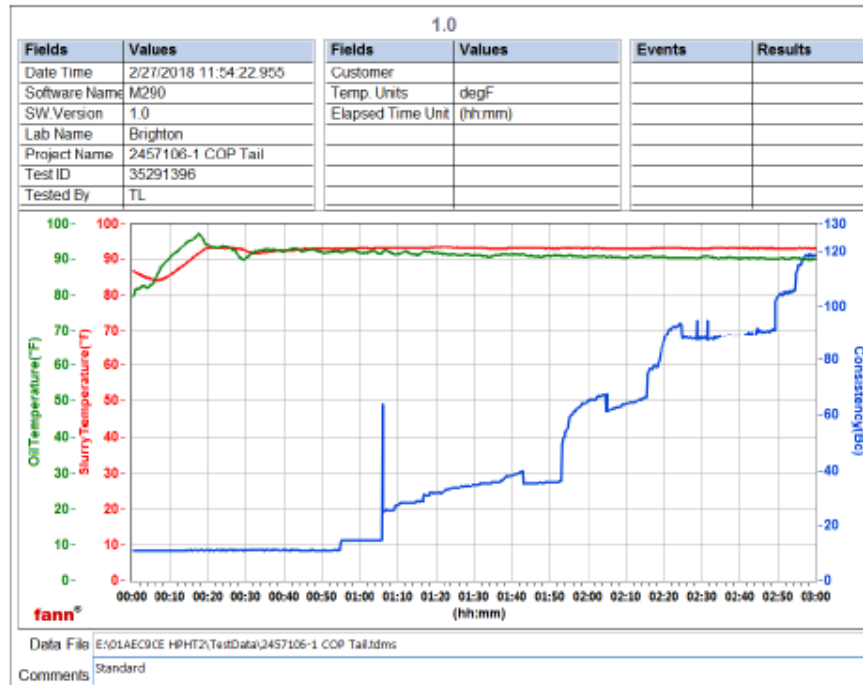
Conc	UOM	Cement/Additive	Sample Type	Sample Date	Lot No.	Cement Properties	
100	% BWOC	Mountain G	Bulk Blend	28.02.18	4038	Slurry Density	14.2 lbm/gal
7.9	gal/sack	Field (Fresh) Water	Lab	15.02.18	2/15/18	Slurry Yield	1.59 ft ³ /sack
2	% BWOC	Cal-Seal 60	Bulk Blend	28.02.18		Water Requirement	7.90 gal/sack
1.3	% BWOC	Econolite (Powder - PB)	Bulk Blend	28.02.18	U010418		
0.2	% BWOC	VERSASET (PB)	Bulk Blend	28.02.18	2017-7-2		
6	lb/sk	Mountain Enhancer 923	Bulk Blend	28.02.18			

Operation Test Results Request ID 2457106/1

Thickening Time

27/FEB/2018

Temp (degF)	Pressure (psi)	Reached in (min)	Start BC	30 Bc (hh:mm)	40 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	100 Bc (hh:mm)
93	1250	17	10:9	1:16	1:43	1:53	2:15	2:49



