

# HALLIBURTON

iCem<sup>®</sup> Service

## **CONOCO/PHILLIPS COMPANY EBUSINESS**

Date: Wednesday, April 11, 2018

**End of Well Report**  
**Big Sandy 3-65 36-31 1DH**

Job Date: Saturday, April 07, 2018

Sincerely,  
**Bryce Hinsch**

## Legal Notice

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## 1.0 Surface Casing Cementing Job Summary

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### 1.1 Executive Summary

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Halliburton appreciates the opportunity to perform the cementing services on the **Big Sandy 3-65 36-31 1DH** 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 95 barrels 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]**

## HALLIBURTON

## Cementing Job Summary

## The Road to Excellence Starts with Safety

Sold To #: 352431	Ship To #: 3848225	Quote #: 0022398311	Sales Order #: 0904669682							
Customer: CONOCO/PHILLIPS COMPANY-EBUS		Customer Rep: Richard Perez								
Well Name: BIG SANDY 3-65 36-31	Well #: 1DH	API/UWI #: 05-001-10102-00								
Field: WILDCAT	City (SAP): AURORA	County/Parish: ADAMS	State: COLORADO							
Legal Description: NE SE-35-3S-85W-2465FSL-465FEL										
Contractor: NABORS DRILLING		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	2090ft	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	2090		
Casing		9.625	8.921	36	LTC	J-55	0	2078.5		
Open Hole Section			13.5				1522	2090		
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	9.625	1	HES	2078.5		Top Plug	9.625	1	HES	
Float Shoe	9.625					Bottom Plug	9.625	1	HES	
Float Collar	9.625	1				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 ft <sup>3</sup> /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				
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 <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	

last updated on 3/14/2018 2:36:48 PM

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(v. 4.2.393)

Created: Wednesday, March 14, 2018

HALLIBURTON

*Cementing Job Summary*

2	SwiftCem	SWIFTCEN (TM) SYSTEM	455	sack	12	2.57		6	15.14
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
3	SwiftCem	SWIFTCEN (TM) SYSTEM	250	sack	14.2	1.59		6	7.9
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
4	Displacement	Displacement	157	bbl	8.33			6	
Cement Left In Pipe		Amount	45 ft		Reason			Shoe Joint	
Comment									

## 2.0 Surface Casing Lab Reports

## HALLIBURTON

## Rockies, Brighton

## Lab Results- Lead

## Job Information

Request/Slurry	2456496/1	Rig Name	H & P 448	Date	24/FEB/2018
Submitted By	Julia Nichols	Job Type	Surface Casing	Bulk Plant	Brighton
Customer	ConocoPhillips	Location		Well	Big Sandy 3-65 36-31 1DH

## 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

## Cement Properties

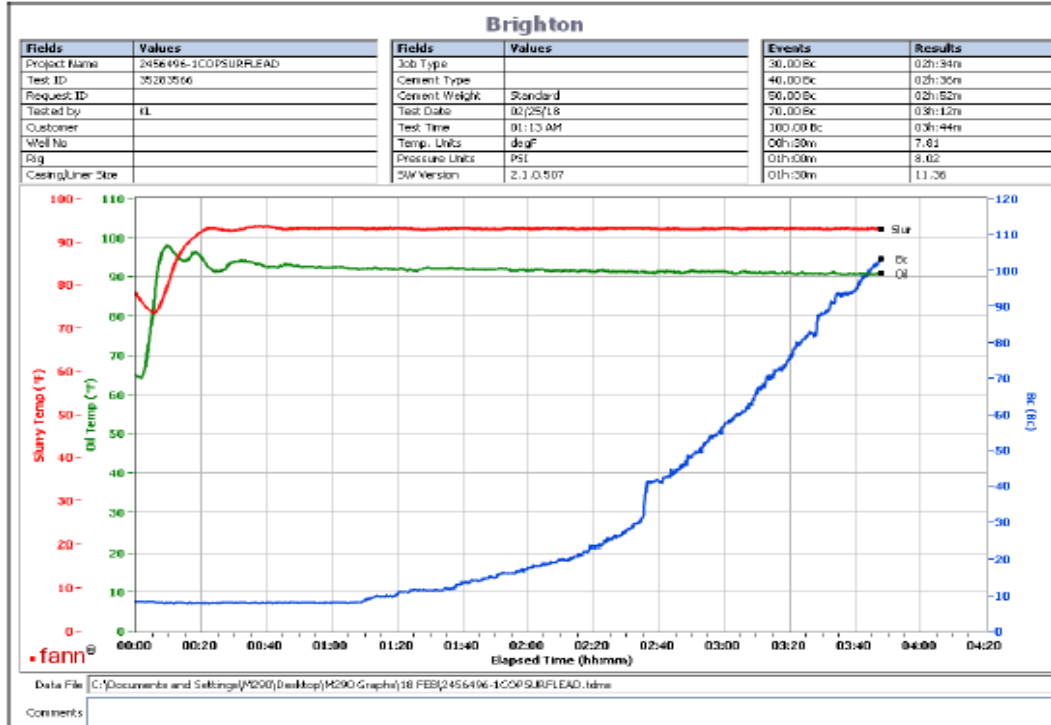
Slurry Density	12	lbm/gal
Slurry Yield	2.57	ft <sup>3</sup> /sack
Water Requirement	15.14	gal/sack

