

HALLIBURTON

iCem[®] Service

VERDAD RESOURCES LLC

Timbro 9-59 8A-9-9 Production

Sincerely,
Meghan Jacobs

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 **Timbro 9-59 8A-9-9** 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.

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 #: 380688		Ship To #: 3898649		Quote #:		Sales Order #: 0905588679				
Customer: VERDAD RESOURCES LLC				Customer Rep: Joe Madson						
Well Name: TIMBRO 9-59			Well #: 8A-9-9		API/UWI #: 05-123-47556-00					
Field: WILDCAT		City (SAP): KEOTA		County/Parish: WELD		State: COLORADO				
Legal Description: SW NW-8-9N-59W-1895FNL-475FWL										
Contractor: H & P DRLG				Rig/Platform Name/Num: H & P 290						
Job BOM: 7523 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HX38199				Srv Supervisor: Nikolaus Kornafel						
Job										
Formation Name										
Formation Depth (MD)		Top		Bottom						
Form Type				BHST						
Job depth MD		16439ft		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			0	1907		1907
Casing		5.5	4.778	20			0	16439		0
Open Hole Section			8.5				1907	16462	0	6379
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	5.5	1		16439		Top Plug	5.5	1	WTHRFRD	
						Bottom Plug	5.5	1	WTHRFRD	
Float Collar	5.5	1		16393		SSR plug set	5.5			
						Plug Container	5.5	1	HES	
Wet Shoe Sub	5.5	1		16335		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	Spacer 1	SBM FDP-C1337-18 CEMENT SPACER SYS	60	bbl	20	2.78	16.7	5	2024	
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	Spacer 2	SBM FDP-C1337-18 CEMENT SPACER SYS	60	bbl	20	2.71	16.0	4	1989	
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	Lead	ELASTICEM (TM) SYSTEM	600	sack	13.2	1.57	7.55	8	4530	
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	Tail	NeoCem TM	432.4	bbl	13.2	2.04	9.75	8	11612	
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	MMCR Displacement	Fresh Water	20	bbl	8.34					
0.25 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	
6	Displacement	Fresh Water	323.5	bbl	8.34					
Cement Left In Pipe		Amount	0 ft			Reason			Wet Shoe	
Mix Water:		pH 7	Mix Water Chloride:			0 ppm		Mix Water Temperature:		55 °F
Cement Temperature:		N/A	Plug Displaced by:			8.33 lb/gal		Disp. Temperature:		55 °F
Plug Bumped?		Yes	Bump Pressure:			2400 psi		Floats Held?		Yes
Cement Returns:		0 bbl	Returns Density:			9.8 lb/gal		Returns Temperature:		N/A
Comment Pumped 60 BBLS of FDP spacer 1 followed by 60 BBLS of FDP spacer 2 followed by 168 BBLS/600SKS of 13.2 LB/GAL lead cement followed by 432 BBLS/1190SKS of tail cement, displaced by 362 BBLS of fresh water.										