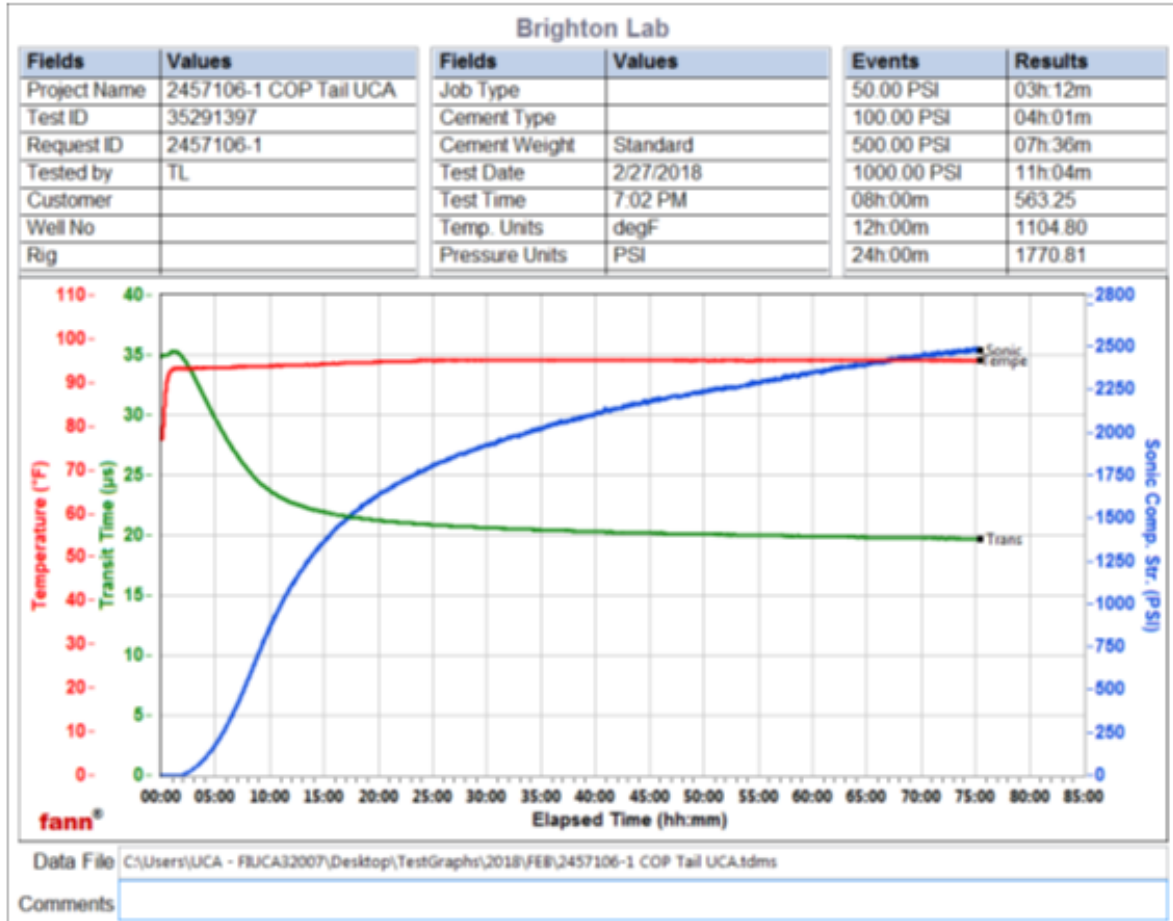
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Created: Wednesday, April 11, 2018

UCA Comp. Strength												03/MAR/2018
End Temp (degF)	Pressure (psi)	50 psi (hh:mm)	100 psi (hh:mm)	500 psi (hh:mm)	1000 psi (hh:mm)	8hr CS (psi)	12 hr CS (psi)	16 hr CS (psi)	24 hr CS (psi)	48 hr CS (psi)	End CS (psi)	End Time (hrs)
95	800	3:12	4:01	7:36	11:04	563	1104	1440	1770	2216	2477	75



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3.0 Surface Casing Real-Time Job Summary