## Operation Test Results Request ID 2456496/1

## Thickening Time

24/FEB/2018

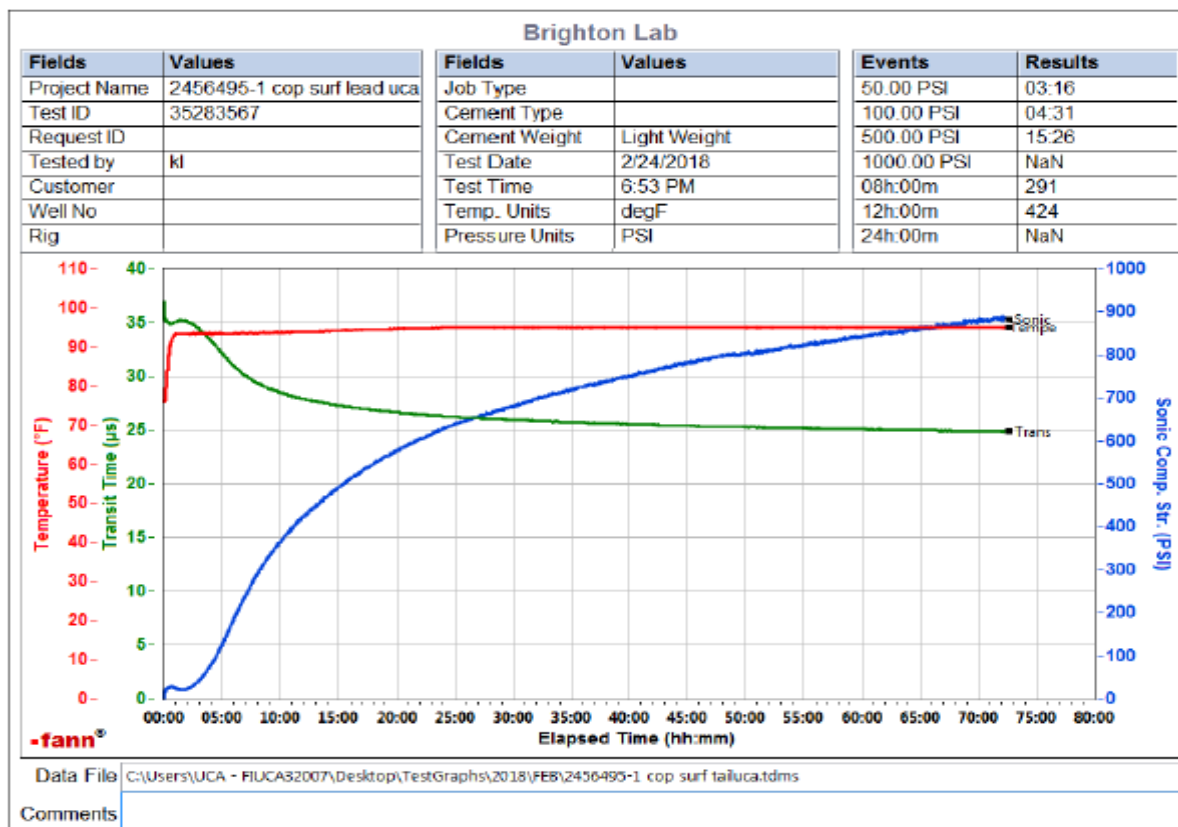
Temp (degF)	Pressure (psi)	Reached in (min)	Start BC	30 Bc (hh:mm)	40 Bc (hh:mm)	50 Bc (hh:mm)	70 Bc (hh:mm)	100 Bc (hh:mm)
93	1250	17	8	2:34	2:36	2:52	3:12	3:44



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## UCA Comp. Strength

24/FEB/2018



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## HALLIBURTON

Rockies, Brighton

## Lab Results- Tail

## Job Information

Request/Slurry	2456497/1	Rig Name	H & P 448	Date	24/FEB/2018
Submitted By	Julia Nichols	Job Type	Surface Casing	Bulk Plant	Brighton
Customer	ConocoPhillips	Location		Well	Big Sandy 3-65 36-31 1DH

## 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

## Cement Properties

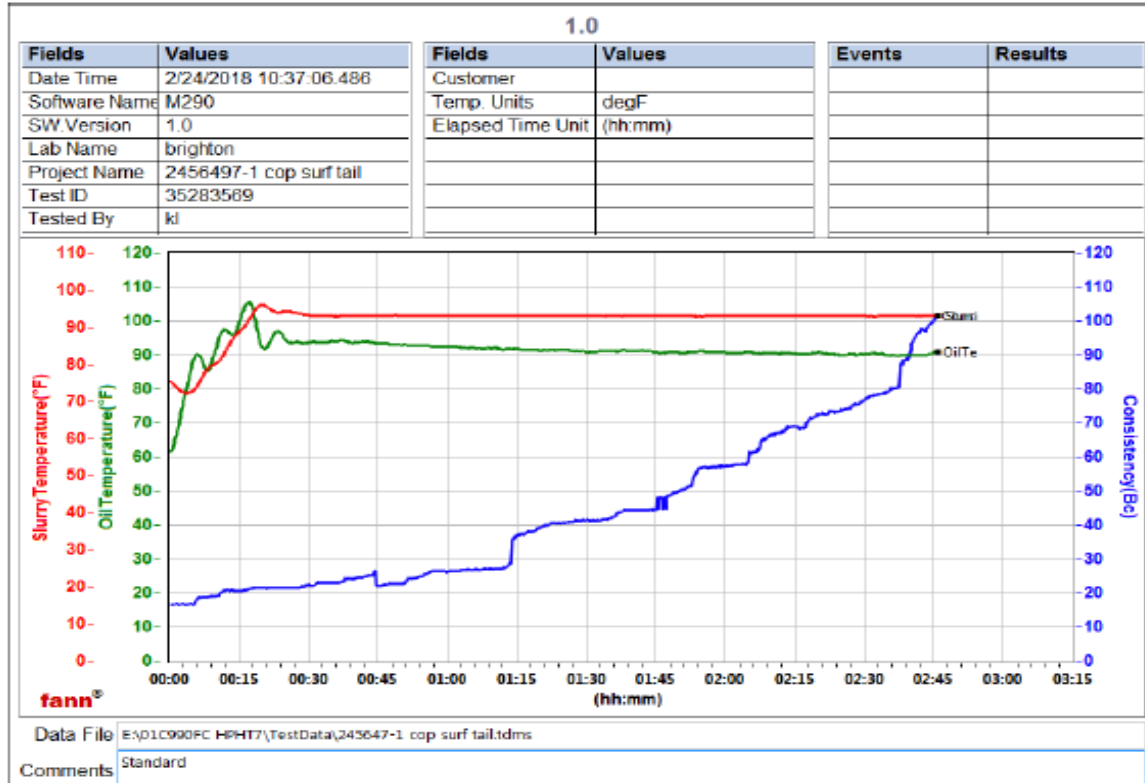
Slurry Density	14.2	lbm/gal
Slurry Yield	1.59	ft <sup>3</sup> /sack
Water Requirement	7.90	gal/sack