2.0 Real-Time Job Summary

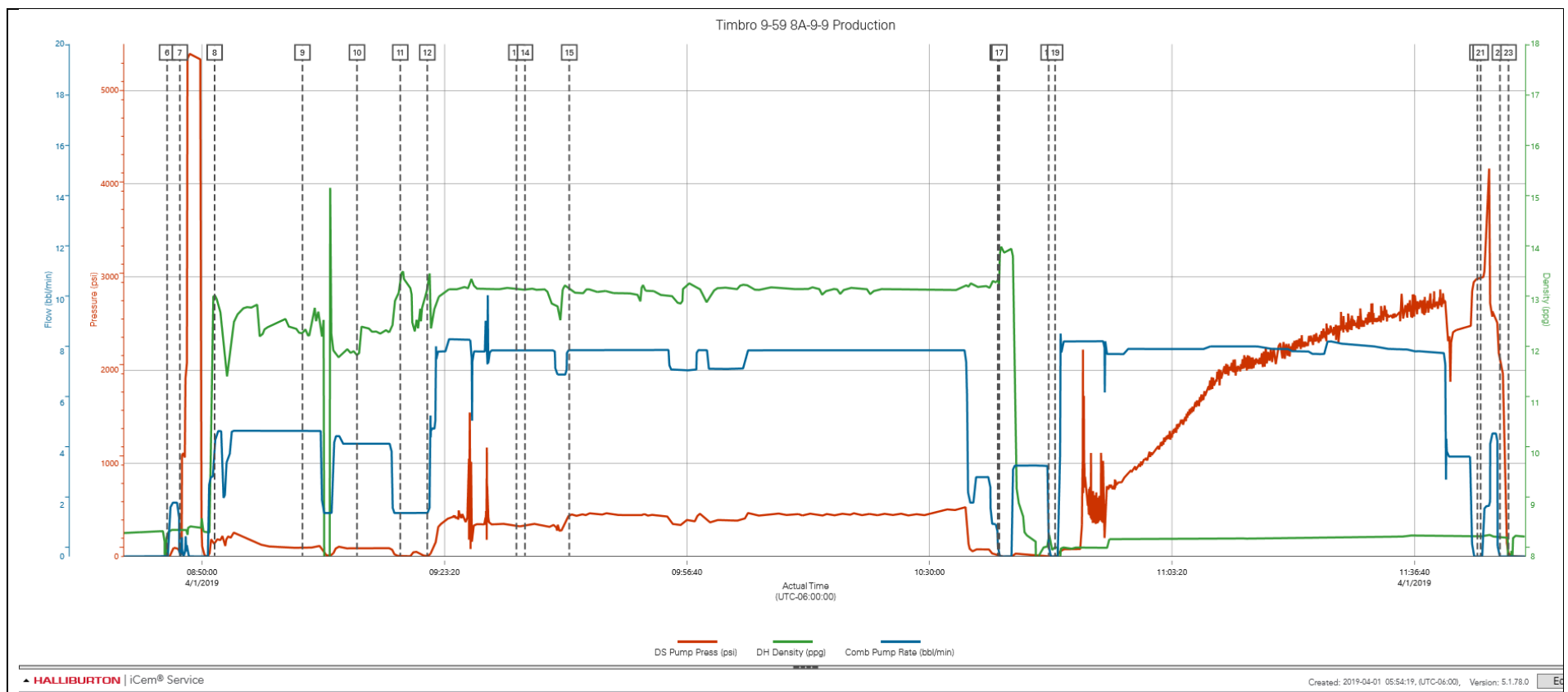
2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)	Comments
Event	1	Pre-Convoy Safety Meeting	Callout	3/31/2019	21:00:00	USER				O/L time 03:00. verify equipment and materials before leaving the yard
Event	2	Safety Meeting	Safety Meeting	4/1/2019	00:45:00	USER				Pre-trip safety meeting and then depart in route to location. Journey called in and approved.
Event	3	Event	Meet with customer representative	4/1/2019	03:05:00	USER				TD 16462' OH 8.5" TP 16439' WSS 16335' TVD 6379' PREVIOUS CASING 9.625" 36LB @1907' MW 9.8 LB/GAL water tested temp 52 deg ph7 chlorides less than 300 sulfates less than 200
Event	4	Safety Meeting	Location Safety Meeting	4/1/2019	03:15:00	USER				Assessment of location, and pre rig up risks and hazards.
Event	5	Safety Meeting - Pre Job	Safety Meeting - Pre Job	4/1/2019	08:30:00	USER	-5.00	8.43	0.00	discuss job procedure and hazards with Halliburton staff and 3rd party employees
Event	6	Start Job	Start Job	4/1/2019	08:45:12	COM5	-13.00	8.50	0.00	
Event	7	Test Lines	Test Lines	4/1/2019	08:46:57	COM5	58.00	8.52	0.00	Pumped 3 barrels of water to fill lines, shutdown, closed valves, performed 500 PSI electronic kick out function test, continued with 5th gear stall out test at 2500 PSI, then proceeded to bring pressure to 5000 PSI. pressure stabilized and held with no leaks.
Event	8	Pump Spacer 1	Pump Spacer 1	4/1/2019	08:51:44	COM5	147.00	13.08	4.10	Pumped 60 BBLS of 12.5 LB/GAL 2.78 FT3/SK 16.7 GAL/SK fdp Spacer with dry surfactants 15 Gal of D-Air throughout at 5 BBLS/MIN 250 PSI
Event	9	Pump Spacer 2	Pump Spacer 2	4/1/2019	09:03:48	COM5	95.00	12.36	4.90	Pumped 60 BBLS of 12.5 LB/GAL 2.71 FT3/SK 16.0 GAL/SK FDP Spacer, at 5 BBLS/MIN 250 PSI with 45 Gal of Dual Spacer, 45 Gal of Musol A, and 5 Gal of D-Air
Event	10	Check Weight	Check Weight	4/1/2019	09:11:18	COM5	88.00	11.92	4.40	Weight verified with pressurized mud scales
Event	11	Drop Bottom Plug	Drop Bottom Plug	4/1/2019	09:17:15	COM5	3.00	13.34	1.70	Bottom plug dropped by HOWCO supervisor.

