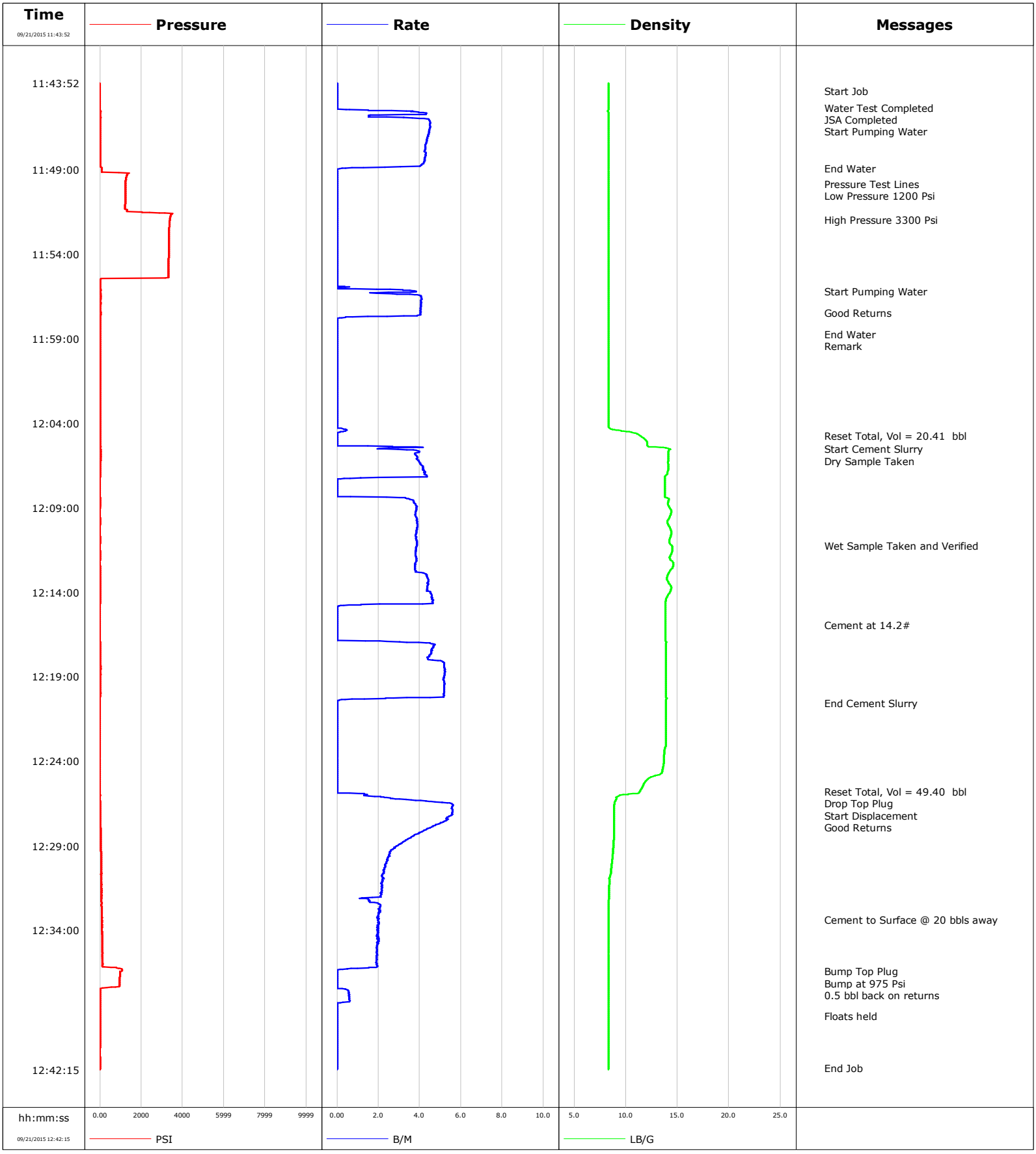
Schlumberger

Cementing Job Report

CemCAT v1.6

Well	Monarch 10-15	**Client**	Nighthawk
Field	Arikaree Creek	**SIR No.**	CWJN-01353
Engineer	Wayne Silvester	**Job Type**	Surface
Country	United States	**Job Date**	09-21-2015



