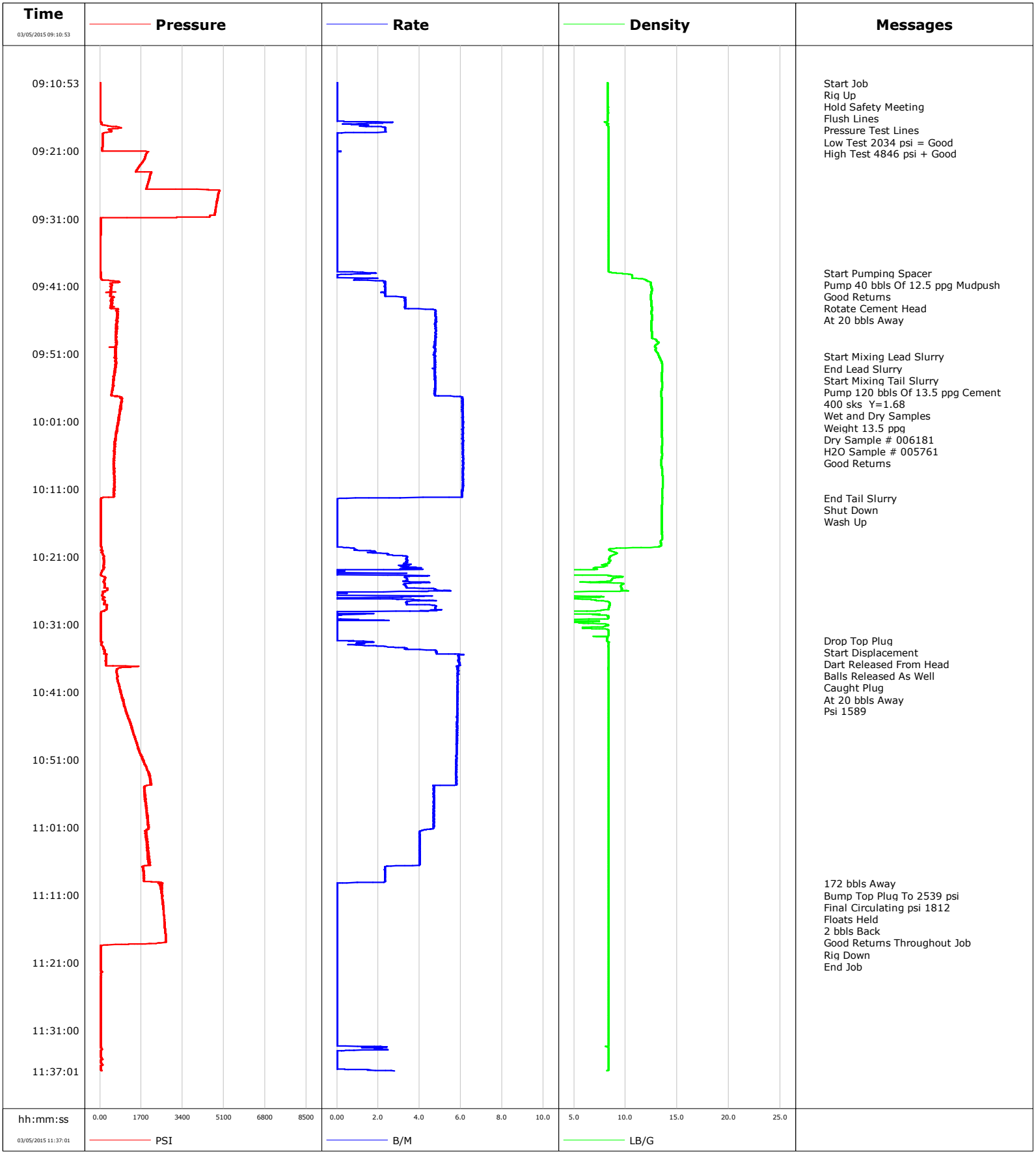
Schlumberger

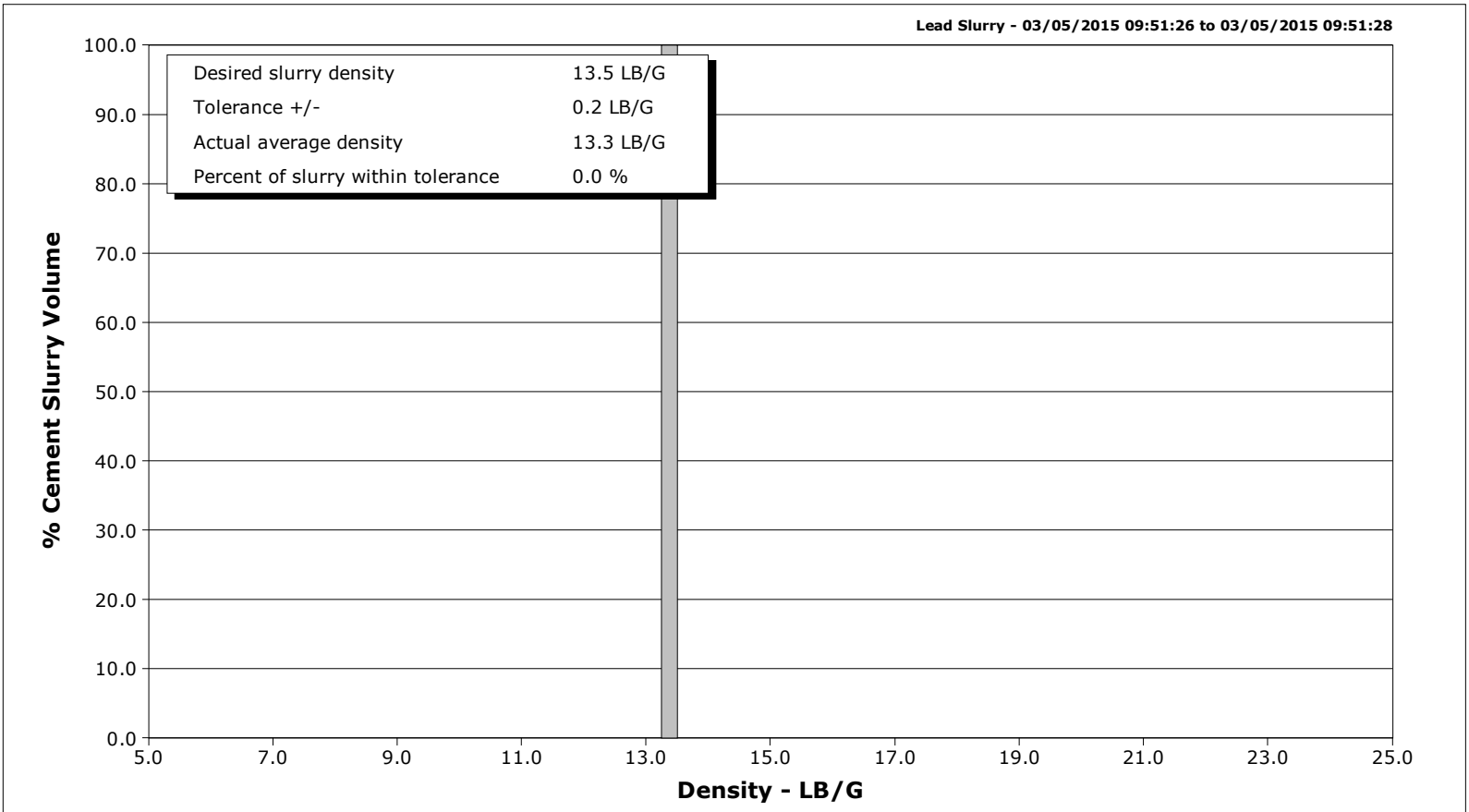
Cementing Job Report