## Operation Test Results Request ID 2456497/1

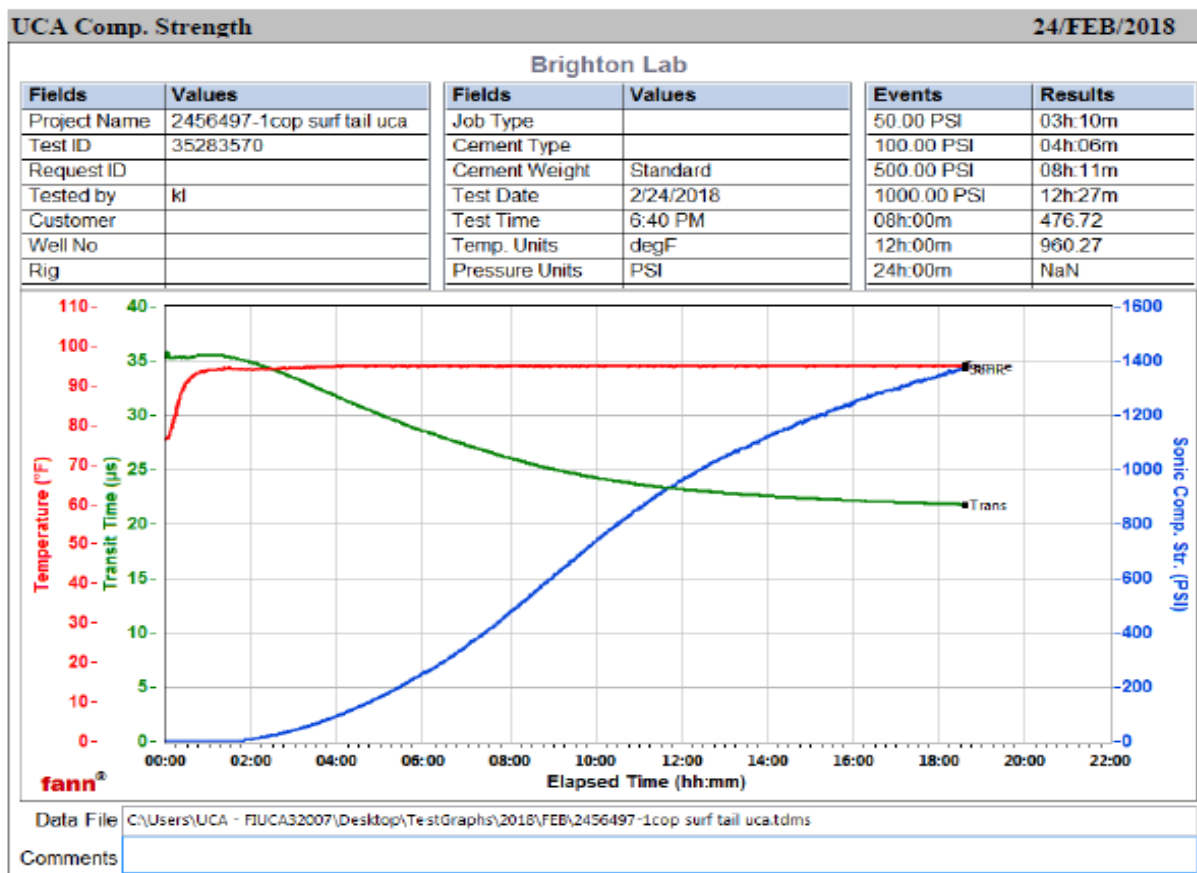
## Thickening Time

24/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	17	1:14	1:22	1:48	2:18	2:45



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## 3.0 Surface Casing Real-Time Job Summary

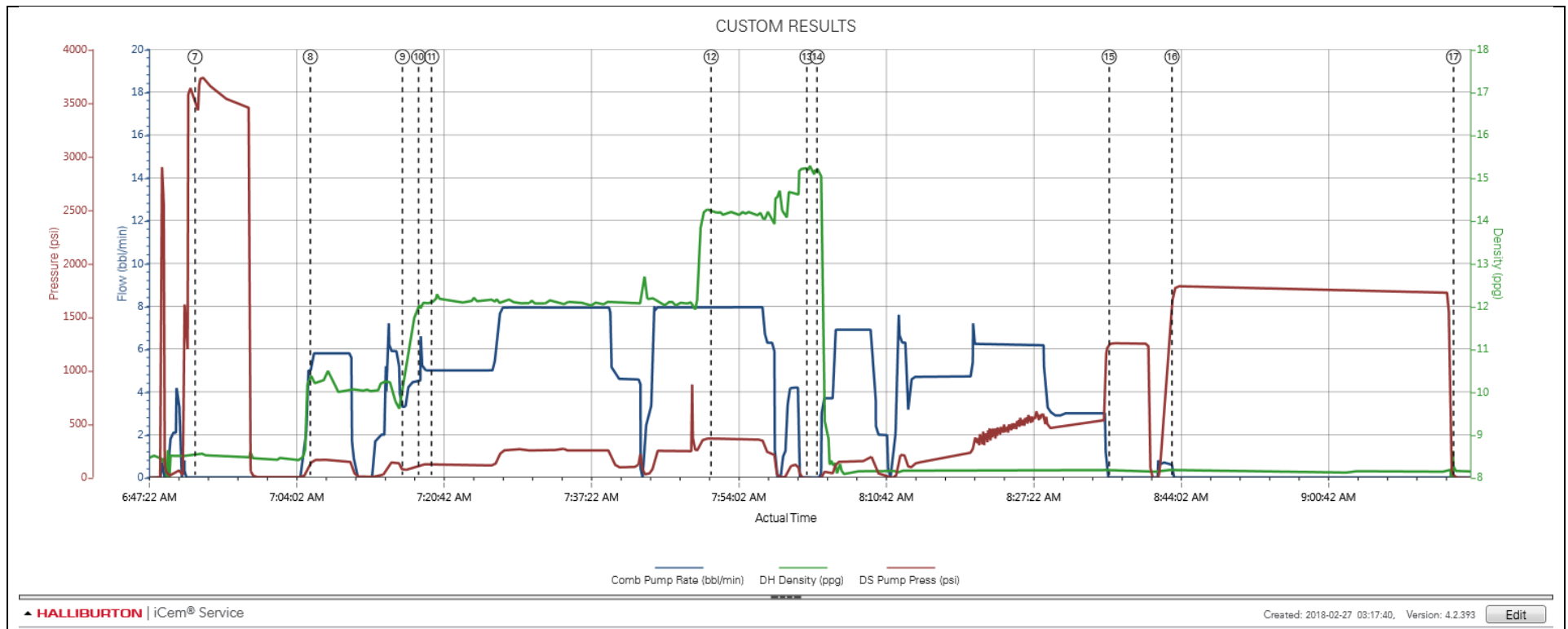
## 3.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Comb Pump Rate (bbl/min)	DH Density (ppg)	DS Pump Press (psi)	Comments
Event	1	Call Out	Call Out	2/26/2018	18:30:00	USER				Called crew out to be on location at 0030
Event	2	Depart Shop for Location	Depart Shop for Location	2/26/2018	22:30:00	USER				Held a safety meeting before leaving location
Event	3	Arrive At Loc	Arrive At Loc	2/26/2018	23:45:00	USER				Arrived on location and met with the company man and safety. 3 EEs had to go through safety orientation.
Event	4	Rig-up Lines	Rig-up Lines	2/27/2018	01:00:00	USER				Held a hazard hunt before spotting in trucks and rigging up.
Event	5	Safety Meeting	Safety Meeting	2/27/2018	06:15:00	USER	0.00	0.00	41.00	Held a safety meeting with the rig crew to discuss the operation and safety.
Event	6	Start Job	Start Job	2/27/2018	06:42:16	COM5	0.00	8.50	-47.00	Filled lines with 3 bbls water
Event	7	Test Lines	Test Lines	2/27/2018	06:52:48	COM5	0.00	8.53	3438.00	Tested lines with the 500 psi kick out then 5th gear stall out. Then walked it up to 3500 psi.
Event	8	Pump Spacer 1	Pump Spacer 1	2/27/2018	07:05:50	COM5	5.80	10.13	156.00	Pumped 50 bbls Tuned Spacer, 10#, 8.82 yield, 60.4 gal/sks
Event	9	Drop Bottom Plug	Drop Bottom Plug	2/27/2018	07:16:16	COM5	3.30	10.29	65.00	Dropped bottom plug and witnessed by the company man
Event	10	Pump Lead Cement	Pump Lead Cement	2/27/2018	07:18:05	COM5	5.30	12.09	122.00	Pumped 208.26 bbl Swiftcem 455 sks, 12#, 2.57 yield, 15.14 gal/sks. Pumped 8 bpm at 270 psi. Shut down several times filling the conductor
Event	11	Check Weight	Check weight	2/27/2018	07:19:33	COM5	5.00	12.11	116.00	Verified weight with pressurized scales.
Event	12	Pump Tail Cement	Pump Tail Cement	2/27/2018	07:51:09	COM5	7.90	14.23	376.00	Pumped 70.79 bbls swiftcem 250 sks, 14.2#, 1.59 yield, 7.9 gal/sks. Pumped 6 bpm at 265 psi. Shut down several times filling the conductor
Event	13	Shutdown	Shutdown	2/27/2018	08:02:00	USER	0.00	15.31	-13.00	Shut down and washed cement head and lines
Event	14	Drop Top Plug	Drop Top Plug	2/27/2018	08:03:09	COM5	0.00	15.24	-13.00	Dropped top plug and witnessed by the company man