3.1 Job Event Log

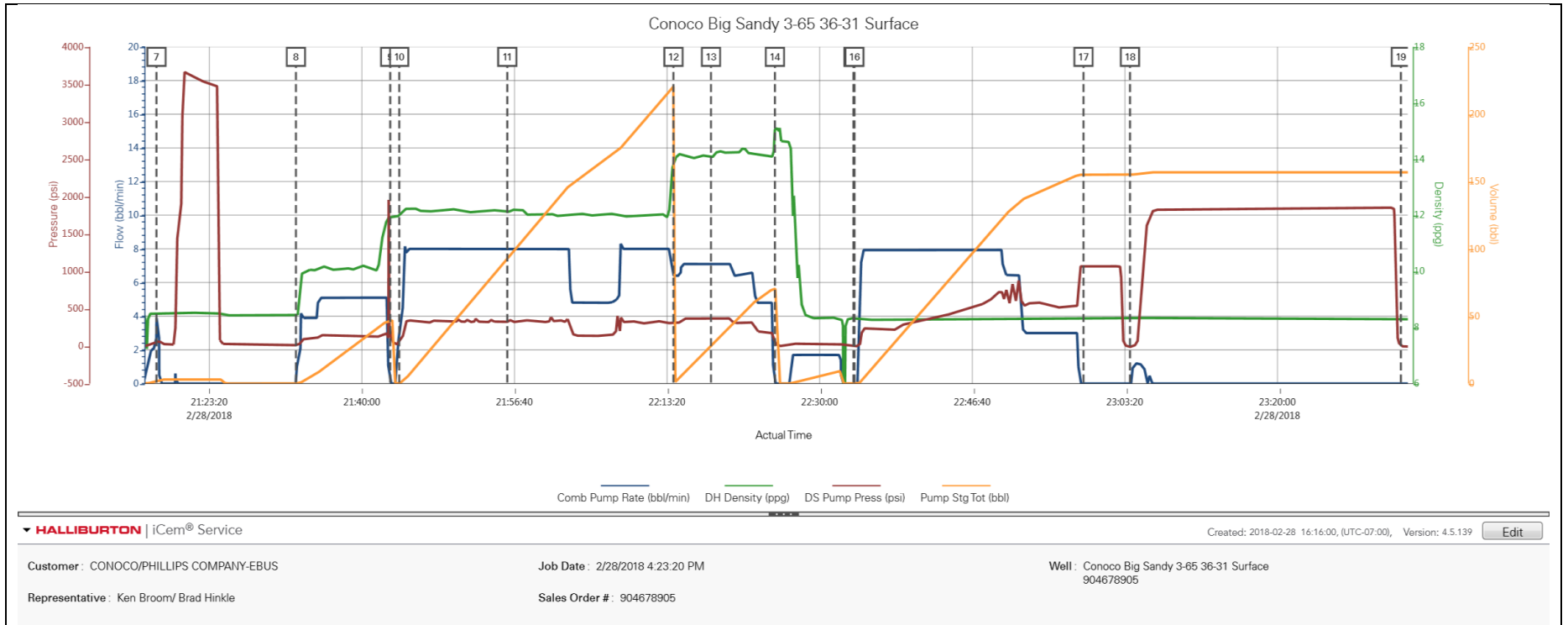
Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Comb Pump Rate (bbl/min)	DH Density (ppg)	DS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	Call Out	2/28/2018	08:00:00	USER					Called crew out to be on location at 1400
Event	2	Depart Shop for Location	Depart Shop for Location	2/28/2018	12:00:00	USER					Held a safety huddle before leaving for location
Event	3	Arrive At Loc	Arrive At Loc	2/28/2018	12:30:00	USER					Arrived on location and met with the company man and safety. One EE had to get the orientation.
Event	4	Rig-up Lines	Rig-up Lines	2/28/2018	13:00:00	USER					Had a hazard hunt before spotting in trucks and rigging up
Event	5	Safety Meeting	Safety Meeting	2/28/2018	17:00:00	USER	0.00	0.00	22.00	0.00	Held a safety meeting with the rig crew to discuss the operation and safety.
Event	6	Start Job	Start Job	2/28/2018	17:28:10	COM5	0.00	8.43	0.00	0.00	Filled lines with 3 bbls water
Event	7	Test Lines	Test Lines	2/28/2018	21:17:34	COM5	4.00	8.50	58.00	2.00	Test lines 500 psi kick out and the 5 gear stall. Then walked it up to 3500 psi
Event	8	Pump Spacer 1	Pump Spacer 1	2/28/2018	21:32:48	COM5	0.00	8.42	13.00	0.00	Pumped 50 bbls Tuned Spacer 10 #, 8.82 yield, 60.4 gal/sks
Event	9	Drop Bottom Plug	Drop Bottom Plug	2/28/2018	21:43:06	COM5	0.00	11.95	165.00	46.90	Dropped bottom plug, preloaded and witnessed by the company man.
Event	10	Pump Lead Cement	Pump Lead Cement	2/28/2018	21:44:05	COM5	3.00	11.97	50.00	0.50	Pumped 208.26 bbls Swiftcem, 12 #, 2.57 yield, 15.57 gal/sks. Pumped 8 bpm and at 334 psi

Event	11	Check Weight	Check weight	2/28/2018	21:55:53	COM5	8.00	12.09	327.00	92.70	Verified weight with pressurized scales
Event	12	Pump Tail Cement	Pump Tail Cement	2/28/2018	22:14:02	COM5	6.40	13.84	316.00	220.40	Pumped 70.79 bbls Swiftcem, 14.2 # 1.59 Yield, 7.9 Gal/sks. Pumped 8 bpm at 326 psi.
Event	13	Check Weight	Check weight	2/28/2018	22:18:08	COM5	7.10	14.05	357.00	28.40	Verified weight with pressurized scales
Event	14	Shutdown	Shutdown	2/28/2018	22:25:07	COM5	0.00	15.07	46.00	70.40	Shut down and washed cement head and lines
Event	15	Drop Top Plug	Drop Top Plug	2/28/2018	22:33:42	COM5	0.00	8.32	1.00	0.00	Dropped top plug preloaded and witnessed by the company man.
Event	16	Pump Displacement	Pump Displacement	2/28/2018	22:33:48	COM5	0.00	8.30	1.00	0.00	Pumped 158 bbls water displacement. Got Spacer to surface when displacement began. Pumped at 8 bpm at 570 psi. Got 78 bbls cement back to surface.
Event	17	Bump Plug	Bump Plug	2/28/2018	22:58:49	COM5	0.00	8.33	1067.00	155.00	Final lift pressure was 570 psi and bumped at 1070 psi. Held the pressure for 5 min. and released the pressure to check floats. Floats held. Got 3/4 bbls back on the truck
Event	18	Pressure Up Well	Pressure Up Well	2/28/2018	23:03:54	COM5	0.00	8.30	-10.00	155.00	Pressured up well to 1800 psi for a 30 min. casing test. Pressure climbed to 1900 psi. Released and got 3/4 bbl back on the truck
Event	19	End Job	End Job	2/28/2018	23:33:29	COM5					
Event	20	Depart Location	Depart Location	3/1/2018	00:45:00	USER					Held a safety huddle before leaving location
Event	21	Rig Down Lines	Rig Down Lines	3/1/2018	23:50:00	USER					Held a safety meeting with the rig crew to discuss the

rig down.

