

HALLIBURTON

iCem[®] Service

CONOCO/PHILLIPS COMPANY EBUSINESS

United States of America, COLORADO

Date: Tuesday, February 19, 2019

Prosper Farms 4-65 11-12 3CH Surface

Job Date: Tuesday, February 19, 2019

Sincerely,

Bryce Hinsch

Legal Notice

Disclaimer:

All information in this report is provided subject to the terms and conditions which govern the services provided by Halliburton. Halliburton personnel use their best efforts in gathering information and their best judgment in interpreting it, but any interpretation, research, analysis or recommendation furnished by Halliburton are opinions based upon inferences from measurements and empirical relationships and assumptions, which inferences and empirical relationships and assumptions are not infallible, and with respect to which professionals in the industry may differ. iCem 3D Displacement results are used to understand how fluids intermix during a cement job. Simulation and 3D displacement results are not intended as and should not be used as a replacement for bond logs in determining top of cement. Current 3D model calculations are known to model more volume than the input volume for standard cases due to known calculation improvements required. For rotational cases, the modeled volume will be impacted by the same calculations impacting the standard cases, as well as additional constraints imposed to make the calculation time required operationally feasible. Therefore, until further notice, 3D displacement results should not be used for replacement of a bond log, or used as an identifier of top of cement. HALLIBURTON IS UNABLE TO GUARANTEE THE ACCURACY OF ANY CHART INTERPRETATION, RESEARCH ANALYSIS, OR JOB RECOMMENDATION and any interpretation or recommendation is not for use of or reliance upon by any third party. The customer has full responsibility for any of its decisions which are based on the information provided in this report.

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1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Prosper Farms 4-65 11-12 3CH** 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 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

The Road to Excellence Starts with Safety

Sold To #: 352431		Ship To #: 3899063		Quote #: 0022543798		Sales Order #: 0905498519					
Customer: CONOCO/PHILLIPS COMPANY-EBUS				Customer Rep: JASON BEACH							
Well Name: PROSPER FARMS 4-65 11-12			Well #: 3CH		API/UWI #: 05-005-07382-00						
Field: WILDCAT		City (SAP): WATKINS		County/Parish: ARAPAHOE		State: COLORADO					
Legal Description: NW SW-11-4S-65W-2276FSL-490FWL											
Contractor:				Rig/Platform Name/Num: Nabors B16							
Job BOM: 7521 7521											
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		2179ft		Job Depth TVD		2190					
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		16	15.25				0	100	0	100	
Casing	0	9.625	8.921	36	STC	J-55	0	2179	0	2179	
Open Hole Section			13.5				100	2190	0	2190	
Tools and Accessories											
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make		
Guide Shoe	9.625					Top Plug	9.625	1	HES		
Float Shoe	9.625	1	N/A	2179		Bottom Plug	9.625	1	HES		
Float Collar	9.625	1	N/A	2135		SSR plug set	9.625				
Insert Float	9.625					Plug Container	9.625	1	HES		
Stage Tool	9.625					Centralizers	9.625	18			
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	8.97		4.5	

38.40 gal/bbl		FRESH WATER							
62.54 lbm/bbl		BARITE, BULK (100003681)							
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	SwiftCem	SWIFTCEM (TM) SYSTEM	490	sack	12	2.57		8	15.14
94 lbm		TYPE I / II CEMENT, BULK (101439798)							
15.14 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
3	SwiftCem	SWIFTCEM (TM) SYSTEM	255	sack	14.2	1.59		6	7.9
94 lbm		CMT - PREMIUM - CLASS G REG OR TYPE V, BULK (100003685)							
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	Displacement	Displacement	165	bbl	8.33			8	
Cement Left In Pipe		Amount	44 ft			Reason		Shoe Joint	
Comment : 95 BBLs OF CEMENT BACK TO SURFACE. DURING PRESSURE TEST NOTICED LEAK COMING OUT FROM									
TOP CAPS OF HT-400. METAL RINGS WHERE BENTAND SMASHED. PER CUSTOMER AND HES OFFICE APPROVAL HAD TO ISOLATE LEAKING SIDE AND PUMP THE JOB WITH 1 SIDE. OVER ALL JOB WENT GOOD.									