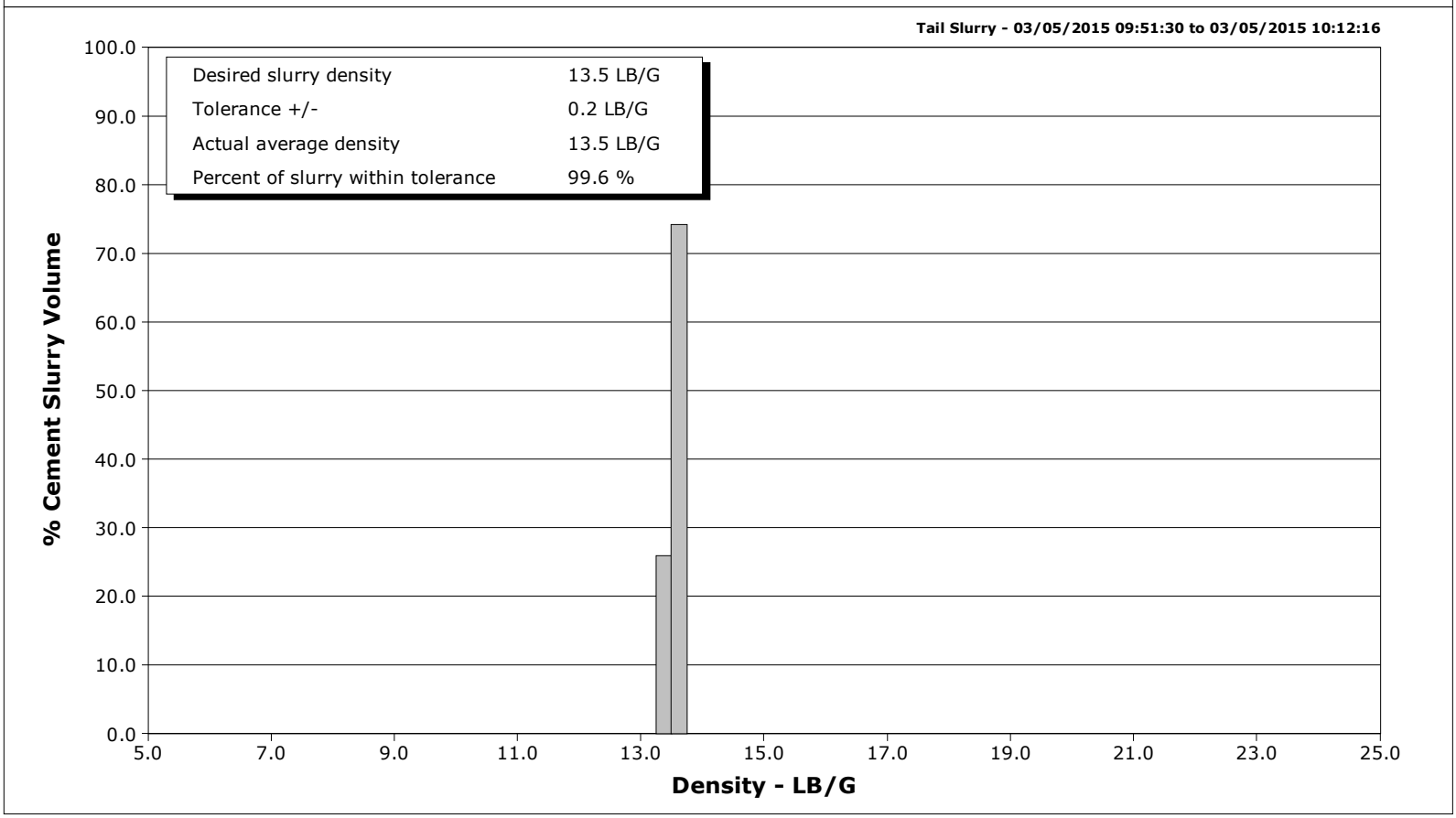
Well	Ruhl 1K-32H	**Client**	Encana
Field	DJ	**SIR No.**	2102812
Engineer	Justin Zika/Leiker	**Job Type**	Production
Country	United States	**Job Date**	03-05-2015



