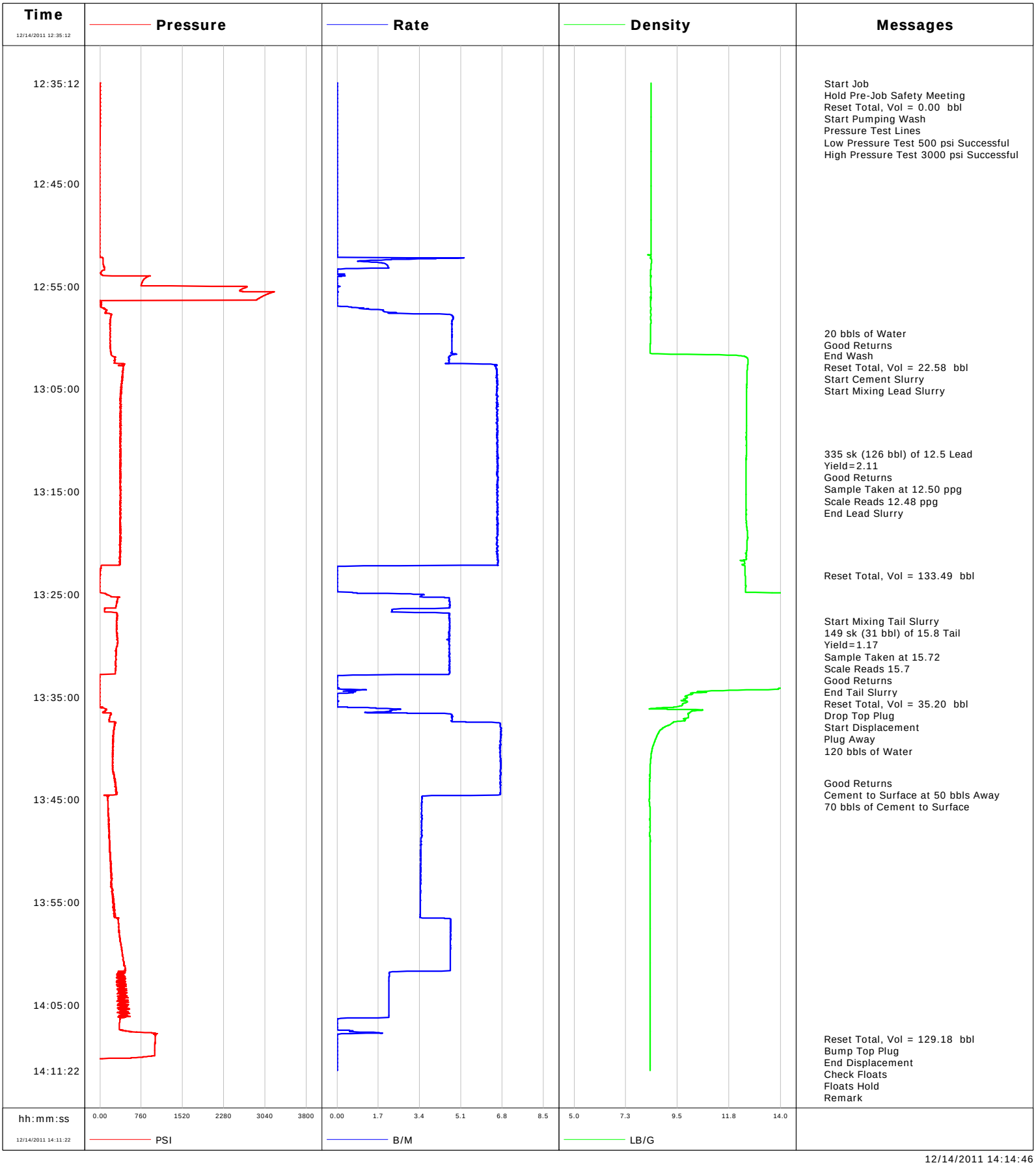
Schlumberger

Cementing Job Report

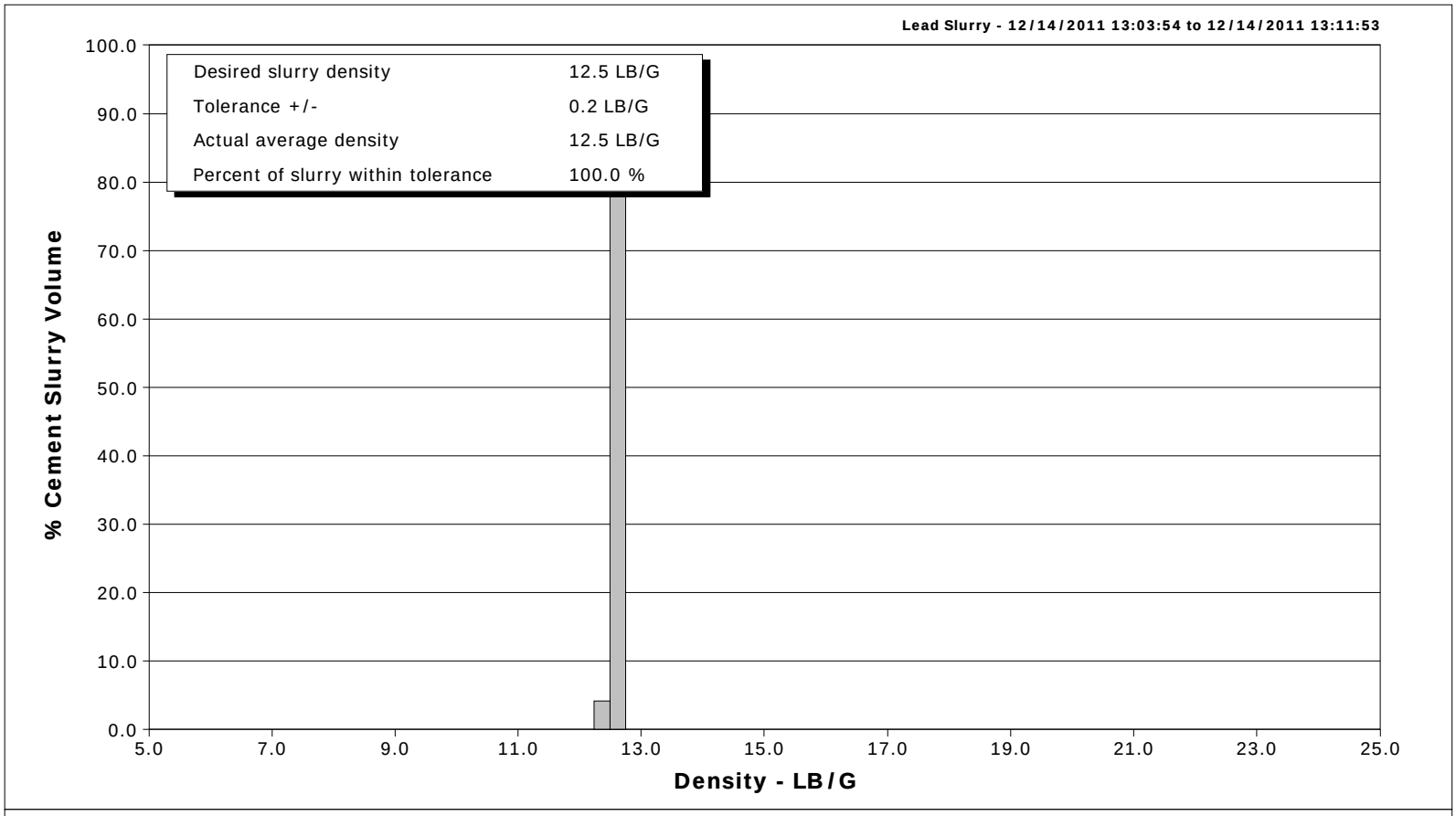
Well	HMU Federal 16-16C2 J1	**Client**	Encana
Field	Mamm Creek	**SIR No.**	682775
Engineer	Jeff Eulberg	**Job Type**	9 5/8" Surface
Country	United States	**Job Date**	12-14-2011