4.0 Surface Casing Attachments

4.1 Conoco Big Sandy 3-65 36-31 Surface job chart



5.0 Production Casing Cementing Job Summary

5.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Big Sandy 3-65 36-31 2BH** cement **Production** 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.

Approximately 35bbls of spacer 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 [Ft. Lupton]

HALLIBURTON

Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 352431	Ship To #: 3848907	Quote #: 0022397820	Sales Order #: 0904736184							
Customer: CONOCO/PHILLIPS COMPANY-EBUS		Customer Rep: ERICH OUELLETTE								
Well Name: BIG SANDY 3-65 36-31	Well #: 2BH	API/UWI #: 05-001-10100-00								
Field: WILDCAT	City (SAP): AURORA	County/Parish: ADAMS	State: COLORADO							
Legal Description: NE SE-35-3S-65W-2505FSL-465FEL										
Contractor:		Rig/Platform Name/Num: Nabors B16								
Job BOM: 7523 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HB41307		Srv Supervisor: Vitali Neverdasov								
Job										
Formation Name										
Formation Depth (MD)	Top	Bottom								
Form Type	BHST									
Job depth MD	18198ft	Job Depth TVD	7411							
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		9.625	8.921	36	LTC	J-55	0	2108	0	2108
Casing	0	5.5	4.67	23	TXP-BTC	P-110	0	18198	0	7411
Open Hole Section			8.5				2108	18220	2108	7411
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	5.5					Top Plug	5.5	1	ANTELOPE	
Float Shoe	5.5	1	N/A	18198		Bottom Plug	5.5	1	ANTELOPE	
Float Collar	5.5	1	N/A	18104		SSR plug set	5.5			
Insert Float	5.5					Plug Container	5.5	1	HES	
Stage Tool	5.5					Centralizers	5.5	354	N/A	
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	10.5 lb/gal Tuned Spacer III	Tuned Spacer III	60	bbl	10.5	6.47				
0.10 gal/bbl		D-AIR 3000L, 5 GAL PAIL (101007444)								
0.60 gal/bbl		MUSOL A, 330 GAL TOTE - (790828)								
37.58 gal/bbl		FRESH WATER								
86.45 lbm/bbl		BARITE, BULK (100003681)								
0.60 gal/bbl		DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)								

last updated on 4/1/2018 1:39:17 PM

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Cementing Job Summary

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	ElastiCem	ELASTICEM (TM) SYSTEM	835	sack	13.2	1.57		6	7.54
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	EconoCem	ECONOCEM (TM) SYSTEM	1565	sack	13.5	1.79		7	8.74
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	MMCR Displacement	MMCR Displacement	40	bbl	8.34			8	
0.50 gal/bbl		MICRO MATRIX CEMENT RETARDER, 5 GAL PAIL (100003781)							
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
5	Water	Water	343	bbl	8.33			8	
Cement Left In Pipe		Amount	94 ft		Reason			Shoe Joint	
Comment : ESTIMATED TOT @ 5970'. TOL @ 522'. 35 BBLS OF SPACER BACK TO SURFACE. COULD NOT START AUXILIARY ENGINE. CALLED MECHANIC AND REPLACEMENT PUMP TRUCK PER CUSTOMER REQUEST.DISCOVERED THAT CEMENT PUMP TRUCK DID NOT HAVE FUEL. COUSED RIG WAITING FOR 3 HOURS ON HALLIBURTON.									

6.0 Production Casing Lab Test Reports

HALLIBURTON

Rockies, Brighton

Lab Results- Lead

Job Information

Request/Slurry	2462638/1	Rig Name	Nabors B16	Date	24/MAR/2018
Submitted By	Meghan Jacobs	Job Type	Production Casing	Bulk Plant	Brighton
Customer	ConocoPhillips	Location	Weld	Well	Big Sandy 3-65 36-31 2BH

Well Information

Casing/Liner Size	5.5 in	Depth MD	18260 ft	BHST	106°C / 223°F
Hole Size	8.5 in	Depth TVD	7202 ft	BHCT	104°C / 219°F
Pressure	4829 psi				

Cement Information - Lead Design

Conc	UOM	Cement/Additive	Sample Type	Sample Date	Lot No.	Cement Properties		
35	%	> Boral Craig Pozmix	Bulk Blend	26.03.18		Slurry Density	13.2	lbm/gal
65	%	> Cemex Type I-II	Bulk Blend	26.03.18	6484x2	Slurry Yield	1.569	ft3/sack
100	% BWOC	Cement Blend				Water Requirement	7.538	gal/sack
7.54	gal/sack	Field (Fresh) Water	Lab	05.03.18	3-1-18	Total Mix Fluid	7.538	gal/sack
5	lb/sk	WellLife 708 (PB)	Bulk Blend	26.03.18	1-2-18			
0.1	% BWOC	SA-1015 (PB)	Bulk Blend	26.03.18	7133023w			
0.3	% BWOC	SCR-100 (PB)	Bulk Blend	26.03.18	ct18a1008	Water Source	Field (Fresh)	Water
1	lb/sk	Silicalite - Compacted	Bulk Blend	26.03.18	1-2-18			
0.2	% BWOC	HALAD-344 (PB)	Bulk Blend	26.03.18	20180145	Water Chloride		

These are draft results and have not been approved for final use.