Schlumberger Cementing Qa/Qc Density Report

Well	Ruhl 1K-32H	**Client**	Encana
Field	DJ	**SIR No.**	2102812
Engineer	Justin Zika/Leiker	**Job Type**	Production
Country	United States	**Job Date**	03-05-2015





Schlumberger

Cementing Service Report

Customer	Job Number
Encana	2102812

Well	Location (legal)	Schlumberger Location	Job Start
Ruhl 1K-32H 1K-32H	Cheyenne,WY	CWY	Mar/05/2015

Field	Formation Name/Type	Deviation	Bit Size	Well MD	Well TVD
DJ	Shale	deg	6.1 in	11542.0 ft	ft

County	State/Province	BHP	BHST	BHCT	Pore Press. Gradient
Weld	Colorado	psi	215 degF	215 degF	lb/gal

Well Master	API/UWI
0631588856	05123402800000

Rig Name	Drilled For	Service Via
Ensign 135	Oil	Land

Offshore Zone	Well Class	Well Type
	New	Development

Drilling Fluid Type	Max. Density	Plastic Viscosity
Bentonite	10.70 lb/gal	cP

Service Line	Job Type
Cementing	Production

Max. Allowed Tub. Press	Max. Allowed Ann. Press	WH Connection
2500 psi	psi	

Service Instructions

Rig Up
Hold Safety Meeting
Flush Lines
Pressure Test Lines
Pump 40 bbls Of 12.5 ppg Mudpush
Pump 120 bbls Of 13.5 ppg Cement
Shut Down/Wash Up
Drop Dart/Drop Balls
Displace

Casing/Liner

Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
11522.0	4.5	13.5	110	8RD
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	172.0 bbl		ft

Tubing Vol.	Casing Vol.	Annular Vol.	Openhole Vol.
bbl	172.0 bbl	207.0 bbl	379.0 bbl

Casing/Tubing Secured	1 Hole Vol. Circulated prior to Cement
X	X

Lift Pressure	Pipe Rotated	Pipe Reciprocated
9780 psi	X	

No. Centralizers	Top Plugs	Bottom Plugs

Cement Head Type

Job Scheduled For	Arrived on Location	Leave Location
Mar/05/2015 04:00	Mar/05/2015 07:00	Mar/05/2015 13:00

Casing Tools		Squeeze Job	
Shoe Type	Float	Squeeze Type	
Shoe Depth	11522.0 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	11517.0 ft	Sqz. Total Vol.	bbl

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
03/05/2015	09:10:53	19	0.0	8.28	19.4	Started Acquisition
03/05/2015	09:10:55	19	0.0	8.28	19.4	Rig Up
03/05/2015	09:11:05	19	0.0	8.28	19.4	Pressure Test Lines
03/05/2015	09:11:07	18	0.0	8.28	19.4	Low Test 2034 psi = Good
03/05/2015	09:11:08	19	0.0	8.28	19.4	High Test 4846 psi + Good
03/05/2015	09:12:33	19	0.0	8.28	19.4	
03/05/2015	09:14:13	16	0.0	8.28	19.4	
03/05/2015	09:15:53	15	0.0	8.28	19.4	
03/05/2015	09:17:33	863	2.3	8.34	1.4	
03/05/2015	09:19:13	105	0.0	8.34	3.2	
03/05/2015	09:20:53	100	0.0	8.35	3.2	
03/05/2015	09:22:33	1775	0.0	8.35	3.2	
03/05/2015	09:24:13	2110	0.0	8.35	3.2	
03/05/2015	09:25:53	1966	0.0	8.35	3.2	
03/05/2015	09:27:33	4860	0.0	8.35	3.2	
03/05/2015	09:29:13	4779	0.0	8.35	3.2	
03/05/2015	09:30:53	135	0.0	8.35	3.2	
03/05/2015	09:32:33	24	0.0	8.35	3.2	
03/05/2015	09:34:13	19	0.0	8.35	3.2	
03/05/2015	09:35:53	18	0.0	8.35	3.2	
03/05/2015	09:37:33	19	0.0	8.35	3.2	