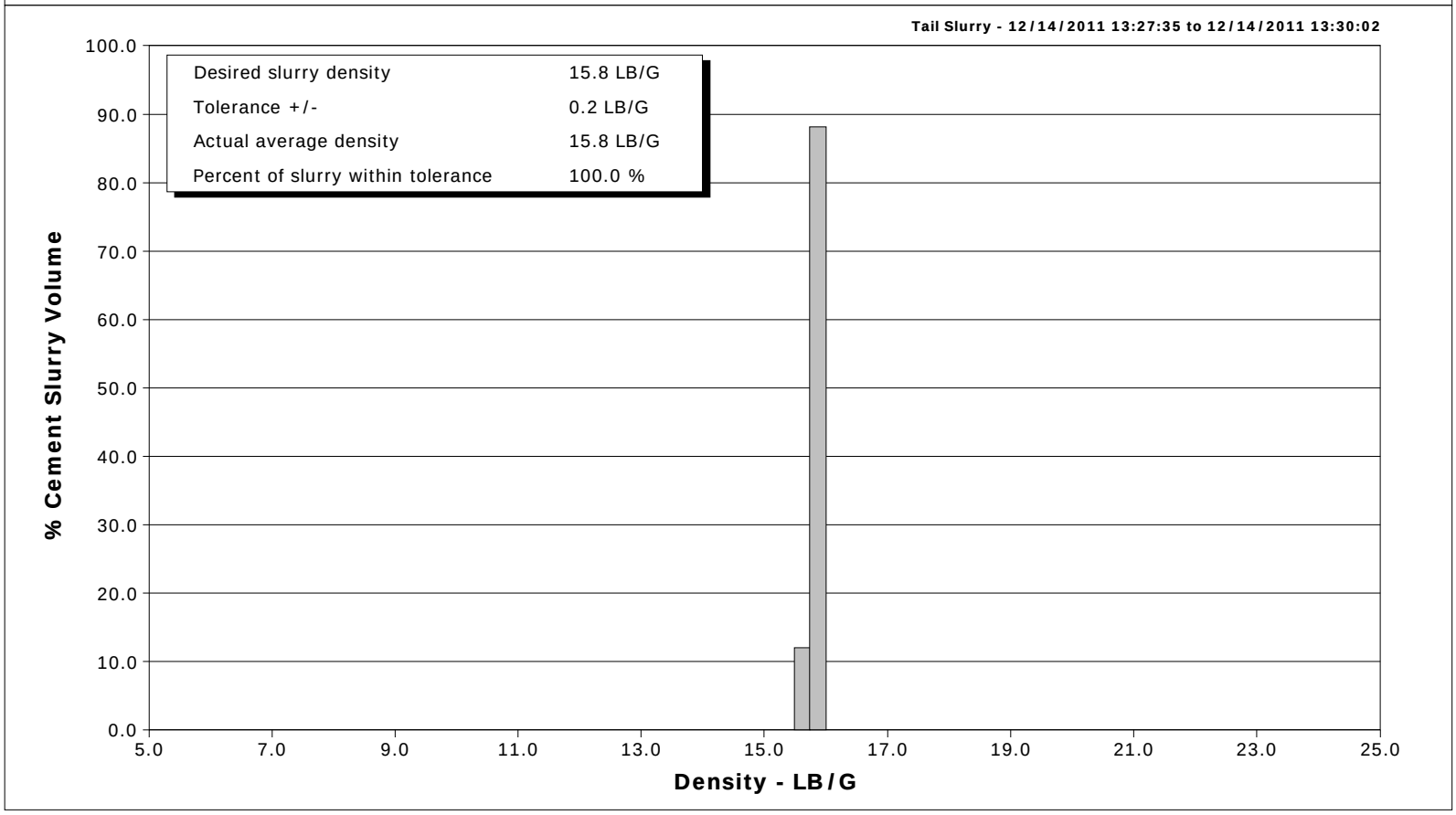


Schlumberger

Cementing Qa/Qc Density Report

Well	HMU Federal 16-16C2 J1	**Client**	Encana
Field	Mamm Creek	**SIR No.**	682775
Engineer	Jeff Eulberg	**Job Type**	9 5/8" Surface
Country	United States	**Job Date**	12-14-2011