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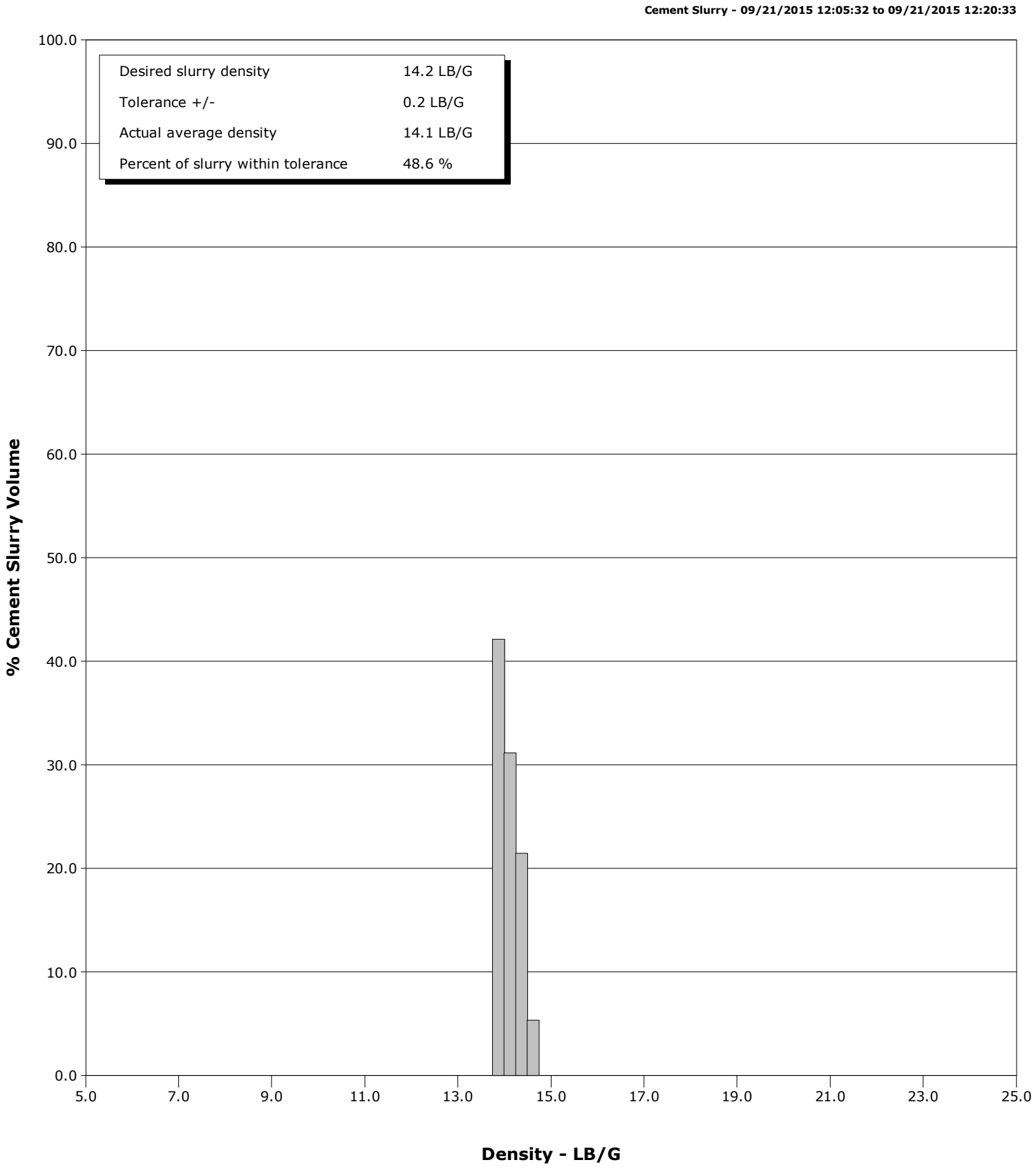
Cementing Qa/Qc Density Report

