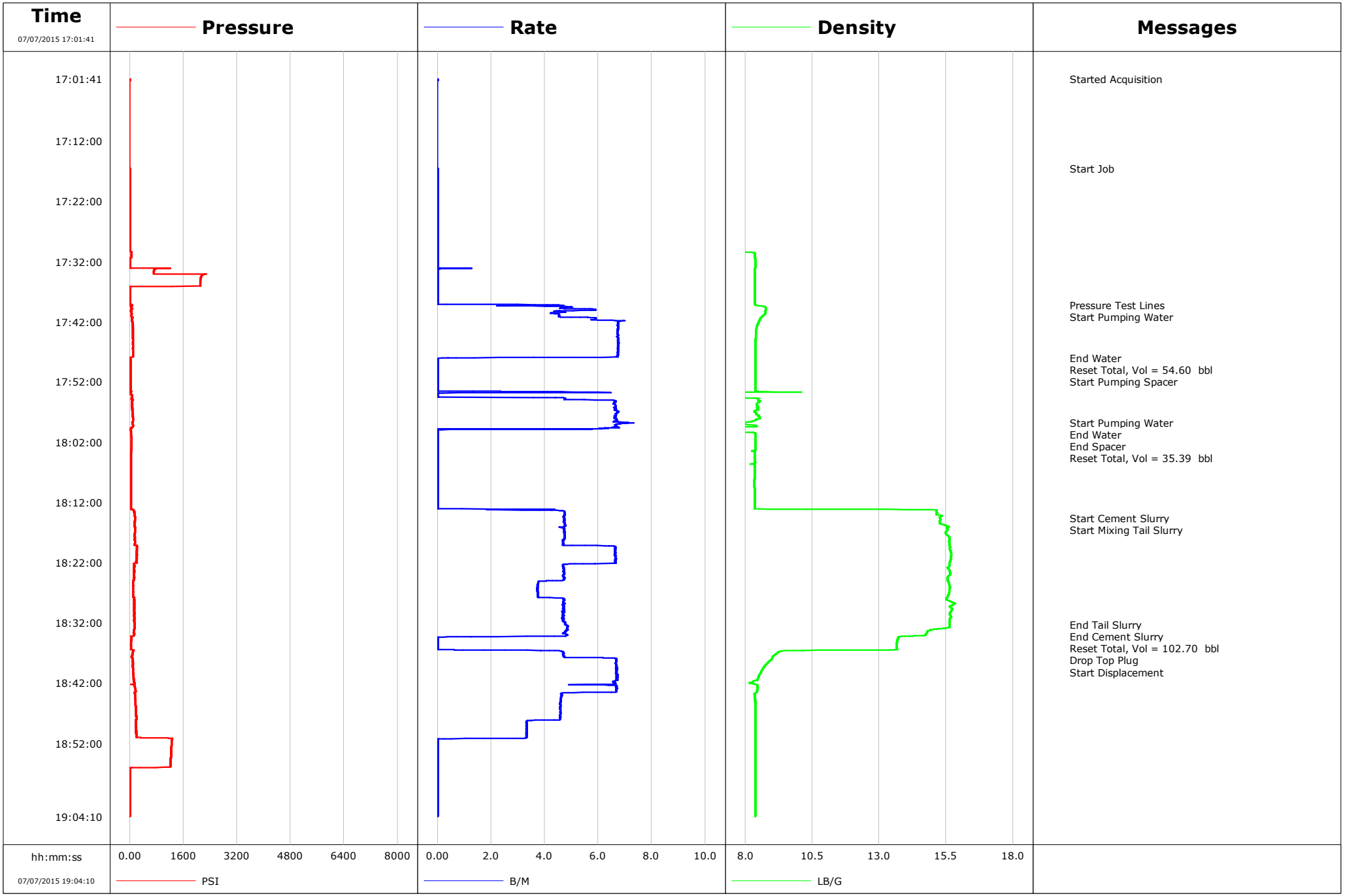
Schlumberger

Cementing Job Report

CemCAT v1.6

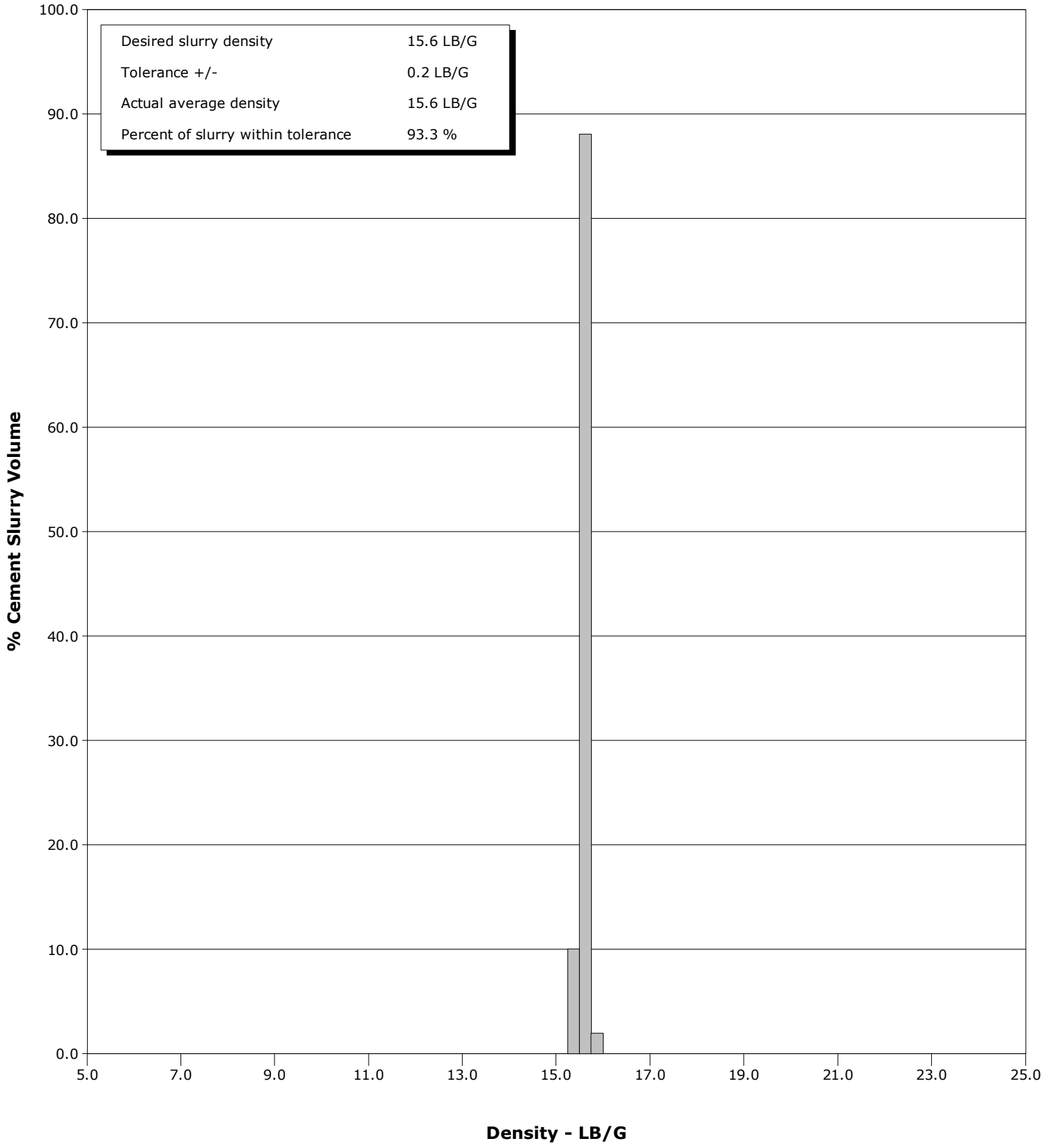
Well	MIP Unit 3H	**Client**	NORTHEAST NATURAL ENERGY LLC
Field	UNDESIGNAT	**SIR No.**	DCHA-00052
Engineer	TJ Williams	**Job Type**	13 3/8" Surface
Country	USA	**Job Date**	07-07-2015