Schlumberger Cementing Service Report

Customer	Job Number
Encana	682775

Well	Location (legal)	Schlumberger Location	Job Start
HMU Federal 16-16C2 J1		Grand Junction	Dec/14/2011

Field	Formation Name/Type	Deviation	Bit Size	Well MD	Well TVD
Mamm Creek		deg	in	1610.0 ft	1610.0 ft

County	State/Province	BHP	BHST	BHCT	Pore Press. Gradient
Garfield	Colorado	psi	100 degF	86 degF	lb/gal

Well Master	API/UWI
0631254657	

Rig Name	Drilled For	Service Via
Nabors M11	Gas	Land

Offshore Zone	Well Class	Well Type
	New	Development

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

Service Line	Job Type
Cementing	9 5/8" Surface

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

Service Instructions

Casing/Liner

Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
1610.0	9.6	36.0	K55	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	121.0 bbl		ft

Tubing Vol.	Casing Vol.	Annular Vol.	Openhole Vol.
bbl	bbl	bbl	bbl

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

Lift Pressure	psi

Pipe Rotated	Pipe Reciprocated
☐	☐

No. Centralizers	Top Plugs	Bottom Plugs
	1	

Cement Head Type

Job Scheduled For	Arrived on Location	Leave Location
Dec/14/2011	Dec/14/2011	Dec/14/2011

Casing Tools

Shoe Type	Guide
Shoe Depth	1610.0 ft
Stage Tool Type	
Stage Tool Depth	ft
Collar Type	Float
Collar Depth	1563.0 ft

Squeeze Job

Squeeze Type	
Tool Type	
Tool Depth	ft
Tail Pipe Size	in
Tail Pipe Depth	ft
Sqz. Total Vol.	bbl

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Solid Fraction NULL	Message
12/14/2011	12:35:12	-0	0.0	8.35	0.0	0	Started Acquisition
12/14/2011	12:35:14	0	0.0	8.35	0.0	0	Start Job
12/14/2011	12:35:15	0	0.0	8.35	0.0	0	Hold Pre-Job Safety Meeting
12/14/2011	12:35:17	0	0.0	8.35	0.0	0	Reset Total, Vol = 0.00 bbl
12/14/2011	12:35:19	0	0.0	8.35	0.0	0	Start Pumping Wash
12/14/2011	12:35:24	0	0.0	8.35	0.0	0	Pressure Test Lines
12/14/2011	12:35:26	1	0.0	8.35	0.0	0	Low Pressure Test 500 psi Successful
12/14/2011	12:36:02	0	0.0	8.35	0.0	0	
12/14/2011	12:36:52	1	0.0	8.35	0.0	0	
12/14/2011	12:37:42	1	0.0	8.35	0.0	0	
12/14/2011	12:38:32	1	0.0	8.35	0.0	0	
12/14/2011	12:39:22	1	0.0	8.35	0.0	0	
12/14/2011	12:40:12	-0	0.0	8.35	0.0	0	
12/14/2011	12:41:52	-1	0.0	8.35	0.0	0	
12/14/2011	12:42:42	-1	0.0	8.35	0.0	0	
12/14/2011	12:43:32	-1	0.0	8.35	0.0	0	
12/14/2011	12:44:22	-1	0.0	8.35	0.0	0	
12/14/2011	12:45:12	-1	0.0	8.35	0.0	0	
12/14/2011	12:46:02	-1	0.0	8.35	0.0	0	
12/14/2011	12:46:52	-2	0.0	8.35	0.0	0	
12/14/2011	12:47:42	-2	0.0	8.35	0.0	0	