Event	15	Bump Plug	Bump Plug	2/27/2018	08:36:11	COM5	0.00	8.17	1255.00	Displaced 157 bbls water. Bumped plug 580 psi kick out 1080 psi, climbed to 1322 psi while holding it for 5 mins. Checked floats and they held and we got 1 bbl back on the truck. Shut down and slowed down several time filling the conductor.
Event	16	Pressure Up Well	Pressure Up Well	2/27/2018	08:43:16	COM5				Pressured up on the well for a 1800 psi 30 min casing test. After 30 mins it fell to 1772 psi
Event	17	End Job	End Job	2/27/2018	09:15:07	COM5				
Event	18	Rig Down Lines	Rig Down Lines	2/27/2018	09:35:00	USER	0.00	8.19	0.00	Held a safety meeting with the rig to discuss the rig down
Event	19	Depart Location	Depart Location	2/27/2018	11:00:00	USER				Held a safety huddle before leaving location

## 4.0 Surface Casing Attachments

### 4.1 CUSTOM RESULTS – JOB CHART WITH EVENTS

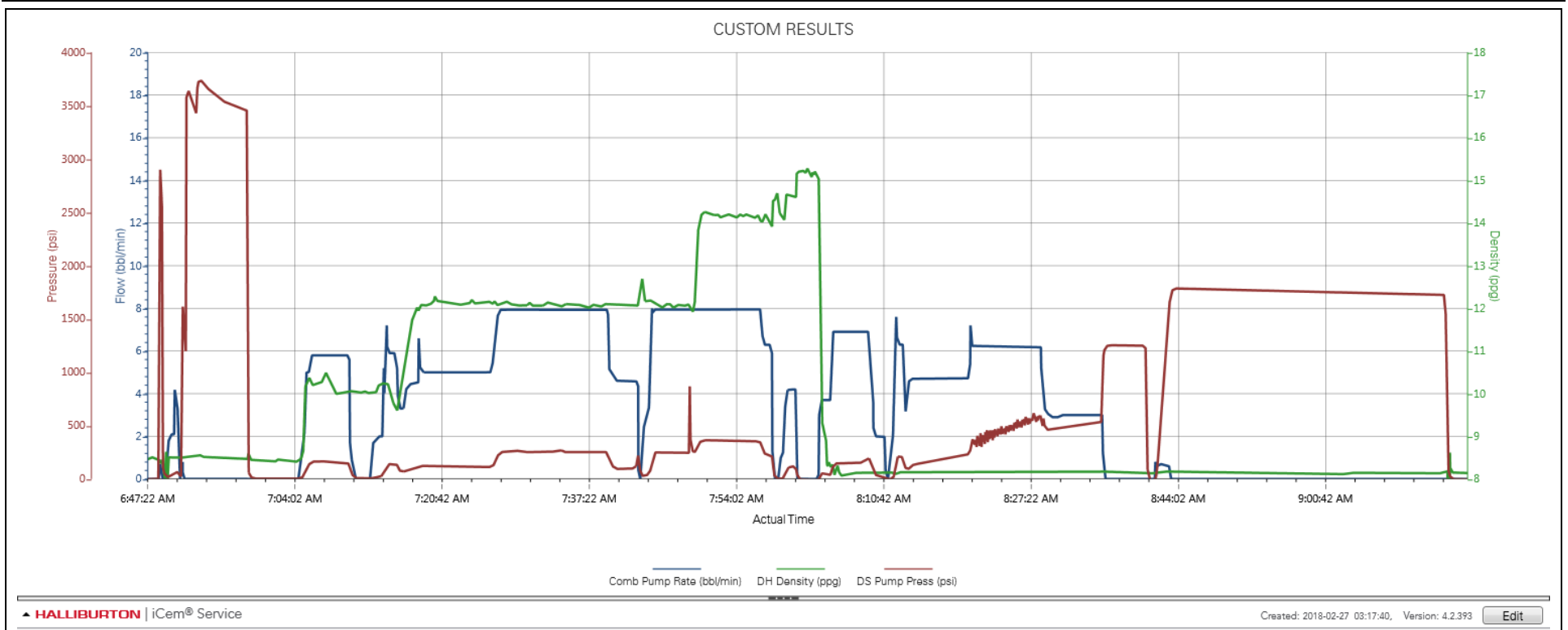


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Created: Wednesday, April 11, 2018