Cementing Qa/Qc Density Report

Well	MIP Unit 3H	**Client**	NORTHEAST NATURAL ENERGY LLC
Field	UNDESIGNAT	**SIR No.**	DCHA-00052
Engineer	TJ Williams	**Job Type**	13 3/8" Surface
Country	USA	**Job Date**	07-07-2015

Cement Slurry - 07/07/2015 18:14:36 to 07/07/2015 18:32:18



Schlumberger

Cementing Service Report

Customer	Job Number
NORTHEAST NATURAL ENERGY LLC	DCHA-00052

Well	Location (legal)	Schlumberger Location	Job Start
MIP Unit 3H			Jul/07/2015

Field	Formation Name/Type	Deviation	Bit Size	Well MD	Well TVD
UNDESIGNAT		deg	17.5 in	508.0 ft	508.0 ft

County	Monongalia	State/Provinc	West Virginia
Well Master	0631643025	API/UWI	4706101707H000

BHP	BHST	BHCT	Pore Press. Gradient
500 psi	65 degF	74 degF	lb/gal

Rig Name	Drilled For	Service Via
US Energy 9	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	13 3/8" Surface

Max. Allowed Tub. Press	Max. Allowed Ann. Press	WH Connection
psi	psi	Single Cement head

Casing/Liner

Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
508.0	13.4	54.5	110	
50.0	20.0	94.0		

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

Service Instructions

Cement 13 3/8" Surface
Ptest 2000psi
Top 600psi
54bbl Water
25bbl gel
10bbl water
100bbl cement @ 15.6ppg (470sks, 1.2cuft/sk, 5.251gps, D901 Class A, 2% S001, 0.2% D046, 0.13lb/sk D130)
Drop top plug
71bbl displacement

Treat Down	Displacement	Packer Type	Packer Depth
Casing	bbl		ft

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

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

Lift Pressure	205 psi
Pipe Rotated	☐
Pipe Reciprocated	☐

No. Centralizers	Top Plugs	Bottom Plugs

Cement Head Type	

Job Scheduled For	Arrived on Location	Leave Location
Jul/07/2015 15:30	Jul/07/2015 15:30	Jul/07/2015 19:30

Casing Tools		Squeeze Job	
Shoe Type	Float	Squeeze Type	
Shoe Depth	507.8 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	462.9 ft	Sqz. Total Vol.	bbl