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	Pump Stg Tot (bbl)	DS Pump Press (psi)	Comments
Event	1	Call Out	Call Out	2/19/2019	05:30:00	USER					For Location @ 10:00
Event	2	Depart from Service Center or Other Site	Depart from Service Center or Other Site	2/19/2019	09:15:00	USER					Called Journey
Event	3	Arrive at Location from Service Center	Arrive at Location from Service Center	2/19/2019	10:15:00	USER					38 MILES. DISCUSS NUMBERS AND PROCEDURE WITH CUSTOMER. RIG IS GETTING READY TO LAND CASING. FREUS OFF LOADING CEMENT IN TO SILOS. CANNOT SPOT TRUCKS.
Event	4	Casing on Bottom	Casing on Bottom	2/19/2019	10:30:00	USER					Landing joint brought to floor and landed
Event	5	Circulate Well	Circulate Well	2/19/2019	10:50:00	USER					RIG UP CEMENT HEAD AND MANIFOLD FOR RIG TO CIRCULATE.
Event	6	Safety Meeting - Pre Rig-Up	Safety Meeting - Pre Rig-Up	2/19/2019	11:40:00	USER					JSA to discuss the hazards of rig-up
Event	7	Rig-Up Equipment	Rig-Up Equipment	2/19/2019	11:45:00	USER					Rig-up all surface lines and equipment.
Event	8	Pre-Job Safety Meeting	Pre-Job Safety Meeting	2/19/2019	12:45:00	USER	0.00	0.00	0.00	-2.00	With all Personal, to discuss the hazards of pumping the job, and pump schedule.
Event	9	Start Job	Start Job	2/19/2019	13:28:22	COM4	8.55	0.00	0.00	-10.00	
Event	10	Test Lines	Test Lines	2/19/2019	13:37:00	USER	8.55	0.00	1.80	-13.00	DURING PRESSURE TEST NOTICED LEAK GOING FROM TOP CAPS OF HT 400.

PER CUSTOMER APPROVAL
AND HES OFFICE HAD TO
ISOLATE LEAKING SIDE AND
PUMP THE JOB WITH ONE
HT - 400 PUMP.

Event	11	Test Lines	Test Lines	2/19/2019	13:51:00	USER	8.65	0.00	1.60	31.00	Test lines @ 3150 psi
Event	12	Check Weight	Check Weight	2/19/2019	13:57:30	COM4	8.56	0.00	1.60	11.00	
Event	13	Pump Spacer	Pump Spacer	2/19/2019	13:59:00	USER	8.55	0.00	1.60	8.00	BATCH/ WEIGHT/ PUMP 50 BBLs OF SPACER @ 10 PPG.
Event	14	Drop Bottom Plug	Drop Bottom Plug	2/19/2019	14:07:00	USER	9.97	5.10	30.90	108.00	DROP BOTTOM PLUG ON THE FLY 47 BBLs IN TO SPACER
Event	15	Pump Lead Cement	Pump Lead Cement	2/19/2019	14:09:00	USER	9.88	5.10	41.10	96.00	BATCH/ WEIGHT/PUMP 490 sk(224.3 bbls) of Lead Swiftcem @ 12.0 ppg, verified with pressurized scales
Event	16	Check Weight	Check Weight	2/19/2019	14:12:41	COM4	11.87	5.10	1.40	135.00	
Event	17	Pump Tail Cement	Pump Tail Cement	2/19/2019	14:45:00	USER	11.83	8.20	243.60	234.00	BATCH/WEIGHT/PUMP 255 SKS (72.2 BBLs) OF TAIL CEMENT @ 14.2 PPG.
Event	18	Check Weight	Check Weight	2/19/2019	14:47:20	COM4	14.19	8.20	11.70	374.00	
Event	19	Check Weight	Check Weight	2/19/2019	14:54:12	COM4	14.31	6.10	35.80	243.00	
Event	20	Shutdown	Shutdown	2/19/2019	15:08:00	USER	14.46	0.00	78.60	-3.00	Finished pumping cement
Event	21	Drop Top Plug	Drop Top Plug	2/19/2019	15:11:00	USER	14.44	0.00	78.60	-3.00	Pre-loaded top plug in plug container verified by customer rep.
Event	22	Pump Displacement - Start	Pump Displacement - Start	2/19/2019	15:13:00	USER	14.44	0.00	0.00	-3.00	165 bbls fresh water. Washing up on top of the plug.
Event	23	Bump Plug	Bump Plug	2/19/2019	15:40:00	USER	8.06	4.10	167.10	829.00	@500 psi over final circulating pressure of 816 psi

