Schlumberger

Cementing Service Report

Customer	Job Number
Noble Energy	DYWB-00024

Well	Location (legal)	Schlumberger Location	Job Start
DPG F 1-24		Cheyenne	May/18/2018

Field	Formation Name/Type	Deviation	Bit Size	Well MD	Well TVD
DJ		deg	in	779.0 ft	779.0 ft

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

Well Master	API/UWI

Rig Name	Drilled For	Service Via
	Gas	Land

Offshore Zone	Well Class	Well Type
	Old	Workover

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

Service Line	Job Type
Cementing	Surface Plug

Max. Allowed Tub. Press	Max. Allowed Ann. Press	WH Connection
psi	psi	2 3/8" 4.7# T/S

Service Instructions

326 sks 1.16ft3/sk 6.35 gps 61 bbls @ 15.8 ppg

15 bbls CW
61 bbls CMT @ 15.8 ppg 295 sks
6.5 bbls CMT @ 15.8 ppg 31 sks TOP OUT

Casing/Liner

Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
516.0	8.6	24.0	J55	8rd
0.0	0.0	0.0		

Tubing/Drill Pipe

T/D	Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
T	779.0	2.4	4.7	j55	EUE
	0.0	0.0	0.0		

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
Tubing	0.0 bbl		ft

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

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

Lift Pressure	psi

Pipe Rotated	Pipe Reciprocated
☐	☐

No. Centralizers	Top Plugs	Bottom Plugs

Cement Head Type

Job Scheduled For	Arrived on Location	Leave Location
May/18/2018	May/18/2018	May/18/2018

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

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
05/18/2018	11:56:26	49	0.0	8.37	0.0	JSA Complete
05/18/2018	11:56:27	49	0.0	8.35	0.0	Start Pumping Wash
05/18/2018	11:58:13	2553	0.0	8.22	1.1	Pressure Test Lines
05/18/2018	12:01:27	361	4.2	8.22	11.3	
05/18/2018	12:06:24	27	0.0	15.03	13.7	End Wash
05/18/2018	12:06:28	27	0.0	15.27	13.7	Reset Total, Vol = 13.75 bbl
05/18/2018	12:06:43	27	0.0	16.09	13.7	Start Cement Slurry
05/18/2018	12:11:29	457	3.8	15.77	30.5	
05/18/2018	12:16:30	580	4.0	15.55	50.3	
05/18/2018	12:21:31	320	3.0	15.59	70.1	
05/18/2018	12:24:08	40	0.0	15.30	74.7	End Cement Slurry
05/18/2018	12:24:46	40	0.0	15.29	74.7	Reset Total, Vol = 60.96 bbl
05/18/2018	13:07:15	40	0.0	11.88	74.7	top out well 6.5 bbls
05/18/2018	13:11:41	36	0.0	11.61	74.7	
05/18/2018	13:16:42	36	0.0	15.92	74.7	
05/18/2018	13:21:43	36	0.0	16.07	74.7	
05/18/2018	13:26:44	36	0.0	16.23	74.7	
05/18/2018	13:31:45	36	0.0	16.58	74.7	
05/18/2018	13:36:46	36	0.0	16.23	74.7	

Well	Field	Job Start	Customer	Job Number
DPG F 1-24	DJ	May/18/2018	Noble Energy	DYWB-00024

Post Job Summary

Average Pump Rates, bbl/min				Volume of Fluid Injected, bbl			
Slurry	N2	Mud	Maximum Rate	Total Slurry	Mud	Spacer	N2
3.6			4.2	67.5	0.0	15.0	

Treating Pressure Summary, psi					Breakdown Fluid		
Maximum	Final	Average	Bump Plug to	Breakdown	Type	Volume	Density
2553	72	146				bbl	lb/gal

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

Customer or Authorized Representative	Schlumberger Supervisor	Circulation Lost	Job Completed
CJ Smith	R Pippin	☐	☒
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Schlumberger

Cementing Service Report

Customer	Job Number
Noble Energy	DYWB-00023

Well	Location (legal)	Schlumberger Location	Job Start
DPG F 1-24		Cheyenne	May/17/2018

Field	Formation Name/Type	Deviation	Bit Size	Well MD	Well TVD
DJ		deg	in	6566.0 ft	6566.0 ft

County	State/Province	BHP	BHST	BHCT	Pore Press. Gradient
Weld	Colorado	psi	degF	degF	lb/gal
Well Master	API/UWI				

Rig Name	Drilled For	Service Via
	Gas	Land

Offshore Zone	Well Class	Well Type
	Old	Workover

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

Service Line	Job Type
Cementing	Nlo & Balanced Plug

Max. Allowed Tub. Press	Max. Allowed Ann. Press	WH Connection
psi	psi	2 3/8" 4.7# T/S