Well	Field	Job Start	Customer	Job Number
Ruhl 1K-32H 1K-32H	DJ	Mar/05/2015	Encana	2102812

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
03/05/2015	09:39:13	28	0.7	10.32	3.7	
03/05/2015	09:40:53	497	2.3	12.47	5.8	
03/05/2015	09:42:33	559	2.9	12.47	9.6	
03/05/2015	09:44:13	416	3.3	12.53	15.1	
03/05/2015	09:45:53	725	4.8	12.53	22.8	
03/05/2015	09:47:33	681	4.8	12.52	30.8	
03/05/2015	09:49:13	666	4.7	13.11	38.8	
03/05/2015	09:50:53	618	4.7	13.11	46.7	
03/05/2015	09:51:26	642	4.7	13.25	49.3	Start Mixing Lead Slurry
03/05/2015	09:51:28	672	4.7	13.26	49.4	End Lead Slurry
03/05/2015	09:51:30	661	4.8	13.27	49.6	Start Mixing Tail Slurry
03/05/2015	09:51:45	649	4.7	13.36	50.8	Pump 120 bbls Of 13.5 ppg Cement
03/05/2015	09:51:46	649	4.7	13.36	50.8	Dry Sample # 006181
03/05/2015	09:51:49	636	4.7	13.37	51.1	Good Returns
03/05/2015	09:52:33	650	4.8	13.54	54.6	
03/05/2015	09:54:13	598	4.8	13.49	62.4	
03/05/2015	09:55:53	535	4.8	13.55	70.4	
03/05/2015	09:57:33	824	6.1	13.49	78.6	
03/05/2015	09:59:13	831	6.1	13.52	88.8	
03/05/2015	10:00:53	786	6.1	13.52	98.9	
03/05/2015	10:02:33	689	6.1	13.51	109.1	
03/05/2015	10:04:13	590	6.1	13.53	119.2	
03/05/2015	10:05:53	582	6.1	13.54	129.4	
03/05/2015	10:07:33	570	6.1	13.47	139.6	
03/05/2015	10:09:13	596	6.1	13.60	149.8	
03/05/2015	10:10:53	567	6.1	13.58	159.9	
03/05/2015	10:12:16	109	3.1	13.55	168.3	End Tail Slurry
03/05/2015	10:12:17	114	3.1	13.55	168.4	Shut Down
03/05/2015	10:12:18	42	2.5	13.57	168.4	Wash Up
03/05/2015	10:12:33	38	0.0	13.56	168.6	
03/05/2015	10:14:13	31	0.0	13.52	168.6	
03/05/2015	10:15:53	30	0.0	13.52	168.6	
03/05/2015	10:17:33	29	0.0	13.52	168.6	
03/05/2015	10:19:13	30	0.0	13.45	168.6	
03/05/2015	10:20:53	159	3.3	8.62	170.6	
03/05/2015	10:22:33	156	3.4	7.64	176.2	
03/05/2015	10:24:13	219	3.4	8.74	179.5	
03/05/2015	10:25:53	305	4.8	9.63	185.5	
03/05/2015	10:27:33	199	3.7	7.90	189.3	
03/05/2015	10:29:13	47	0.0	0.39	195.8	
03/05/2015	10:30:53	25	0.0	6.38	196.1	
03/05/2015	10:32:33	25	0.0	8.34	196.1	
03/05/2015	10:33:20	25	0.0	8.17	196.1	Drop Top Plug
03/05/2015	10:33:21	25	0.0	8.17	196.1	Start Displacement
03/05/2015	10:34:13	115	2.1	8.33	197.0	
03/05/2015	10:35:53	238	5.9	8.35	204.6	
03/05/2015	10:37:28	785	5.8	8.33	213.9	Caught Plug
03/05/2015	10:37:33	747	5.9	8.33	214.4	
03/05/2015	10:39:13	743	5.9	8.34	224.2	
03/05/2015	10:40:53	840	5.8	8.34	233.9	
03/05/2015	10:42:33	980	5.8	8.34	243.6	
03/05/2015	10:44:13	1090	5.8	8.34	253.4	
03/05/2015	10:45:53	1266	5.8	8.34	263.1	
03/05/2015	10:47:33	1422	5.8	8.34	272.8	