## 4.2 CUSTOM RESULTS – JOB CHART WITHOUT EVENTS



## 5.0 Production Casing Cementing Job Summary

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### 5.1 Executive Summary

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Halliburton appreciates the opportunity to perform the cementing services on the **Big Sandy 3-65 36-31 1DH** 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 15 bbls of spacer 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]**

*The Road to Excellence Starts with Safety*

<b>Sold To #:</b> 352431		<b>Ship To #:</b> 3848225		<b>Quote #:</b> 0022397829		<b>Sales Order #:</b> 0904758141					
<b>Customer:</b> CONOCO/PHILLIPS COMPANY-EBUS				<b>Customer Rep:</b> Eric Witt							
<b>Well Name:</b> BIG SANDY 3-65 36-31			<b>Well #:</b> 1DH		<b>API/UWI #:</b> 05-001-10102-00						
<b>Field:</b> WILDCAT		<b>City (SAP):</b> AURORA		<b>County/Parish:</b> ADAMS		<b>State:</b> COLORADO					
<b>Legal Description:</b> NE SE-35-3S-65W-2465FSL-465FEL											
<b>Contractor:</b> NABORS DRILLING				<b>Rig/Platform Name/Num:</b> NABORS B16							
<b>Job BOM:</b> 7523 7523											
<b>Well Type:</b> HORIZONTAL OIL											
<b>Sales Person:</b> HALAMERICA\HB41307				<b>Srvc Supervisor:</b> Nicholas Roles							
<b>Job</b>											
<b>Formation Name</b>											
<b>Formation Depth (MD)</b>		<b>Top</b>		<b>Bottom</b>							
<b>Form Type</b>					<b>BHST</b>						
<b>Job depth MD</b>		15385ft			<b>Job Depth TVD</b>						
<b>Water Depth</b>					<b>Wk Ht Above Floor</b>						
<b>Perforation Depth (MD)</b>		<b>From</b>		<b>To</b>							
<b>Well Data</b>											
<b>Description</b>	<b>New / Used</b>	<b>Size in</b>	<b>ID in</b>	<b>Weight lbm/ft</b>	<b>Thread</b>	<b>Grade</b>	<b>Top MD ft</b>	<b>Bottom MD ft</b>	<b>Top TVD ft</b>	<b>Bottom TVD ft</b>	
Casing		9.625	8.921	36	LTC	J-55	0	2080		2080	
Casing		5.5	4.67	23	TXP-BTC	P-110	0	15385		8111	
Open Hole Section			8.5				2080	6365	2080	6365	
Open Hole Section			8.5				6365	15399	6365	8111	
<b>Tools and Accessories</b>											
<b>Type</b>	<b>Size in</b>	<b>Qty</b>	<b>Make</b>	<b>Depth ft</b>		<b>Type</b>	<b>Size in</b>	<b>Qty</b>	<b>Make</b>		
Guide Shoe	5.5			15385		Top Plug	5.5		HES		
Float Shoe	5.5					Bottom Plug	5.5		HES		
Float Collar	5.5					SSR plug set	5.5		HES		
Insert Float	5.5					Plug Container	5.5	1	HES		
Stage Tool	5.5					Centralizers	5.5		HES		
<b>Fluid Data</b>											
<b>Stage/Plug #: 1</b>											
<b>Fluid #</b>	<b>Stage Type</b>	<b>Fluid Name</b>			<b>Qty</b>	<b>Qty UoM</b>	<b>Mixing Density lbm/gal</b>	<b>Yield ft<sup>3</sup>/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/min</b>	<b>Total Mix Fluid Gal</b>
1	10.5 lb/gal Tuned Spacer III	Tuned Spacer III			60	bbl	10.5	6.47		4	
0.10 gal/bbl		<b>D-AIR 3000L, 5 GAL PAIL (101007444)</b>									



0.60 gal/bbl	<b>MUSOL A, 330 GAL TOTE - (790828)</b>
37.58 gal/bbl	<b>FRESH WATER</b>
86.45 lbm/bbl	<b>BARITE, BULK (100003681)</b>
0.60 gal/bbl	<b>DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)</b>

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		8	7.54
24.50 lbm		<b>POZMIX A FLYASH (100003690)</b>							

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	EconoCern	ECONOCERN (TM) SYSTEM	1160	sack	13.5	1.79		8	8.74
0.25 %		HR-5, 50 LB SK (100005050)							
8.72 Gal		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
4	MMCR Displacement	MMCR Displacement	40	bbl	8.34			10	
0.50 gal/bbl		<b>MICRO MATRIX CEMENT RETARDER, 5 GAL PAIL (100003781)</b>							

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	280	bbl	8.33			10	

Cement Left In Pipe	Amount	96 ft	Reason	Shoe Joint
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Got 15bbls Spacer back. Estimated TOT-6365' TOL-869'

## 6.0 Production Casing Lab Reports

## HALLIBURTON

Rockies, Brighton

## Lab Results- Lead

## Job Information

Request/Slurry	2464333/2	Rig Name	Nabors B16	Date	01/APR/2018
Submitted By	Bryce Hinsch	Job Type	Production Casing	Bulk Plant	Brighton
Customer	ConocoPhillips	Location	Weld	Well	Big Sandy 3-65 36-31 1DH

## Well Information

Casing/Liner Size	5.5 in	Depth MD	15387 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