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Stage Volume BBL	Displacement Volume BBL	Total Slurry Volume BBL	Message
07/07/2015	17:01:41	0	0.0	-0.00	0.0	0.0	0.0	Started Acquisition
07/07/2015	17:16:31	3	0.0	-0.00	0.0	0.0	0.0	Start Job
07/07/2015	17:16:41	3	0.0	-0.00	0.0	0.0	0.0	
07/07/2015	17:17:26	2	0.0	-0.00	0.0	0.0	0.0	
07/07/2015	17:18:11	2	0.0	-0.00	0.0	0.0	0.0	
07/07/2015	17:18:56	2	0.0	-0.00	0.0	0.0	0.0	
07/07/2015	17:19:41	2	0.0	-0.00	0.0	0.0	0.0	
07/07/2015	17:20:26	2	0.0	-0.00	0.0	0.0	0.0	
07/07/2015	17:21:11	3	0.0	-0.00	0.0	0.0	0.0	
07/07/2015	17:21:56	2	0.0	-0.00	0.0	0.0	0.0	
07/07/2015	17:22:41	1	0.0	-0.00	0.0	0.0	0.0	
07/07/2015	17:23:26	3	0.0	-0.00	0.0	0.0	0.0	
07/07/2015	17:24:11	3	0.0	-0.00	0.0	0.0	0.0	
07/07/2015	17:24:56	3	0.0	-0.00	0.0	0.0	0.0	
07/07/2015	17:25:41	3	0.0	-0.00	0.0	0.0	0.0	
07/07/2015	17:26:26	3	0.0	-0.00	0.0	0.0	0.0	
07/07/2015	17:27:11	3	0.0	-0.00	0.0	0.0	0.0	
07/07/2015	17:27:56	4	0.0	-0.00	0.0	0.0	0.0	
07/07/2015	17:28:41	4	0.0	-0.00	0.0	0.0	0.0	
07/07/2015	17:29:26	3	0.0	-0.00	0.0	0.0	0.0	
07/07/2015	17:30:11	7	0.0	-0.00	0.0	0.0	0.0	

Well	Field	Job Start	Customer	Job Number
MIP Unit 3H 3H	UNDESIGNAT	Jul/07/2015	NORTHEAST NATURAL ENERGY LLC	DCHA-00052