Well	Field	Job Start	Customer	Job Number
HMU Federal 16-16C2 J1	Mamm Creek	Dec/14/2011	Encana	682775

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Solid Fraction NULL	Message
12/14/2011	12:49:22	-2	0.0	8.35	0.0	0	
12/14/2011	12:50:12	-1	0.0	8.35	0.0	0	
12/14/2011	12:51:02	-4	0.0	8.35	0.0	0	
12/14/2011	12:51:52	-4	0.0	8.35	0.0	0	
12/14/2011	12:52:42	61	1.7	8.37	1.1	0	
12/14/2011	12:53:32	35	0.0	8.34	2.3	0	
12/14/2011	12:54:22	803	0.0	8.34	2.4	0	
12/14/2011	12:55:12	2642	0.0	8.34	2.4	0	
12/14/2011	12:56:02	2975	0.0	8.34	2.4	0	
12/14/2011	12:56:52	19	0.0	8.34	2.4	0	
12/14/2011	12:57:42	190	3.7	8.34	3.5	0	
12/14/2011	12:58:32	191	4.7	8.35	7.4	0	
12/14/2011	12:59:22	192	4.7	8.33	11.4	0	
12/14/2011	12:59:35	190	4.7	8.33	12.4	0	20 bbls of Water
12/14/2011	13:00:02	190	4.7	8.33	14.5	0	Good Returns
12/14/2011	13:00:12	185	4.7	8.34	15.3	0	
12/14/2011	13:01:02	190	4.7	8.31	19.3	0	
12/14/2011	13:01:42	208	4.7	11.67	22.4	20	End Wash
12/14/2011	13:01:43	209	4.7	11.90	22.5	20	Reset Total, Vol = 22.58 bbl
12/14/2011	13:01:46	222	4.6	12.20	22.8	20	Start Cement Slurry
12/14/2011	13:01:52	251	4.6	12.47	23.2	21	
12/14/2011	13:02:42	443	6.6	12.56	27.3	23	
12/14/2011	13:03:32	417	6.6	12.54	32.8	23	
12/14/2011	13:03:54	418	6.6	12.53	35.2	23	Start Mixing Lead Slurry
12/14/2011	13:04:22	401	6.6	12.52	38.2	23	
12/14/2011	13:05:12	393	6.6	12.51	43.7	23	
12/14/2011	13:06:02	377	6.6	12.51	49.2	23	
12/14/2011	13:06:52	367	6.5	12.51	54.7	23	
12/14/2011	13:07:42	381	6.6	12.50	60.2	23	
12/14/2011	13:08:32	380	6.6	12.50	65.7	23	
12/14/2011	13:09:22	387	6.6	12.50	71.2	23	
12/14/2011	13:10:12	381	6.6	12.50	76.7	23	
12/14/2011	13:11:02	381	6.6	12.50	82.2	23	
12/14/2011	13:11:18	368	6.6	12.50	83.9	23	335 sk (126 bbl) of 12.5 Lead
12/14/2011	13:11:19	384	6.6	12.50	84.0	23	Yield=2.11
12/14/2011	13:11:50	385	6.6	12.50	87.4	23	Sample Taken at 12.50 ppg
12/14/2011	13:11:51	371	6.6	12.50	87.6	23	Scale Reads 12.48 ppg
12/14/2011	13:11:52	371	6.6	12.50	87.7	23	
12/14/2011	13:11:53	388	6.6	12.50	87.8	23	End Lead Slurry
12/14/2011	13:12:42	375	6.6	12.49	93.2	23	
12/14/2011	13:13:32	378	6.6	12.49	98.7	23	
12/14/2011	13:14:22	379	6.6	12.49	104.2	23	
12/14/2011	13:15:12	377	6.6	12.49	109.7	23	
12/14/2011	13:16:02	383	6.6	12.50	115.2	23	
12/14/2011	13:16:52	373	6.6	12.50	120.7	24	
12/14/2011	13:17:42	372	6.6	12.50	126.2	24	
12/14/2011	13:18:32	373	6.6	12.53	131.7	24	
12/14/2011	13:19:22	384	6.6	12.56	137.2	24	
12/14/2011	13:20:12	360	6.6	12.54	142.7	24	
12/14/2011	13:21:02	372	6.6	12.48	148.1	24	
12/14/2011	13:21:52	369	6.6	12.43	153.7	14	
12/14/2011	13:22:42	5	0.0	12.45	156.1	0	
12/14/2011	13:23:07	1	0.0	12.46	156.1	0	Reset Total, Vol = 133.49 bbl
12/14/2011	13:23:32	-4	0.0	12.47	156.1	0	