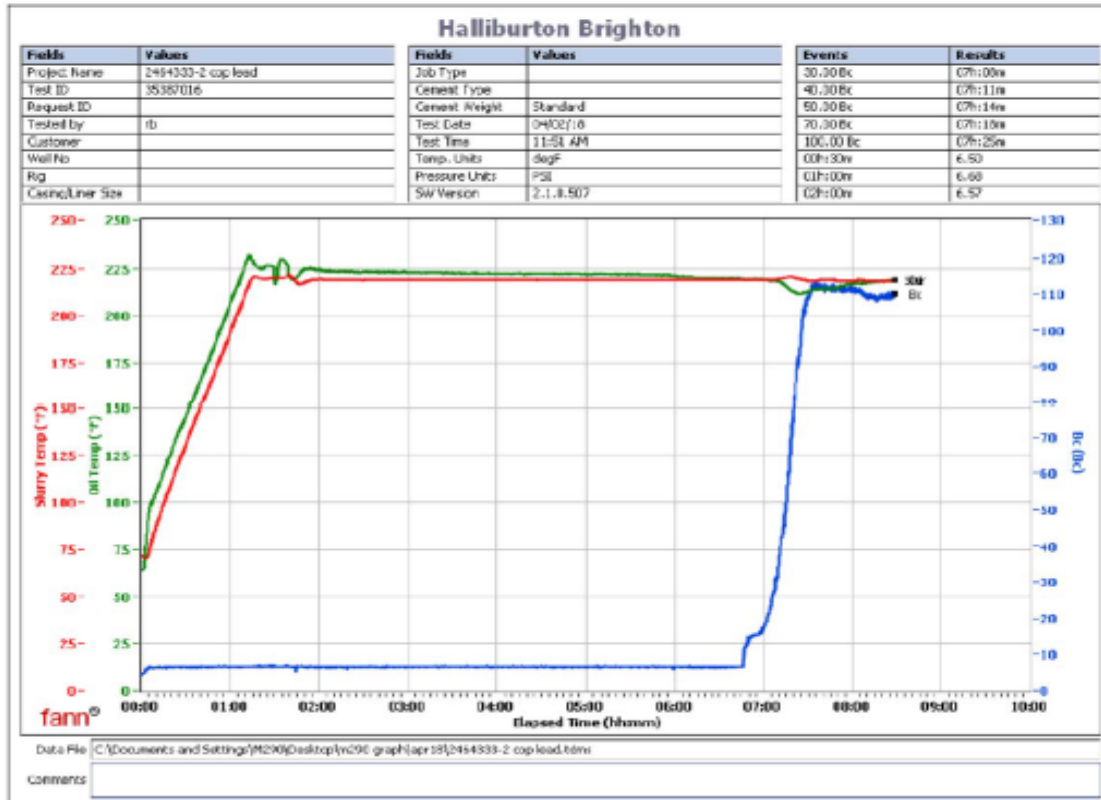
Conc	UOM	Cement/Additive	Sample Type	Sample Date	Lot No.	Cement Properties	
35	%	> Boral Craig Pozmix	Bulk Blend	03.04.18		Slurry Density	13.2 lbm/gal
65	%	> Cemex Type I-II	Bulk Blend	03.04.18	2	Slurry Yield	1.569 ft <sup>3</sup> /sack
100	% BWOC	Cement Blend				Water Requirement	7.538 gal/sack
7.54	gal/sack	Field (Fresh) Water				Total Mix Fluid	7.538 gal/sack
5	lb/sk	WellLife 708 (PB)	Bulk Blend	03.04.18			
0.1	% BWOC	SA-1015 (PB)	Bulk Blend	03.04.18	7j3075w		
0.3	% BWOC	SCR-100 (PB)	Bulk Blend	03.04.18	cr18b19012	Water Source	Field (Fresh) Water
1	lb/sk	Silicalite - Compacted	Bulk Blend	03.04.18		Water Chloride	N/A
0.2	% BWOC	HALAD-344 (PB)	Bulk Blend	03.04.18	vc8a065fpr		

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

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**Operation Test Results Request ID 2464333/2****Thickening Time - ON-OFF-ON****03/APR/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	7:08	7:14	7:18	7:25	5	90	10	6.6



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

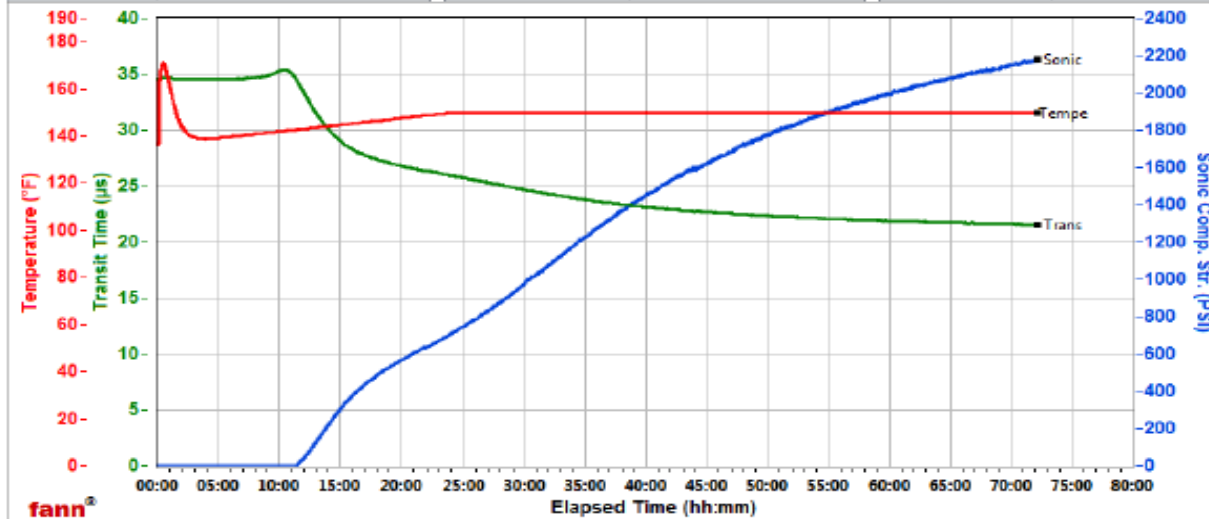
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**Operation Test Results Request ID 2464333/1****UCA Comp. Strength****01/APR/2018**

End Temp (degF)	Pressure (psi)	50 psi (hh:mm)	100 psi (hh:mm)	8hr CS (psi)	12 hr CS (psi)
150	800	12:08	12:43	0	39.62

**Brighton Lab**

Fields	Values	Fields	Values	Events	Results
Project Name	2464333-1 cop Id uca	Job Type		50.00 PSI	12h:08m
Test ID	35382958	Cement Type		100.00 PSI	12h:43m
Request ID		Cement Weight	Light Weight	500.00 PSI	18h:22m
Tested by	kl	Test Date	4/3/2018	1000.00 PSI	30h:22m
Customer		Test Time	4:47 PM	08h:00m	0.00
Well No		Temp. Units	degF	12h:00m	39.62
Rig		Pressure Units	PSI	24h:00m	707.59