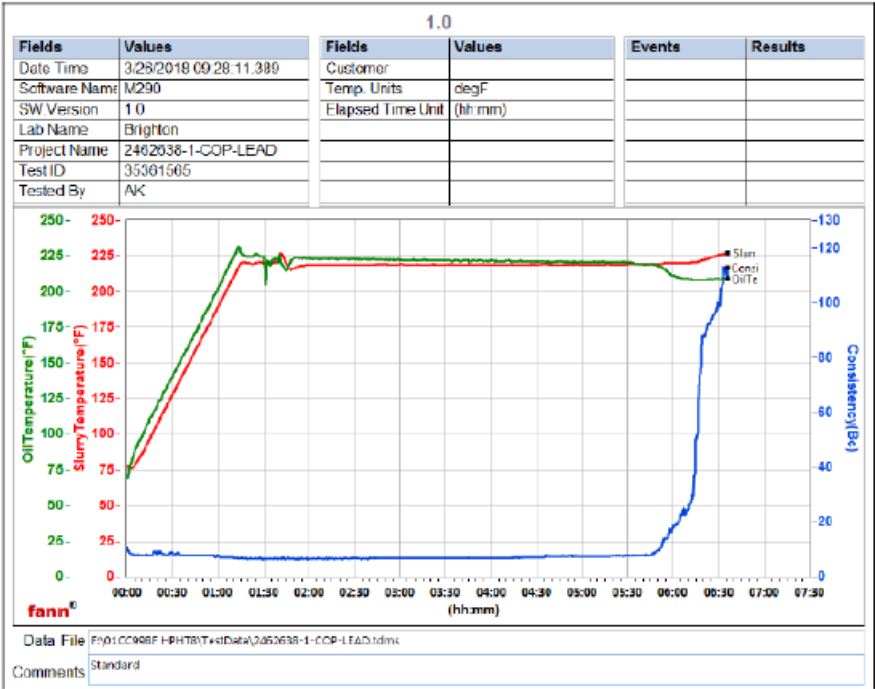
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Global Customer Report

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Operation Test Results Request ID 2462638/1
Thickening Time - ON-OFF-ON 27/MAR/2018

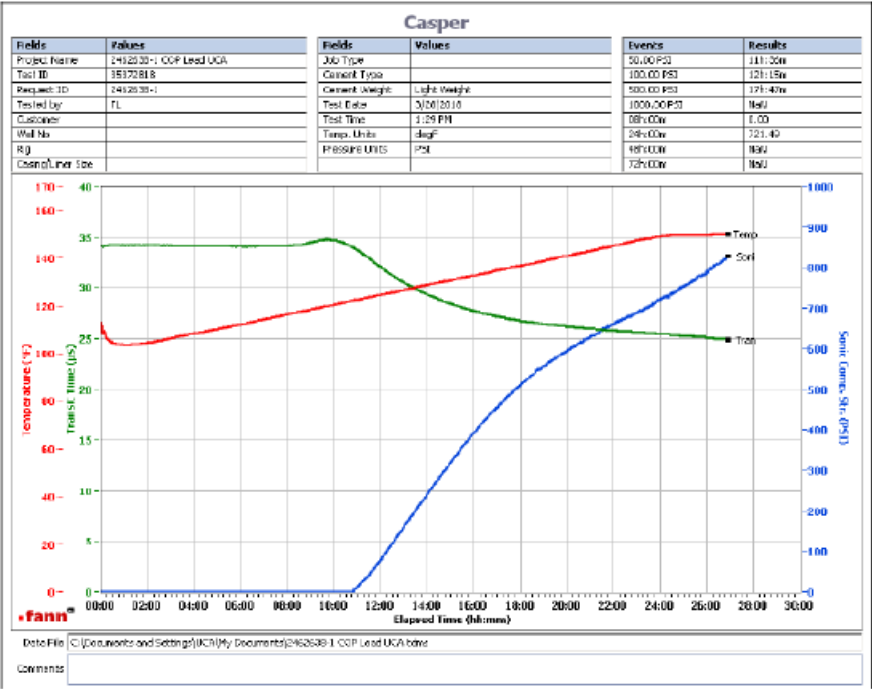
Test Temp (degF)	Pressure (psi)	Reached in (min)	30 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	100 Bc (hh:mm)	Start Bc	Stirring before stop (mins)	Static Period (min)	Peak reading (Bc)
219	4829	73	6:12	6:14	6:16	6:29	9.9	90	10	10



These are draft results and have not been approved for final use.