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Stage Volume BBL	Displacement Volume BBL	Total Slurry Volume BBL	Message
07/07/2015	17:31:41	10	0.0	8.38	0.0	0.0	0.0	
07/07/2015	17:32:26	10	0.0	8.38	0.0	0.0	0.0	
07/07/2015	17:33:11	879	0.5	8.37	0.1	0.0	0.1	
07/07/2015	17:33:56	716	0.0	8.37	0.1	0.0	0.1	
07/07/2015	17:34:41	2121	0.0	8.37	0.1	0.0	0.1	
07/07/2015	17:35:26	2106	0.0	8.37	0.1	0.0	0.1	
07/07/2015	17:36:11	11	0.0	8.37	0.1	0.0	0.1	
07/07/2015	17:36:56	11	0.0	8.37	0.1	0.0	0.1	
07/07/2015	17:37:41	12	0.0	8.37	0.1	0.0	0.1	
07/07/2015	17:38:26	12	0.0	8.37	0.1	0.0	0.1	
07/07/2015	17:39:11	62	3.6	8.37	0.3	0.0	0.3	Pressure Test Lines
07/07/2015	17:39:13	61	4.4	8.38	0.4	0.0	0.4	Start Pumping Water
07/07/2015	17:39:56	60	5.9	8.76	3.7	0.0	3.7	
07/07/2015	17:40:41	60	4.5	8.75	7.4	0.0	7.4	
07/07/2015	17:41:26	78	5.9	8.57	11.0	0.0	11.0	
07/07/2015	17:42:11	80	6.7	8.50	15.8	0.0	15.8	
07/07/2015	17:42:56	93	6.7	8.43	20.8	0.0	20.8	
07/07/2015	17:43:41	87	6.7	8.40	25.9	0.0	25.9	
07/07/2015	17:44:26	91	6.7	8.39	30.9	0.0	30.9	
07/07/2015	17:45:11	92	6.7	8.39	36.0	0.0	36.0	
07/07/2015	17:45:56	90	6.7	8.38	41.0	0.0	41.0	
07/07/2015	17:46:41	96	6.7	8.38	46.1	0.0	46.1	
07/07/2015	17:47:26	91	6.7	8.38	51.1	0.0	51.1	
07/07/2015	17:47:59	8	1.4	8.38	54.6	0.0	54.6	End Water
07/07/2015	17:48:00	13	0.7	8.38	54.6	0.0	54.6	Reset Total, Vol = 54.60 bbl
07/07/2015	17:48:01	11	0.4	8.38	0.0	0.0	54.6	Start Pumping Spacer
07/07/2015	17:48:11	16	0.0	8.39	0.0	0.0	54.6	
07/07/2015	17:48:56	22	0.0	8.38	0.0	0.0	54.6	
07/07/2015	17:49:41	23	0.0	8.38	0.0	0.0	54.6	
07/07/2015	17:50:26	24	0.0	8.38	0.0	0.0	54.6	
07/07/2015	17:51:11	23	0.0	8.38	0.0	0.0	54.6	
07/07/2015	17:51:56	23	0.0	8.38	0.0	0.0	54.6	
07/07/2015	17:52:41	24	0.0	8.39	0.0	0.0	54.6	
07/07/2015	17:53:26	24	0.0	8.38	0.0	0.0	54.6	
07/07/2015	17:54:11	71	0.0	-0.00	1.2	0.0	55.8	
07/07/2015	17:54:56	107	5.0	8.46	3.0	0.0	57.6	
07/07/2015	17:55:41	75	6.6	8.43	7.9	0.0	62.5	
07/07/2015	17:56:26	75	6.6	8.49	12.8	0.0	67.4	
07/07/2015	17:57:11	88	6.7	8.41	17.8	0.0	72.4	
07/07/2015	17:57:56	98	6.6	8.53	22.8	0.0	77.4	
07/07/2015	17:58:41	89	7.1	8.00	27.8	0.0	82.4	
07/07/2015	17:58:42	78	7.1	7.93	27.9	0.0	82.5	Start Pumping Water
07/07/2015	17:59:26	106	6.6	8.42	32.9	0.0	87.5	
07/07/2015	17:59:55	22	0.5	0.38	35.4	0.0	90.0	End Water
07/07/2015	17:59:56	21	0.1	0.18	35.4	0.0	90.0	End Spacer
07/07/2015	17:59:57	21	0.1	0.18	35.4	0.0	90.0	Reset Total, Vol = 35.39 bbl
07/07/2015	18:00:11	34	0.0	-0.00	0.0	0.0	90.0	
07/07/2015	18:00:56	44	0.0	8.37	0.0	0.0	90.0	
07/07/2015	18:01:41	44	0.0	8.37	0.0	0.0	90.0	
07/07/2015	18:02:26	45	0.0	8.37	0.0	0.0	90.0	
07/07/2015	18:03:11	45	0.0	8.37	0.0	0.0	90.0	
07/07/2015	18:03:56	43	0.0	8.36	0.0	0.0	90.0	
07/07/2015	18:04:41	43	0.0	8.35	0.0	0.0	90.0	
07/07/2015	18:05:26	42	0.0	8.37	0.0	0.0	90.0	

Well	Field	Job Start	Customer	Job Number
MIP Unit 3H 3H	UNDESIGNAT	Jul/07/2015	NORTHEAST NATURAL ENERGY LLC	DCHA-00052