Well	Field	Job Start	Customer	Job Number
HMU Federal 16-16C2 J1	Mamm Creek	Dec/14/2011	Encana	682775

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Solid Fraction NULL	Message
12/14/2011	13:25:12	195	3.4	15.49	157.0	24	
12/14/2011	13:26:02	304	4.6	15.38	160.8	26	
12/14/2011	13:26:52	314	4.6	15.67	163.7	29	
12/14/2011	13:27:35	309	4.6	15.67	167.0	30	Start Mixing Tail Slurry
12/14/2011	13:27:38	307	4.6	15.69	167.2	30	149 sk (31 bbl) of 15.8 Tail
12/14/2011	13:27:42	302	4.6	15.72	167.6	30	
12/14/2011	13:28:32	305	4.6	15.89	171.4	31	
12/14/2011	13:29:22	324	4.6	15.87	175.3	33	
12/14/2011	13:30:01	320	4.6	15.76	178.3	34	Scale Reads 15.7
12/14/2011	13:30:02	314	4.6	15.76	178.3	34	End Tail Slurry
12/14/2011	13:30:12	302	4.6	15.66	179.1	34	
12/14/2011	13:31:02	289	4.6	15.55	183.0	31	
12/14/2011	13:31:52	289	4.6	15.69	186.8	34	
12/14/2011	13:32:42	285	4.6	15.21	190.7	61	
12/14/2011	13:32:49	19	3.8	14.54	191.2	66	Reset Total, Vol = 35.20 bbl
12/14/2011	13:32:53	-1	0.7	14.24	191.4	0	Drop Top Plug
12/14/2011	13:32:54	-1	0.2	14.22	191.4	0	Start Displacement
12/14/2011	13:32:55	-1	0.1	14.21	191.4	0	Plug Away
12/14/2011	13:33:32	-6	0.0	14.21	191.4	0	
12/14/2011	13:34:22	-6	0.9	11.79	191.5	0	
12/14/2011	13:35:12	-5	0.0	9.80	191.7	0	
12/14/2011	13:36:02	20	0.9	9.10	191.7	42	
12/14/2011	13:36:52	185	4.7	9.99	194.0	67	
12/14/2011	13:37:42	270	6.7	9.18	198.4	39	
12/14/2011	13:38:32	250	6.7	8.67	204.0	20	
12/14/2011	13:39:22	245	6.7	8.51	209.6	13	
12/14/2011	13:40:12	235	6.7	8.39	215.2	8	
12/14/2011	13:41:02	236	6.7	8.34	220.8	6	
12/14/2011	13:41:52	243	6.7	8.31	226.4	6	
12/14/2011	13:42:42	265	6.7	8.30	232.1	5	
12/14/2011	13:43:22	290	6.7	8.29	236.5	5	Good Returns
12/14/2011	13:43:32	297	6.7	8.29	237.7	4	
12/14/2011	13:44:22	298	6.7	8.29	243.3	4	
12/14/2011	13:45:12	148	3.5	8.28	247.0	3	
12/14/2011	13:45:19	146	3.5	8.29	247.4	3	70 bbls of Cement to Surface
12/14/2011	13:46:02	152	3.5	8.31	249.9	3	
12/14/2011	13:46:52	163	3.5	8.30	252.8	3	
12/14/2011	13:47:42	170	3.5	8.30	255.7	3	
12/14/2011	13:48:32	178	3.5	8.30	258.6	3	
12/14/2011	13:49:22	184	3.5	8.32	261.5	3	
12/14/2011	13:50:12	187	3.4	8.32	264.3	6	
12/14/2011	13:51:02	203	3.4	8.31	267.2	0	
12/14/2011	13:51:52	206	3.4	8.32	270.1	0	
12/14/2011	13:52:42	216	3.4	8.32	272.9	0	
12/14/2011	13:53:32	203	3.4	8.32	275.8	0	
12/14/2011	13:54:22	237	3.4	8.32	278.7	0	
12/14/2011	13:55:12	246	3.4	8.32	281.5	0	
12/14/2011	13:56:02	272	3.4	8.32	284.4	0	
12/14/2011	13:56:52	342	4.7	8.32	287.6	0	
12/14/2011	13:57:42	350	4.7	8.32	291.5	0	
12/14/2011	13:58:32	371	4.7	8.32	295.4	0	
12/14/2011	13:59:22	390	4.7	8.32	299.3	0	
12/14/2011	14:00:12	411	4.7	8.32	303.2	0	
12/14/2011	14:01:02	444	4.7	8.32	307.1	0	