Data File C:\Users\UCA - FIUCA32007\Desktop\TestGraphs\2018\mar\2464333-1 cop Id uca.tdms

Comments

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**HALLIBURTON**

Rockies, Brighton

**Lab Results- Tail****Job Information**

Request/Slurry	2464334/2	Rig Name	Nabors B16	Date	01/APR/2018
Submitted By	Bryce Hinsch	Job Type	Production Casing	Bulk Plant	Brighton
Customer	ConocoPhillips	Location	Weld	Well	Big Sandy 3-65 36-31 1DH

**Well Information**

Casing/Liner Size	5.5 in	Depth MD	15387 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**

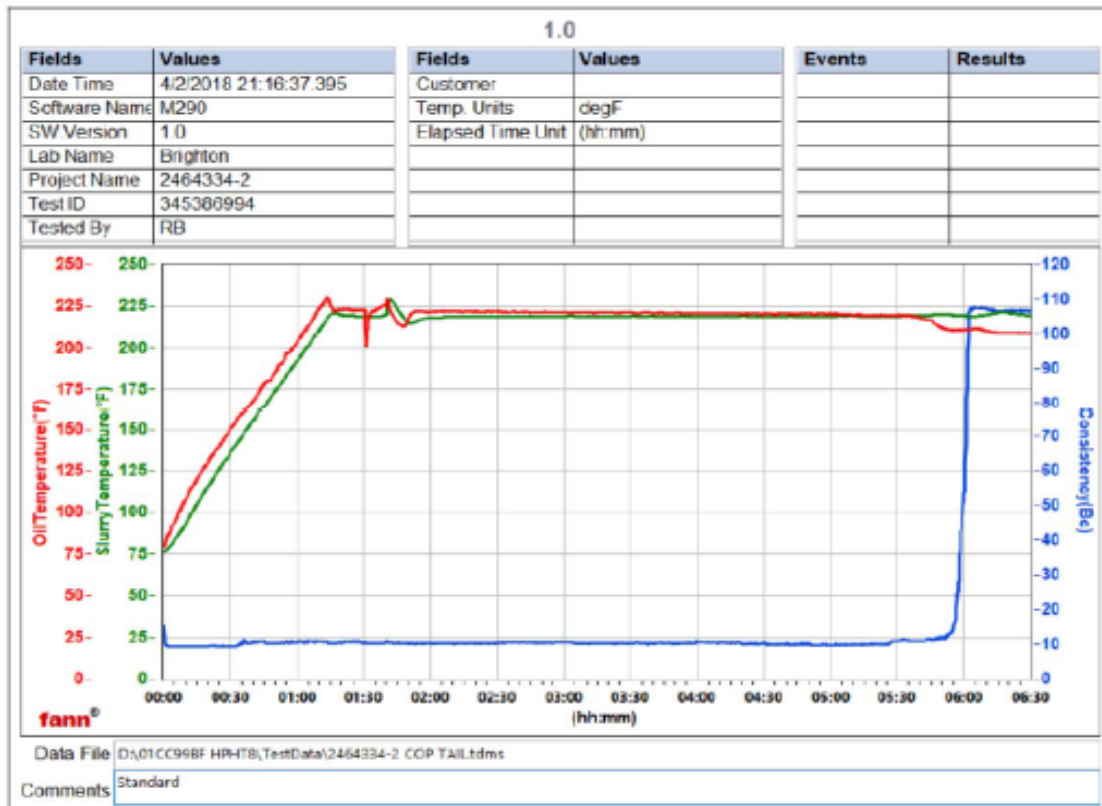
Conc	UOM	Cement/Additive	Sample Type	Sample Date	Lot No.	Cement Properties	
35	%	> Boral Craig Pozmix	Bulk Blend	03.04.18		Slurry Density	13.5 lbm/gal
65	%	> Cemex Type I-II	Bulk Blend	03.04.18	2	Slurry Yield	1.791 ft <sup>3</sup> /sack
100	% BWOC	Cement Blend				Water Requirement	8.734 gal/sack
8.73	gal/sack	Field (Fresh) Water				Total Mix Fluid	8.734 gal/sack
25	% BWOC	SS-200 silica flour	Bulk Blend	03.04.18			
0.1	% BWOC	SA-1015 (PB)	Bulk Blend	03.04.18	7j3075w		
0.25	% BWOC	HR-5 (PB)	Bulk Blend	03.04.18	1170218	Water Source	Field (Fresh) Water
0.8	% BWOC	HALAD-344 (PB)	Bulk Blend	03.04.18	vc8a065fpr		
0.2	% BWOC	HALAD-413 (PB)	Bulk Blend	03.04.18		Water Chloride	N/A

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**Operation Test Results Request ID 2464334/2****Thickening Time - ON-OFF-ON****03/APR/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	5:57	5:59	6:00	6:02	11	90	10	10.7