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UCA Comp. Strength						24/MAR/2018	
End Temp (degF)	Pressure (psi)	50 psi (hh:mm)	100 psi (hh:mm)	500 psi (hh:mm)	8hr CS (psi)	12 hr CS (psi)	16 hr CS (psi)
150	800	11:36	12:15	17:47	0	80.5	393.1



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HALLIBURTON

Rockies, Brighton

Lab Results- Tail

Job Information

Request/Slurry	2462639/3	Rig Name	Nabors B16	Date	24/MAR/2018
Submitted By	Meghan Jacobs	Job Type	Production Casing	Bulk Plant	Brighton
Customer	ConocoPhillips	Location	Weld	Well	Big Sandy 3-65 36-31 2BH

Well Information

Casing/Liner Size	5.5 in	Depth MD	18260 ft	BHST	106°C / 223°F
Hole Size	8.5 in	Depth TVD	7202 ft	BHCT	104°C / 219°F
Pressure	4829 psi				

Cement Information - Tail Design

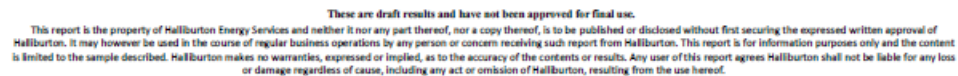
Conc	UOM	Cement/Additive	Sample Type	Sample Date	Lot No.	Cement Properties		
35	%	> Boral Craig Pozmix	Bulk Blend	27.03.18		Slurry Density	13.5	lbm/gal
65	%	> Cemex Type I-II	Bulk Blend	27.03.18	3	Slurry Yield	1.791	ft ³ /sack
100	% BWOC	Cement Blend				Water Requirement	8.734	gal/sack
8.73	gal/sack	Field (Fresh) Water	Lab	05.03.18	3-1-18	Total Mix Fluid	8.734	gal/sack
25	% BWOC	SS-200 silica flour	Bulk Blend	27.03.18				
0.1	% BWOC	SA-1015 (PB)	Bulk Blend	27.03.18	7133023w			
0.25	% BWOC	HR-5 (PB)	Bulk Blend	27.03.18	1170218	Water Source	Field (Fresh) Water	
0.8	% BWOC	HALAD-344 (PB)	Bulk Blend	27.03.18	20180145			
0.2	% BWOC	HALAD-413 (PB)	Bulk Blend	27.03.18		Water Chloride		

These are draft results and have not been approved for final use.

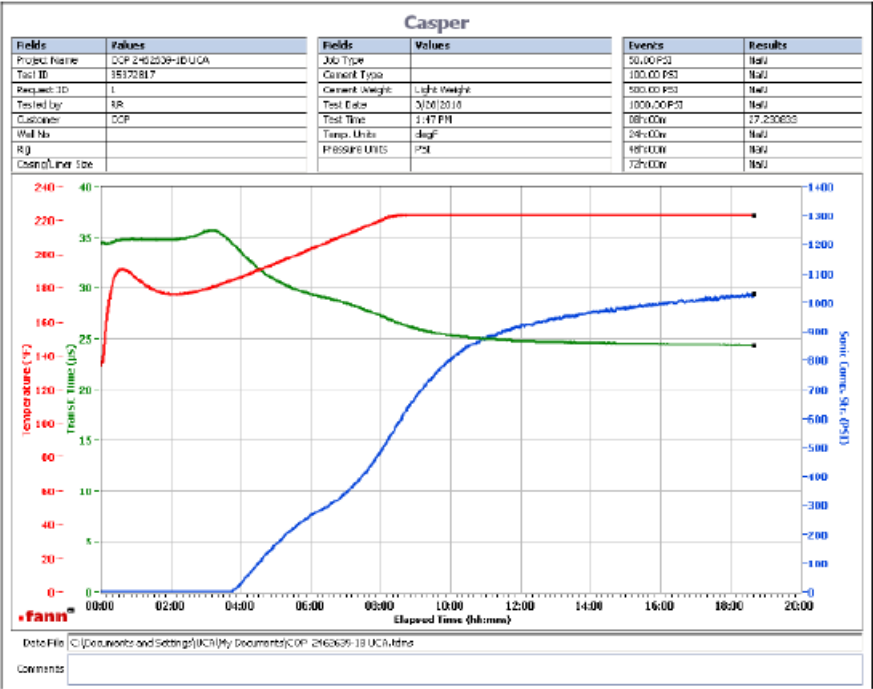
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Thickening Time - ON-OFF-ON