Service Instructions

1st Stage	2nd Stage
20 sks	25 sks
1.53 ft3/sk	1.16 ft3/sk
6.35 gps	5.13 gps
5.4 bbls @ 15.8 ppg	5.2 bbls @ 15.8 ppg
23.9 bbls Displacement	8.1 bbls Displacement
EST TOC W/O tubing 6218 FT	2135 FT
EST TOC with tubing 6180 FT	2098 FT

Casing/Liner

Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
6566.0	4.5	11.6	n80	BUTT
2470.0	4.5	11.6	N80	BUTT

Tubing/Drill Pipe

T/D	Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
T	6566.0	2.4	4.7	j55	EUE
T	2470.0	2.4	4.7	j55	EUE

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
Tubing	23.9 bbl		ft

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

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

Lift Pressure	psi

Pipe Rotated	Pipe Reciprocated
☐	☐

No. Centralizers	Top Plugs	Bottom Plugs

Cement Head Type

Job Scheduled For	Arrived on Location	Leave Location
May/17/2018	May/17/2018	May/17/2018

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

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
05/17/2018	11:29:08	187	2.3	8.12	0.0	JSA Complete
05/17/2018	11:29:44	45	0.0	8.23	0.4	Start Pumping Water
05/17/2018	11:31:14	2503	0.0	8.22	0.5	Pressure Test Lines
05/17/2018	11:34:09	22	0.0	9.51	5.1	
05/17/2018	11:34:30	22	0.0	11.18	5.1	End Water
05/17/2018	11:34:31	22	0.0	11.21	5.1	Reset Total, Vol = 5.09 bbl
05/17/2018	11:36:17	68	0.1	17.00	5.1	Start Cement Slurry
05/17/2018	11:39:01	196	2.3	14.56	11.2	End Cement Slurry
05/17/2018	11:39:04	187	2.3	13.49	11.3	Reset Total, Vol = 6.19 bbl
05/17/2018	11:39:07	178	2.3	12.45	11.4	Start Displacement
05/17/2018	11:39:10	178	2.3	11.63	11.5	
05/17/2018	11:44:11	937	3.5	8.22	27.4	
05/17/2018	11:46:01	27	0.0	7.89	33.5	End Displacement
05/17/2018	11:46:03	27	0.0	8.15	33.5	Reset Total, Vol = 23.9 bbl
05/17/2018	11:46:04	27	0.0	8.21	33.5	End Job
05/17/2018	13:34:26	22	0.0	8.22	33.5	Start Job
05/17/2018	13:34:33	22	0.0	8.22	33.5	
05/17/2018	13:34:34	22	0.0	8.22	33.5	Start Pumping Water
05/17/2018	13:36:43	36	0.1	8.22	38.4	End Water
05/17/2018	13:36:50	45	0.0	8.22	38.4	Reset Total,Vol = 5.04 bbl
05/17/2018	13:37:33	2462	0.0	8.22	38.4	Pressure Test Lines

Well	Field	Job Start	Customer	Job Number
DPG F 1-24	DJ	May/17/2018	Noble Energy	DYWB-00023

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
05/17/2018	13:44:01	168	3.0	10.39	44.8	Start Cement Slurry
05/17/2018	13:44:02	164	3.0	10.15	44.9	End Cement Slurry
05/17/2018	13:44:03	164	3.0	9.94	44.9	Reset Total, Vol = 5.26 bbl
05/17/2018	13:44:04	159	3.0	9.76	45.0	Start Displacement
05/17/2018	13:44:35	77	3.0	7.46	46.3	
05/17/2018	13:46:45	27	1.4	8.08	51.8	End Displacement

Post Job Summary

Average Pump Rates, bbl/min				Volume of Fluid Injected, bbl			
Slurry	N2	Mud	Maximum Rate	Total Slurry	Mud	Spacer	N2
2.7			3.8	10.6	0.0	10.0	

Treating Pressure Summary, psi					Breakdown Fluid		
Maximum	Final	Average	Bump Plug to	Breakdown	Type	Volume	Density
55841	22	283				bbl	lb/gal

Avg. N2 Percent	Designed Slurry Volume	Displacement	Mix Water Temp			
%	10.6 bbl	32.0 bbl	68 degF	Cement Circulated to Surface? ☐	Volume	bbl
				Washed Thru Perfs ☐	To	ft

Customer or Authorized Representative	Schlumberger Supervisor		
CJ Smith	R Pippin	Circulation Lost ☐	Job Completed ☒
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