Event	12	Pump Lead Cement	Pump Lead Cement	4/1/2019	09:20:58	COM5	4.00	13.27	1.70	Pumped 600 SKS/ 168 BBLS of 13.2 LB/GAL 1.57 FT3/SK 7.55 GAL/SK Elasticem lead cement at 8 BBLS/MIN 430 PSI
Event	13	Check Weight	Check Weight	4/1/2019	09:33:13	COM5	321.00	13.21	8.10	Weight verified with pressurized mud scales
Event	14	Check Weight	Check Weight	4/1/2019	09:34:24	COM5	324.00	13.21	8.10	Weight verified with pressurized mud scales
Event	15	Pump Tail Cement	Pump Tail Cement	4/1/2019	09:40:29	COM5	435.00	13.22	8.10	Pumped 1190 SKS/ 432 BBLS of 13.2PPG 1.56 FT3/SK 7.61 GAL/SK Neocem cement at 8 BPM/MIN 760 PSI
Event	16	Shutdown	Shutdown	4/1/2019	10:39:23	COM5	19.00	13.35	0.40	Shutdown after finished pumping cement
Event	17	Clean Lines	Clean Lines	4/1/2019	10:39:36	COM5	8.00	13.39	0.00	
Event	18	Drop Top Plug	Drop Top Plug	4/1/2019	10:46:23	COM5	3.00	8.20	0.40	Top plug dropped by HOWCO supervisor
Event	19	Pump Displacement	Pump Displacement	4/1/2019	10:47:16	COM5	3.00	8.18	0.00	Poured 10 Gal of MMCR into the first 20 barrels of displacement. Pumped 362 BBLS of fresh water displacement at 8 BBLS/MIN.
Event	20	Bump Plug	Bump Plug	4/1/2019	11:45:20	COM5	2979.00	8.39	0.00	Slowed down at 342 BBLS away to 4 BBLS/MIN. Final circulating pressure 2400 PSI. bump pressure 3200 PSI.
Event	21	Pressure Up Well	Pressure Up Well	4/1/2019	11:45:46	COM5	2986.00	8.41	0.00	Held Pressure for a minute, then pressured up to the shift the wet shoe sub at 4170 PSI and pumped a 5 barrel wet shoe
Event	22	Other	Other	4/1/2019	11:48:25	COM5	2103.00	8.38	0.00	Released pressure to check floats and got 2.5 barrels back to the truck. Floats held.
Event	23	End Job	End Job	4/1/2019	11:49:35	COM5	36.00	2.79	0.00	Got 0 bbls of spacer and 0 barrels of cement back to surface. Calculated top of ElastiCem lead Cement 1756', Calculated top of NeoCem tail Cement is 5842'.
Event	24	Pre-Rig Down Safety Meeting	Post-Job Safety Meeting (Pre Rig-Down)	4/1/2019	12:00:00	USER				Pre-rig down safety meeting discussing hazards.
Event	25	Pre-Convoy Safety Meeting	Depart Location Safety Meeting	4/1/2019	14:00:00	USER				Travel risks assessed and discussed. called in a journey and had it approved

3.0 Attachments

3.1 Timbro 9-59 8A-9-9 Production – Job Chart with Events



3.2 Timbro 9-59 8A-9-9 Production – Job Chart without Events