Test Temp (degF)	Pressure (psi)	Reached in (min)	30 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	Start Bc	Stirring before stop (mins)	Static Period (min)
219	4829	73	4:48	4:51	4:52	14	90	10



Operation Test Results Request ID 2462639/1								
UCA Comp. Strength								24/MAR/2018
End Temp (degF)	Pressure (psi)	50 psi (hh:mm)	100 psi (hh:mm)	500 psi (hh:mm)	1000 psi(hh:mm)	8hr CS (psi)	12 hr CS (psi)	16 hr CS (psi)
223	800	4:08	4:29	8:03	16:13	490.5	919.1	997



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7.0 Production Casing Real-Time Job Summary

7.1 Job Event Log

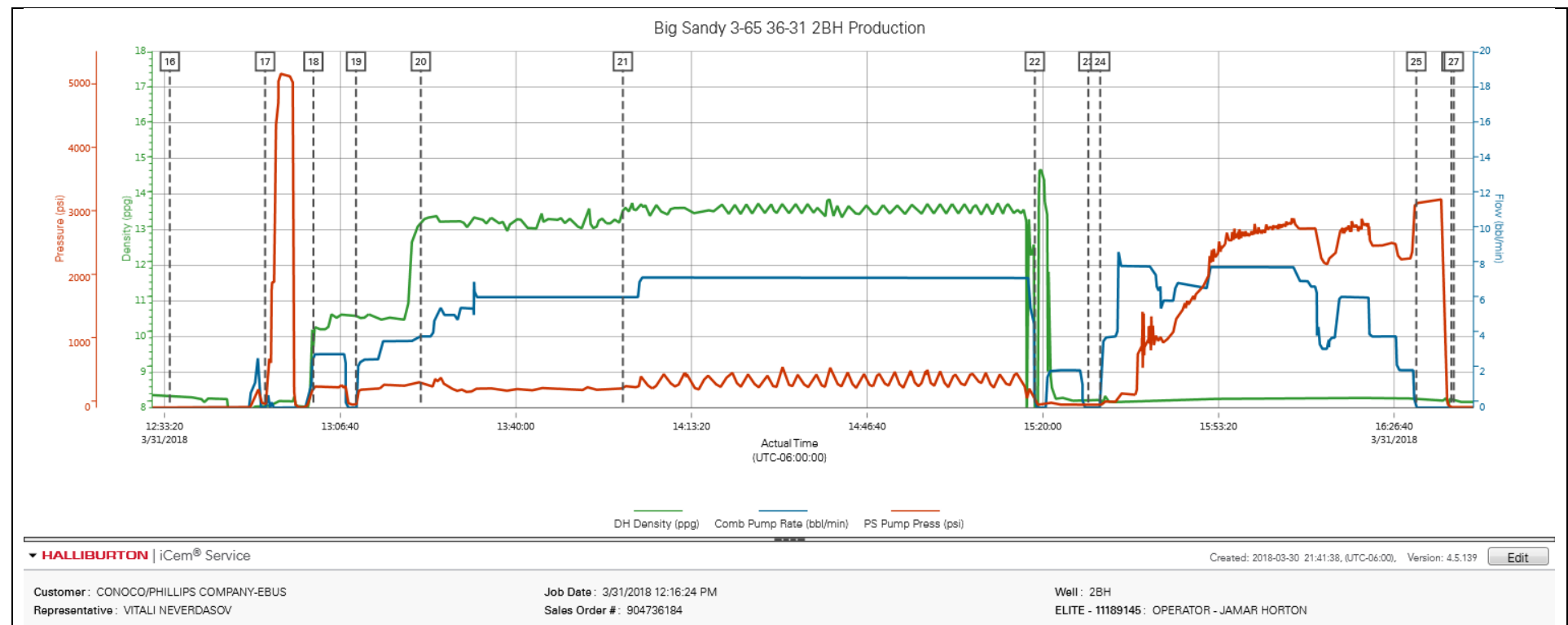
Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Comments
Event	1	Call Out	Call Out	3/30/2018	19:00:00	USER				ON LOCATION @ 01:00
Event	2	Depart Yard Safety Meeting	Depart Yard Safety Meeting	3/30/2018	22:00:00	USER				CREW DISCUSSED HAZARDS ALONG ROUTE OF TRAVEL. BEGAIN JOURNEY MANAGEMENT
Event	3	Depart Shop for Location	Depart Shop for Location	3/30/2018	23:05:00	USER				CALLED JORNEY
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	3/30/2018	23:55:00	USER				33 MILES. DISCUSS NUMBERS AND JOB PROCEDURE WITH CUSTOMER. RIG IS RUNNING CASING
Event	5	Other	Other	3/31/2018	00:10:00	USER				SPOT TRUCKS EXCEPT FOR SECONDARY PUMP/ CASING TRUCK IS ON THE WAY.
Event	6	Safety Meeting - Pre Rig-Up	Safety Meeting - Pre Rig-Up	3/31/2018	00:20:00	USER				HELD PRE RIG UP JSA
Event	7	Rig-Up Equipment	Rig-Up Equipment	3/31/2018	00:30:00	USER				RIG UP BULK AND WATER
Event	8	Casing on Bottom	Casing on Bottom	3/31/2018	06:03:00	USER				CASING LANDED / RIG IS RIGGING DOWN CASING CREW
Event	9	Other	Other	3/31/2018	06:30:00	USER				SPOT SECONDARY PUMP / CEMENT CREW FINISHING RIGGING UP TO THE STAND PIPE
Event	10	Other	Other	3/31/2018	07:26:00	USER				RIG UP FLOOR SAFETY MEETING WITH RIG CREW AND HES PERSONEL.
Event	11	Other	Other	3/31/2018	08:00:00	USER				COULD NOT START AUXILIARY ENGINE ON THE PRIMARY PUMP.
Event	12	Other	Other	3/31/2018	08:20:00	USER				CALLED MECHANIC AND PER CUSTOMER REQUEST CALLED FOR ANOTHER PUMP.
Event	13	Other	Other	3/31/2018	10:20:00	USER				MECHANIC ARRIVED ON LOCATION. DISCOVERED PUMP TRUCK IS OUT OF FUEL.
Event	14	Other	Other	3/31/2018	10:30:00	USER				SEND OPERATOR TO THE NEAREST GAS STATION TO