Well	Monarch 10-15	**Client**	Nighthawk
Field	Arikaree Creek	**SIR No.**	CWJN-01353
Engineer	Wayne Silvester	**Job Type**	Surface
Country	United States	**Job Date**	09-21-2015



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Cementing Service Report

Customer	Job Number
Nighthawk	CWJN-01353

Well	Location (legal)	Schlumberger Location	Job Start
Monarch 10-15	0631653703	Cheyenne	Sep/21/2015

Field	Formation Name/Type	Deviation	Bit Size	Well MD	Well TVD
Arikaree Creek	Shale	0 deg	12.3 in	ft	470.0 ft

County	State/Province	BHP	BHST	BHCT	Pore Press. Gradient
Lincoln	Colorado	psi	85 degF	80 degF	lb/gal

Well Master	API/UWI

Rig Name	Drilled For	Service Via
Spud Rig	Oil and Gas	Land

Offshore Zone	Well Class	Well Type
	New	Other

Drilling Fluid Type	Max. Density	Plastic Viscosity
Other	lb/gal	cP

Service Line	Job Type
Cementing	Surface

Max. Allowed Tub. Press	Max. Allowed Ann. Press	WH Connection
psi	psi	8 5/8" Cement Head

Service Instructions

1.MI (Move in) Schlumberger equipment.
2.Conduct Rig-up, Prime-up and pressure test safety meeting.
3.RU (Rig up) Schlumberger equipment and pressure test to customer master valve.
4.Conduct pre-job safety meeting.
5.Perform treatment per design pumping schedule and instructions of client representative.
6.Perform low pressure test to 1000 psi and high pressure test to 3500 psi
7.Pump 20 bbls fresh water
8.Pump 34.7 bbls 14.0 ppg Tail cement +/- 0.2 ppg at 5 bpm (max rate)
9.Drop Top Plug - Verify with wire tattle tale

Casing/Liner

Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
470.0	8.6	24.0	J-55	BTC
0.0	0.0	0.0		

Tubing/Drill Pipe

T/D	Depth, ft	Size, in	Weight, lb/ft	Grade	Thread

Perforations/Open Hole

Top, ft	Bottom, ft	shot/ft	No. of Shots	Total Interval
ft	ft			ft
ft	ft			Diameter
ft	ft			in

Treat Down	Displacement	Packer Type	Packer Depth
Casing	bbl		ft

Tubing Vol.	Casing Vol.	Annular Vol.	Openhole Vol.
bbl	27.0 bbl	bbl	43.0 bbl

Casing/Tubing Secured	1 Hole Vol. Circulated prior to Cement	Lift Pressure	Pipe Rotated	Pipe Reciprocated	No. Centralizers	Top Plugs	Bottom Plugs	Cement Head Type
☐	☐	137 psi	☐	☐		1		Single

Job Scheduled For	Arrived on Location	Leave Location
Sep/21/2015 11:00	Sep/21/2015 10:00	Sep/21/2015 02:00

Casing Tools		Squeeze Job	
Shoe Type	Float	Squeeze Type	
Shoe Depth	770.0 ft	Tool Type	
Stage Tool Type		Tool Depth	ft
Stage Tool Depth	ft	Tail Pipe Size	in
Collar Type	Float	Tail Pipe Depth	ft
Collar Depth	426.0 ft	Sqz. Total Vol.	bbl