Well	Field	Job Start	Customer	Job Number
HMU Federal 16-16C2 J1	Mamm Creek	Dec/14/2011	Encana	682775

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Solid Fraction NULL	Message
12/14/2011	14:02:42	476	2.1	8.32	312.5	0	
12/14/2011	14:03:32	474	2.1	8.31	314.2	0	
12/14/2011	14:04:22	440	2.1	8.31	316.0	0	
12/14/2011	14:05:12	389	2.1	8.32	317.8	0	
12/14/2011	14:06:02	349	2.1	8.31	319.6	0	
12/14/2011	14:06:52	359	0.0	8.32	320.1	0	
12/14/2011	14:07:42	891	1.7	8.32	320.3	0	
12/14/2011	14:08:16	1019	0.0	8.32	320.5	0	Reset Total, Vol = 129.18 bbl
12/14/2011	14:08:27	1015	0.0	8.32	320.5	0	Bump Top Plug
12/14/2011	14:08:28	1018	0.0	8.32	320.5	0	End Displacement
12/14/2011	14:08:32	1014	0.0	8.32	320.5	0	
12/14/2011	14:08:41	1015	0.0	8.32	320.5	0	Check Floats
12/14/2011	14:08:45	1013	0.0	8.32	320.5	0	Floats Hold
12/14/2011	14:08:47	1014	0.0	8.32	320.5	0	Remark
12/14/2011	14:09:22	1009	0.0	8.32	320.5	0	
12/14/2011	14:10:12	315	0.0	8.32	320.5	0	
12/14/2011	14:11:02	-23	0.0	8.32	320.5	0	

Post Job Summary

Average Pump Rates, bbl/min				Volume of Fluid Injected, bbl			
Slurry	N2	Mud	Maximum Rate	Total Slurry	Mud	Spacer	N2
4.8			6.8	157.0	0.0	20.0	

Treating Pressure Summary, psi					Breakdown Fluid		
Maximum	Final	Average	Bump Plug to	Breakdown	Type	Volume	Density
3207	-25	347				bbl	lb/gal

Avg. N2 Percent	Designed Slurry Volume	Displacement	Mix Water Temp		
%	0.0 bbl	121.0 bbl	degF	Cement Circulated to Surface? ☐	Volume bbl
				Washed Thru Perfs ☐	To ft

Customer or Authorized Representative	Schlumberger Supervisor		
David Wall	Jeff Eulberg	Circulation Lost ☐	Job Completed ☐
		-	-