Event	24	Check Floats	Check Floats	2/19/2019	15:43:00	USER	7.99	0.00	169.70	1404.00	Floats held. 1.5 bbls back
Event	25	Event	Event	2/19/2019	15:47:00	USER	8.04	0.80	170.60	1270.00	PRESSURE UP 1800 PSI FOR 30 MIN CASING TEST.
Event	26	Event	Event	2/19/2019	16:17:00	USER	7.95	0.00	171.00	1887.00	BLEED OFF PRESSURE.
Event	27	End Job	End Job	2/19/2019	16:23:26	COM4	8.08	0.00	171.00	23.00	
Event	28	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	2/19/2019	16:25:00	USER	8.06	0.00	171.00	11.00	JSA to discuss the hazards of rig-down

3.0 Attachments

3.1 Case 1-Custom Results.png



HALLIBURTON

iCem[®] Service

CONOCO/PHILLIPS COMPANY EBUSINESS

For: Aron Negusse

Date: Tuesday, March 12, 2019

Prosper Farms 4-65 11-12 3CH

Conoco Prosper Farms 4-65 11-12 3CH

Job Date: Tuesday, March 12, 2019

Sincerely,

Nick Kornafel & Crew

Legal Notice

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1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Prosper Farms 4-65 11-12 3CH** 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 23 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

Sold To #: 352431		Ship To #: 3899063		Quote #: 0022543516		Sales Order #: 0905545868					
Customer: CONOCO/PHILLIPS COMPANY-EBUS				Customer Rep: Aron Negusse							
Well Name: PROSPER FARMS 4-65 11-12			Well #: 3CH		API/UWI #: 05-005-07382-00						
Field: WILDCAT		City (SAP): WATKINS		County/Parish: ARAPAHOE		State: COLORADO					
Legal Description: NW SW-11-4S-65W-2276FSL-490FWL											
Contractor:				Rig/Platform Name/Num: Nabors B16							
Job BOM: 7523 7523											
Well Type: HORIZONTAL OIL											
Sales Person: HALAMERICA\HB41307				Srv Supervisor: Nikolaus Kornafel							
Job											
Formation Name											
Formation Depth (MD)		Top		Bottom							
Form Type				BHST							
Job depth MD		17898ft		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		9.625	8.921	36	STC	J-55	0	2179		0	
Casing		5.5	4.778	20	TXP-BTC	P-110	0	17898		0	
Open Hole Section			8.5				2179	17906	0	0	
Tools and Accessories											
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make		
Guide Shoe	5.5			17898		Top Plug	5.5	1			
Float Shoe	5.5					Bottom Plug	5.5	1			
Float Collar	5.5					SSR plug set	5.5				
Insert Float	5.5					Plug Container	5.5	1	HES		
Stage Tool	5.5					Centralizers	5.5				
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	10.5 lb/gal Tuned Spacer III	Tuned Spacer III			60	bbl	10.5	6.62			
0.6670 gal/bbl		MUSOL(R) A, 5 GAL PAIL (100064220)									
0.10 gal/bbl		D-AIR 3000L, 5 GAL PAIL (101007444)									

37.58 gal/bbl	FRESH WATER								
84.77 lbm/bbl	BARITE, BULK (100003681)								
0.6670 gal/bbl	DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)								
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	7.55
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	1490	sack	13.5	1.79		6	8.73
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				
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	358	bbl	8.33				
Cement Left In Pipe	Amount	85 ft	Reason				Shoe Joint		
Mix Water:	pH 7	Mix Water Chloride:	0	Mix Water Temperature:		69 °F			
Cement Temperature:		Plug Displaced by:	Fresh water	Disp. Temperature:		69 °F			
Plug Bumped?	Yes	Bump Pressure:	2560 psi	Floats Held?		Yes			
Cement Returns:	0 bbl	Returns Density:		Returns Temperature:					
Comment Estimated top of tail 6254' top of lead 765'. Calculated spacer back to surface. Got 0 barrels of cement back to the pits. Checked floats, got 5 barrels back to the truck. Floats held.									