FUEL UP THE TRUCK.

Event	15	Other	Other	3/31/2018	11:50:00	USER				TRUCK CAME BACK REFUELED
Event	16	Start Job	Start Job	3/31/2018	12:34:20	COM4	8.31	0.00	0.00	BEGIN RECORDING JOB DATA
Event	17	Test Lines	Test Lines	3/31/2018	12:52:25	COM4	8.03	0.00	58.00	LOAD AND TEST LINES TO 5125 PSI
Event	18	Pump Spacer 1	Pump Spacer 1	3/31/2018	13:01:35	COM4	9.73	3.00	336.00	BATCH/ WEIGH/PUMP 60 BBLS OF TUNED SPACER WITH SURFACTANS @ 10.5 PPG
Event	19	Drop Bottom Plug	Drop Bottom Plug	3/31/2018	13:09:40	COM4	10.58	0.00	48.00	DROP BOTTOM PLUG 20 BBLS INTO TUNED SPACER
Event	20	Pump Lead Cement	Pump Lead Cement	3/31/2018	13:21:58	COM4	13.18	4.00	388.00	WEIGH/ PUMP 835 SKS (233.5 BBLS) OF ELASTICEM @ 13.2 PPG
Event	21	Pump Tail Cement	Pump Tail Cement	3/31/2018	14:00:19	COM4	13.54	6.20	311.00	WEIGH/ PUMP 1565 SKS (498.9 BBLS) OF ECONOCEM @ 13.5 PPG
Event	22	Shutdown	Shutdown	3/31/2018	15:18:28	COM4	10.49	0.00	118.00	SHUTDOWN TO WASH PUMPS AND LINES
Event	23	Drop Top Plug	Drop Top Plug	3/31/2018	15:28:38	USER	8.21	0.00	39.00	DROP TOP PLUG
Event	24	Pump Displacement	Pump Displacement	3/31/2018	15:30:53	COM4	8.21	0.00	39.00	PUMP FRESH WATER DISPLACEMENT WITH CLA-WEB AND BIOCID. FIRST 40 BBLS WITH MMCR.
Event	25	Bump Plug	Bump Plug	3/31/2018	16:30:51	COM4	8.23	0.00	3151.00	BUMP PLUG AT 2290 PSI, PRESSURED UP TO 3150 PSI AND HELD FOR 5 MINUTES.
Event	26	Check Floats	Check Floats	3/31/2018	16:37:31	USER	8.26	0.00	7.00	FLOATS HELD, 3.5 BBLS BACK TO THE TRUCK
Event	27	End Job	End Job	3/31/2018	16:37:59	COM4				
Event	28	Safety Meeting - Pre Rig-Down	Safety Meeting - Pre Rig-Down	3/31/2018	16:52:34	USER	8.17	0.00	4.00	PRE-RIG DOWN SAFETY MEETING
Event	29	Depart Location	Depart Location	3/31/2018	19:30:00	USER				CALL JOURNEY AND DEPART LOCATION

8.0 Production Casing Attachments

8.1 Big Sandy 3-65 36-31 2BH Production – Job Chart with Events



8.2 Big Sandy 3-65 36-31 2BH Production – Job Chart without Events