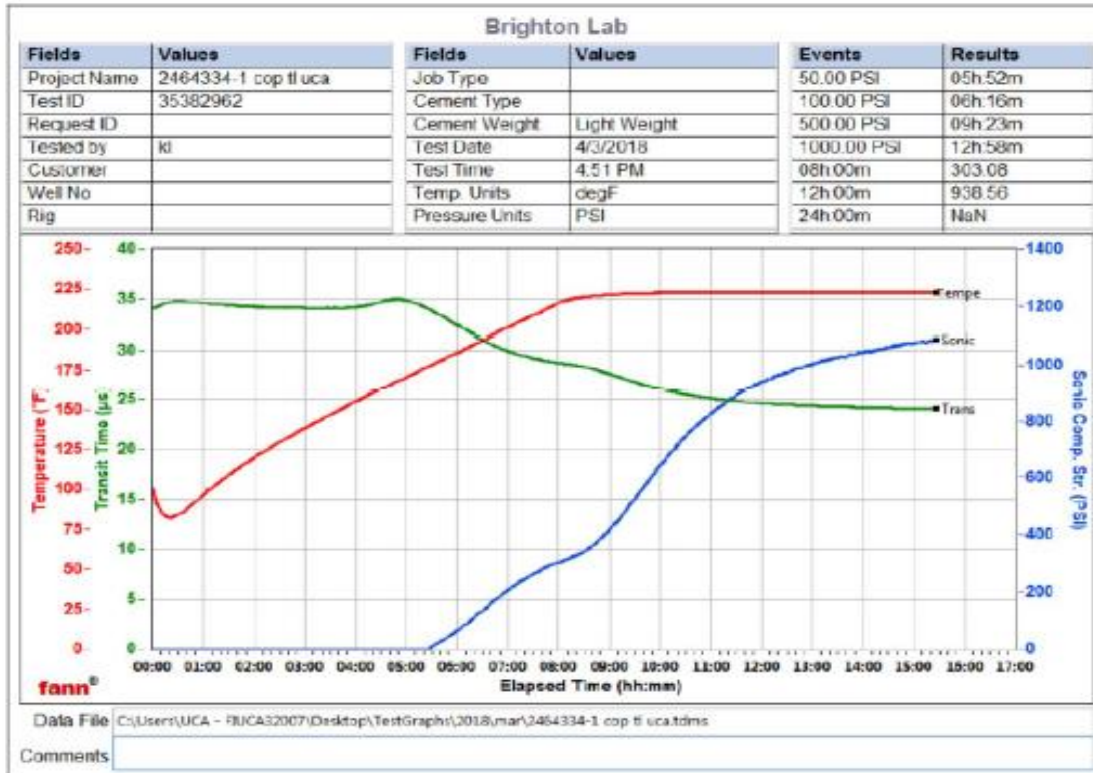
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**Operation Test Results Request ID 2464334/1****UCA Comp. Strength****01/APR/2018**

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)
223	800	5:52	6:16	9:23	12:58	303	938



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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)	DS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	Call Out	4/6/2018	19:30:00	USER					Called out by Service Coordinator for O/L at 0000
Event	2	Depart Yard Safety Meeting	Depart Yard Safety Meeting	4/6/2018	23:45:00	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	4/7/2018	00:00:00	USER					Journey Management prior to departure
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	4/7/2018	00:45:00	USER					Upon arrival met with company man to discuss job details and calculations, performed hazard hunt and site assessment. Rig had 2500' casing left to run.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	4/7/2018	01:00:00	USER					Discussed rigging up hazards and procedure according to HMS.
Event	6	Other	Other	4/7/2018	01:30:00	USER					Water test- PH-6, Chlor-0, Temp-85.
Event	7	Safety Meeting - Pre Job	Safety Meeting - Pre Job	4/7/2018	09:00:00	USER	0.00	0.00	-38.00	0.00	Held safety meeting with all job associated personnel to discuss job procedure, hazards and stop work authority.
Event	8	Start Job	Start Job	4/7/2018	10:23:05	COM4	8.58	0.00	127.00	30.80	TD-16826', TP-16811.9' 5.5" 23#, TVD-8104', OH-8.5", SURF-2279' 9.625" 36#, MUD-9.9#.



Event	9	Test Lines	Test Lines	4/7/2018	10:26:04	COM4	8.54	0.00	223.00	2.60	Pumped 4bbls fresh water to fill lines, closed manifold, performed 500psi k/o function test, followed with 5th gear stall at 1850psi, proceeded to bring pressure up to 4500psi. Held pressure and no leaks.
Event	10	Pump Spacer 1	Pump Spacer 1	4/7/2018	10:37:10	COM4	8.48	0.00	137.00	2.60	Pumped 60bbls of 10.5# 6.47y 41.7g/s Tuned Spacer III with 35g Dual Spacer B, 35g Musol-A and 5g D-Air at 4bpm 533psi
Event	11	Pump Lead Cement	Pump Lead Cement	4/7/2018	10:56:24	COM4	10.49	0.00	191.00	0.00	Pumped 835sks or 233.5bbls of 13.2# 1.57y 7.54g/s Elasticem at 8bpm 450psi
Event	12	Check Weight	Check Weight	4/7/2018	11:05:15	COM4	13.21	6.10	630.00	42.90	Weight verified with pressurized mud scales.
Event	13	Pump Tail Cement	Pump Tail Cement	4/7/2018	11:32:34	COM4	13.41	7.50	429.00	0.10	Pumped 1160sks or 370bbls of 13.5# 1.79y 8.74g/s Econocem at 8bpm 523psi.
Event	14	Check Weight	Check Weight	4/7/2018	11:35:24	COM4	13.46	7.50	481.00	21.30	Weight verified with pressurized mud scales.
Event	15	Drop Top Plug	Drop Top Plug	4/7/2018	12:35:40	COM4	8.29	0.00	180.00	430.00	Washed up and dropped top plug. Company representative witnessed.
Event	16	Pump Displacement	Pump Displacement	4/7/2018	12:35:49	COM4	8.29	0.00	182.00	0.00	Pump 320 bbls displacement with 20 gal MMCR in the first 40 bbls, then 1 bucket powder OxyGon, 2 barrels Baracor, and 15 gal Aldecide throughout the remainder of displacement.
Event	17	Shutdown	Shutdown	4/7/2018	12:52:08	USER	8.28	5.20	1843.00	123.10	Issues receiving water

Event	18	Shutdown	Shutdown	4/7/2018	13:18:41	USER	8.28	0.20	2668.00	297.90	Issues receiving water
Event	19	Bump Plug	Bump Plug	4/7/2018	13:32:03	COM4	8.30	0.00	3436.00	327.10	Slowed down at 300bbbls away to 2bpm, final circulating pressure- 2400psi, Bump Pressure- 3475psi.
Event	20	Check Floats	Check Floats	4/7/2018	13:37:13	USER	8.31	0.00	3319.00	327.10	Released pressure and got 3.5bbbls fresh water back. Floats held.
Event	21	End Job	End Job	4/7/2018	13:38:26	COM4	8.30	0.00	120.00	0.00	Got 15bbbls Spacer back. Estimated TOT-6365' TOL- 869'
Event	22	Safety Meeting - Pre Rig-Down	Safety Meeting - Pre Rig-Down	4/7/2018	13:45:00	USER	8.29	0.00	114.00	0.00	All HSE present. Discussed red zone areas and trapped pressure hazards. Watch for suspended loads and rig down procedures, including hand placement, lifting techniques, and swing radius.
Event	23	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	4/7/2018	15:45:00	USER					All HSE present and fit to drive. Aware of directions and hazards.
Event	24	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	4/7/2018	16:00:00	USER					Pre journey managment prior to departure.

## 8.0 Production Casing Attachments

### 8.1 ConocoPhillips Big Sandy 3-65 36-31 1DH Production Job Chart