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Stage Volume BBL	Displacement Volume BBL	Total Slurry Volume BBL	Message
07/07/2015	18:06:56	41	0.0	8.36	0.0	0.0	90.0	
07/07/2015	18:07:41	41	0.0	8.36	0.0	0.0	90.0	
07/07/2015	18:08:26	41	0.0	8.35	0.0	0.0	90.0	
07/07/2015	18:09:11	41	0.0	8.35	0.0	0.0	90.0	
07/07/2015	18:09:56	41	0.0	8.36	0.0	0.0	90.0	
07/07/2015	18:10:41	41	0.0	8.36	0.0	0.0	90.0	
07/07/2015	18:11:26	40	0.0	8.36	0.0	0.0	90.0	
07/07/2015	18:12:11	40	0.0	8.36	0.0	0.0	90.0	
07/07/2015	18:12:56	40	0.0	8.36	0.0	0.0	90.0	
07/07/2015	18:13:41	133	4.7	15.16	2.5	0.0	92.5	
07/07/2015	18:14:26	165	4.7	15.27	6.0	0.0	96.0	
07/07/2015	18:14:36	155	4.7	15.26	6.8	0.0	96.8	Start Cement Slurry
07/07/2015	18:14:37	154	4.7	15.26	6.9	0.0	96.9	Start Mixing Tail Slurry
07/07/2015	18:15:11	141	4.7	15.26	9.6	0.0	99.5	
07/07/2015	18:15:56	145	4.8	15.55	13.1	0.0	103.1	
07/07/2015	18:16:41	157	4.7	15.53	16.6	0.0	106.6	
07/07/2015	18:17:26	147	4.7	15.54	20.2	0.0	110.2	
07/07/2015	18:18:11	152	4.7	15.63	23.8	0.0	113.7	
07/07/2015	18:18:56	156	4.7	15.62	27.3	0.0	117.3	
07/07/2015	18:19:41	220	6.6	15.63	31.8	0.0	121.8	
07/07/2015	18:20:26	210	6.6	15.67	36.7	0.0	126.7	
07/07/2015	18:21:11	193	6.6	15.67	41.7	0.0	131.7	
07/07/2015	18:21:56	213	6.6	15.63	46.7	0.0	136.7	
07/07/2015	18:22:41	138	4.7	15.60	50.7	0.0	140.7	
07/07/2015	18:23:26	129	4.7	15.63	54.2	0.0	144.2	
07/07/2015	18:24:11	130	4.7	15.60	57.8	0.0	147.8	
07/07/2015	18:24:56	125	4.7	15.54	61.3	0.0	151.3	
07/07/2015	18:25:41	99	3.7	15.62	64.2	0.0	154.2	
07/07/2015	18:26:26	96	3.7	15.62	67.0	0.0	157.0	
07/07/2015	18:27:11	98	3.7	15.59	69.8	0.0	159.8	
07/07/2015	18:27:56	125	4.7	15.50	72.7	0.0	162.7	
07/07/2015	18:28:41	137	4.7	15.79	76.2	0.0	166.2	
07/07/2015	18:29:26	131	4.7	15.64	79.8	0.0	169.8	
07/07/2015	18:30:11	141	4.7	15.66	83.3	0.0	173.3	
07/07/2015	18:30:56	130	4.7	15.69	86.8	0.0	176.8	
07/07/2015	18:31:41	129	4.7	15.64	90.3	0.0	180.3	
07/07/2015	18:32:16	134	4.8	15.63	93.1	0.0	183.1	End Tail Slurry
07/07/2015	18:32:18	134	4.8	15.63	93.3	0.0	183.2	End Cement Slurry
07/07/2015	18:32:26	143	4.8	15.62	93.9	0.0	183.9	
07/07/2015	18:33:11	130	4.9	14.90	97.5	0.0	187.5	
07/07/2015	18:33:56	132	4.8	14.74	101.1	0.0	191.1	
07/07/2015	18:34:18	46	1.2	13.75	102.7	0.0	192.7	Reset Total, Vol = 102.70 bbl
07/07/2015	18:34:20	47	0.4	13.72	0.0	0.0	192.7	Drop Top Plug
07/07/2015	18:34:41	45	0.0	13.69	0.0	0.0	192.7	
07/07/2015	18:35:26	43	0.0	13.66	0.0	0.0	192.7	
07/07/2015	18:36:11	44	0.0	13.66	0.0	0.0	192.7	
07/07/2015	18:36:56	88	4.7	9.23	1.8	1.7	194.5	
07/07/2015	18:37:41	51	4.7	9.02	5.4	5.3	198.0	
07/07/2015	18:38:26	94	6.7	8.89	10.2	10.0	202.8	
07/07/2015	18:39:11	98	6.7	8.73	15.2	15.0	207.8	
07/07/2015	18:39:56	101	6.7	8.62	20.2	20.0	212.9	
07/07/2015	18:40:41	114	6.7	8.52	25.2	25.0	217.9	
07/07/2015	18:41:26	121	6.7	8.46	30.2	30.1	222.9	
07/07/2015	18:42:11	148	6.6	8.36	35.2	35.0	227.9	