Date	Time 24-hr clock	Flow Rate B/M	Density LB/G	Volume BBL	CPF1_PRESS PSI	Message
09/21/2015	11:43:52	0.0	8.34	0.0	-24	Started Acquisition
09/21/2015	11:44:20	0.0	8.34	0.0	-24	Start Job
09/21/2015	11:45:20	0.0	8.34	0.0	-1	Water Test Completed
09/21/2015	11:45:21	0.0	8.34	0.0	-1	JSA Completed
09/21/2015	11:45:30	1.5	8.32	0.0	26	Start Pumping Water
09/21/2015	11:48:53	1.3	8.34	14.0	82	
09/21/2015	11:48:56	0.2	8.34	14.1	83	End Water
09/21/2015	11:49:52	0.0	8.34	14.1	1234	Pressure Test Lines
09/21/2015	11:50:04	0.0	8.34	14.1	1230	Low Pressure 1200 Psi
09/21/2015	11:51:59	0.0	8.34	14.1	3372	High Pressure 3300 Psi
09/21/2015	11:53:54	0.0	8.34	14.1	3350	
09/21/2015	11:56:13	3.8	8.34	14.5	42	Start Pumping Water
09/21/2015	11:57:27	4.0	8.34	19.3	39	Good Returns
09/21/2015	11:58:45	0.0	8.34	20.3	15	End Water
09/21/2015	11:58:51	0.0	8.34	20.3	15	Remark
09/21/2015	11:58:55	0.0	8.34	20.3	15	
09/21/2015	12:03:56	0.0	8.33	20.3	7	
09/21/2015	12:04:45	0.0	11.40	20.4	7	Reset Total, Vol = 20.41 bbl
09/21/2015	12:05:32	2.3	14.30	20.9	48	Start Cement Slurry
09/21/2015	12:06:00	3.9	14.10	22.6	57	Dry Sample Taken
09/21/2015	12:08:57	3.9	14.18	29.7	35	

Well	Field	Job Start	Customer	Job Number
Monarch 10-15	Arikaree Creek	Sep/21/2015	Nighthawk	CWJN-01353

Date	Time 24-hr clock	Flow Rate B/M	Density LB/G	Volume BBL	CPF1_PRESS PSI	Message
09/21/2015	12:13:58	4.5	14.30	49.5	55	
09/21/2015	12:15:58	0.0	13.83	53.1	-15	Cement at 14.2#
09/21/2015	12:18:59	5.2	13.88	63.0	72	
09/21/2015	12:20:33	0.0	13.86	69.8	-10	End Cement Slurry
09/21/2015	12:24:00	0.0	13.68	69.8	-6	
09/21/2015	12:25:48	0.0	11.35	69.8	-6	Reset Total, Vol = 49.40 bbl
09/21/2015	12:26:09	2.3	9.06	70.2	10	Drop Top Plug
09/21/2015	12:26:13	2.7	9.12	70.3	12	Start Displacement
09/21/2015	12:26:53	5.6	8.87	73.6	46	Good Returns
09/21/2015	12:29:01	2.9	8.79	83.1	57	
09/21/2015	12:33:22	2.0	8.33	92.7	95	Cement to Surface @ 20 bbls away
09/21/2015	12:34:02	2.0	8.33	94.0	107	
09/21/2015	12:36:27	0.0	8.33	98.4	975	Bump Top Plug
09/21/2015	12:36:42	0.0	8.33	98.4	962	Bump at 975 Psi
09/21/2015	12:37:13	0.0	8.33	98.4	952	0.5 bbl back on returns
09/21/2015	12:39:03	0.0	8.33	98.9	7	
09/21/2015	12:39:06	0.0	8.33	98.9	7	Floats held

Post Job Summary

Average Pump Rates, bbl/min				Volume of Fluid Injected, bbl			
Slurry	N2	Mud	Maximum Rate	Total Slurry	Mud	Spacer	N2
3.4			5.6	78.4	0.0	0.5	

Treating Pressure Summary, psi					Breakdown Fluid		
Maximum	Final	Average	Bump Plug to	Breakdown	Type	Volume	Density
3537	8	395	975		FreshWater	27.0 bbl	8.34 lb/gal

Avg. N2 Percent	Designed Slurry Volume	Displacement	Mix Water Temp		
%	43.0 bbl	28.2 bbl	75 degF	Cement Circulated to Surface? [X]	Volume 7.0 bbl
				Washed Thru Perfs [ ]	To ft

Customer or Authorized Representative	Schlumberger Supervisor		
Jim Weir	Wayne Silvester	Circulation Lost [ ]	Job Completed [X]
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