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)	Pump Stg Tot (bbl)	Comments
Event	1	Event	Callout	3/12/2019	06:00:00	USER					O/L time 11:00. verify equipment and materials before leaving the yard
Event	2	Safety Meeting	Safety Meeting	3/12/2019	09:45:00	USER					Pre-trip safety meeting and then depart in route to location. Journey called in and approved.
Event	3	Event	Meet with customer representative	3/12/2019	10:50:00	USER					TD 17898' OH 8.5" TP 17896' FC 17820' TVD 7809' PREVIOUS CASING 9.625" 36LB @2179' MW 9.8 PPG water tested temp 69 deg ph7 chlorides less than 300 sulfates less than 200
Event	4	Safety Meeting	Location Safety Meeting	3/12/2019	12:00:00	USER					Assessment of location, and pre rig up risks and hazards.
Event	5	Safety Meeting - Pre Job	Safety Meeting - Pre Job	3/12/2019	15:15:00	USER					discuss job procedure and hazards with Halliburton staff and 3rd party employees
Event	6	Start Job	Start Job	3/12/2019	16:00:00	USER					
Event	7	Test Lines	test lines	3/12/2019	16:15:00	USER					Pumped 3 barrels of fresh water to fill lines, shutdown, closed valves, performed 500 PSI electronic kick out function test, continued with 5th gear stall out test at 1680 PSI, then proceeded to bring pressure to 6000 PSI.

											pressure stabilized and held with no leaks.
Event	8	Pump Spacer 1	Pump Spacer 1	3/12/2019	16:36:44	COM4	415.00	10.79	4.00	0.00	Pumped 60 barrels of 10.5 PPG 6.62 yield 42.5 gal/sk tuned spacer with 40 gal dual spacer, 40 gal musol, 10 gal D-Air, at 5 bpm 425 PSI
Event	9	Check Weight	Check Weight	3/12/2019	16:37:30	COM4	412.00	10.50	4.00	3.10	Weight verified with pressurized mud scales
Event	10	Drop Bottom Plug	Drop Bottom Plug	3/12/2019	16:47:46	COM4	342.00	10.53	4.70	50.10	Bottom plug dropped by HOWCO supervisor, witnessed by company man
Event	11	Pump Lead Cement	Pump Lead Cement	3/12/2019	16:49:39	COM4	663.00	13.16	4.70	58.90	Pumped 835 sks/234bbbs 13.2PPG 1.57 Y 7.55 gal/sk Elasticem at 8bpm 550 PSI
Event	12	Check Weight	Check Weight	3/12/2019	16:51:10	COM4	451.00	13.25	4.80	7.20	Weight verified with pressurized mud scales
Event	13	Pump Tail Cement	Pump Tail Cement	3/12/2019	17:23:33	COM4	392.00	13.38	8.10	0.10	Pumped 1490 SKS 475bbbs 13.5 PPG 1.79 Y 8.73 gal/sk econocem at 8bpm 560 PSI
Event	14	Check Weight	Check Weight	3/12/2019	17:25:55	COM4	433.00	13.50	8.00	19.00	Weight verified with pressurized mud scales
Event	15	Shutdown	Shutdown	3/12/2019	18:34:45	COM4	16.00	13.47	0.00	542.20	Shutdown after finished pumping cement, cleaned pumps and lines followed by 3 bbls of fresh water
Event	16	Drop Top Plug	Drop Top Plug	3/12/2019	18:45:43	COM4	-29.00	7.66	0.00	558.00	Top plug dropped by HOWCO supervisor, witnessed by company man
Event	17	Pump Displacement	Pump Displacement	3/12/2019	18:45:48	COM4	-39.00	7.68	0.00	558.00	Pumped 398 bbls of fresh water displacement with 20 gal of MMCR in the first 40 bbls followed with biocide throughout at 8 BPM

Event	18	Bump Plug	Bump Plug	3/12/2019	19:44:17	COM4	3721.00	7.75	0.00	413.30	Slowed down at 370 bbls away to 3 bpm. Final circulating pressure 2560 psi. bump pressure 3000 psi. once lined out brought pressure up to 3500 psi and held for a 5 minute test.
Event	19	Standby Other	Standby Other	3/12/2019	19:50:00	USER	3846.00	7.75	0.00	413.30	Released pressure to check floats and got 5.0 barrels back to the truck. Floats held.
Event	20	Safety Meeting - Pre Rig-Down	End Job	3/12/2019	19:55:00	USER	-69.00	7.67	0.00	413.40	Estimated top of tail 6254' top of lead 765'. Calculated spacer back to surface. Got 0 barrels of cement back to the pits
Event	21	Safety Meeting - Pre Rig-Down	Post-Job Safety Meeting (Pre Rig-Down)	3/12/2019	20:00:00	USER	-76.00	7.64	0.00	413.40	Pre-rig down safety meeting discussing hazards.
Event	22	Pre-Convoy Safety Meeting	Depart Location Safety Meeting	3/12/2019	22:30:00	USER					Travel risks assessed and discussed. called in a journey and had it approved

3.0 Attachments

3.1 Case 1-Custom Results.png