Well	Field	Job Start	Customer	Job Number
MIP Unit 3H 3H	UNDESIGNAT	Jul/07/2015	NORTHEAST NATURAL ENERGY LLC	DCHA-00052

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Stage Volume BBL	Displacement Volume BBL	Total Slurry Volume BBL	Message
07/07/2015	18:43:41	149	4.6	8.38	44.8	44.7	237.5	
07/07/2015	18:44:26	160	4.6	8.37	48.3	48.2	241.0	
07/07/2015	18:45:11	170	4.6	8.37	51.7	51.6	244.4	
07/07/2015	18:45:56	179	4.6	8.37	55.2	55.1	247.9	
07/07/2015	18:46:41	186	4.6	8.37	58.6	58.5	251.3	
07/07/2015	18:47:26	192	4.6	8.37	62.1	62.0	254.7	
07/07/2015	18:48:11	178	3.7	8.37	65.5	65.4	258.1	
07/07/2015	18:48:56	185	3.3	8.37	68.0	67.9	260.6	
07/07/2015	18:49:41	194	3.3	8.37	70.5	70.4	263.1	
07/07/2015	18:50:26	197	3.3	8.37	72.9	72.9	265.6	
07/07/2015	18:51:11	1267	2.6	8.37	75.4	75.4	268.1	
07/07/2015	18:51:56	1247	0.0	8.37	75.5	75.5	268.2	
07/07/2015	18:52:41	1239	0.0	8.37	75.5	75.5	268.2	
07/07/2015	18:53:26	1232	0.0	8.37	75.5	75.5	268.2	
07/07/2015	18:54:11	1227	0.0	8.38	75.5	75.5	268.2	
07/07/2015	18:54:56	1221	0.0	8.38	75.5	75.5	268.2	
07/07/2015	18:55:41	1217	0.0	8.38	75.5	75.5	268.2	
07/07/2015	18:56:26	8	0.0	8.38	75.5	75.5	268.2	
07/07/2015	18:57:11	9	0.0	8.38	75.5	75.5	268.2	
07/07/2015	18:57:56	9	0.0	8.38	75.5	75.5	268.2	
07/07/2015	18:58:41	11	0.0	8.38	75.5	75.5	268.2	
07/07/2015	18:59:26	12	0.0	8.38	75.5	75.5	268.2	
07/07/2015	19:00:11	9	0.0	8.38	75.5	75.5	268.2	
07/07/2015	19:00:56	6	0.0	8.38	75.5	75.5	268.2	
07/07/2015	19:01:41	7	0.0	8.38	75.5	75.5	268.2	
07/07/2015	19:02:26	7	0.0	8.38	75.5	75.5	268.2	
07/07/2015	19:03:11	7	0.0	8.38	75.5	75.5	268.2	

Post Job Summary

Average Pump Rates, bbl/min				Volume of Fluid Injected, bbl			
Slurry	N2	Mud	Maximum Rate	Total Slurry	Mud	Spacer	N2
5.2			7.3	268.2	0.0	90.0	

Treating Pressure Summary, psi					Breakdown Fluid		
Maximum	Final	Average	Bump Plug to	Breakdown	Type	Volume	Density
2274	7	151	1200			bbl	lb/gal

Avg. N2 Percent	Designed Slurry Volume	Displacement	Mix Water Temp	Cement Circulated to Surface?	Volume
%	0.0 bbl	75.5 bbl	72 degF	X	25.0 bbl
				Washed Thru Perfs ☐	To ft

Customer or Authorized Representative	Schlumberger Supervisor	Circulation Lost	Job Completed
Jim Cover	TJ Williams	☐ -	X -