Well	Field	Job Start	Customer	Job Number
Ruhl 1K-32H 1K-32H	DJ	Mar/05/2015	Encana	2102812

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
03/05/2015	10:50:53	1773	5.8	8.34	292.1	
03/05/2015	10:52:33	1951	5.8	8.34	301.7	
03/05/2015	10:54:13	2069	5.8	8.34	311.4	
03/05/2015	10:55:53	1823	4.7	8.34	319.9	
03/05/2015	10:57:33	1913	4.7	8.34	327.7	
03/05/2015	10:59:13	1951	4.7	8.34	335.5	
03/05/2015	11:00:53	1975	4.7	8.34	343.3	
03/05/2015	11:02:33	1913	4.0	8.34	350.3	
03/05/2015	11:04:13	1976	4.0	8.34	357.0	
03/05/2015	11:05:53	1998	4.0	8.34	363.7	
03/05/2015	11:07:33	1806	2.3	8.34	368.9	
03/05/2015	11:09:13	2589	0.5	8.34	372.8	
03/05/2015	11:09:19	2577	0.0	8.34	372.8	172 bbls Away
03/05/2015	11:09:23	2563	0.0	8.34	372.8	Bump Top Plug To 2539 psi
03/05/2015	11:09:26	2511	0.0	8.34	372.8	Final Circulating psi 1812
03/05/2015	11:09:27	2566	0.0	8.34	372.8	End Job
03/05/2015	11:10:53	2554	0.0	8.34	372.8	
03/05/2015	11:12:33	2599	0.0	8.34	372.8	
03/05/2015	11:14:13	2635	0.0	8.34	372.8	
03/05/2015	11:15:53	2668	0.0	8.34	372.8	
03/05/2015	11:17:33	2706	0.0	8.34	372.8	
03/05/2015	11:19:13	33	0.0	8.35	372.8	
03/05/2015	11:20:53	25	0.0	8.35	372.8	
03/05/2015	11:22:33	37	0.0	8.35	372.8	
03/05/2015	11:24:13	26	0.0	8.35	372.8	
03/05/2015	11:25:53	24	0.0	8.35	372.8	
03/05/2015	11:27:33	23	0.0	8.35	372.8	
03/05/2015	11:29:13	22	0.0	8.35	372.8	
03/05/2015	11:30:53	22	0.0	8.35	372.8	
03/05/2015	11:32:33	23	0.0	8.35	372.8	
03/05/2015	11:34:13	31	0.0	8.36	374.0	

Post Job Summary

Average Pump Rates, bbl/min				Volume of Fluid Injected, bbl			
Slurry	N2	Mud	Maximum Rate	Total Slurry	Mud	Spacer	N2
4.7			7.5	374.4	0.0	49.3	

Treating Pressure Summary, psi					Breakdown Fluid		
Maximum	Final	Average	Bump Plug to	Breakdown	Type	Volume	Density
2500	388	889	2539			bbl	lb/gal

Avg. N2 Percent	Designed Slurry Volume	Displacement	Mix Water Temp		
%	0.0 bbl	204.3 bbl	64 degF	Cement Circulated to Surface? ☐	Volume bbl
				Washed Thru Perfs ☐	To ft

Customer or Authorized Representative	Schlumberger Supervisor	Circulation Lost	Job Completed
Mike Roane	Justin Zika/Leiker	☐ -	☒ -