Schlumberger

Cementing Service Report

Customer	Job Number
Noble	DYWB-00007

Well	Location (legal)	Schlumberger Location	Job Start
Foss 42-23	CWY	Cheyenne	Jan/31/2018

Field	Formation Name/Type	Deviation	Bit Size	Well MD	Well TVD
DJ		deg	In	1770.0 ft	1770.0 ft

County	State/Province	BHP	BHST	BHCT	Pore Press. Gradient
Weld	Colorado	psi	90 degF	80 degF	lb/gal
Well Master	**API/UWI**				

Rig Name	Drilled For	Service Via
Bohler 6	Oil and Gas	Land

Offshore Zone	Well Class	Well Type
	Old	Other

Drilling Fluid Type	Max. Density	Plastic Viscosity
Other	8.40 lb/gal	cP

Service Line	Job Type
Cementing	P & A Shallow Plug

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

Service Instructions

1770 ft plug water and cmt checke and verifed
plug from 1774 ft to 1013 ft
20 bbl cemwash
56.8 bbl cmt @ 15.8ppg 1.16cuft/sk 275sks 5.078gal/sk
3 bbl Disp

Casing/Liner

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

Tubing/Drill Pipe

T/D	Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
T	1770.0	2.4	4.7	N/A	N/A
	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	3.0 bbl		ft

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

Casing/Tubing Secured ☐	1 Hole Vol. Circulated prior to Cement ☐	Casing Tools	Squeeze Job
Lift Pressure psi		Shoe Type	Squeeze Type
Pipe Rotated ☐	Pipe Reciprocated ☐	Shoe Depth ft	Tool Type
No. Centralizers	Top Plugs / Bottom Plugs	Stage Tool Type	Tool Depth ft
Cement Head Type		Stage Tool Depth ft	Tail Pipe Size in
Job Scheduled For: Jan/31/2018	Arrived on Location: Jan/31/2018	Collar Type	Tail Pipe Depth ft
Leave Location: Jan/31/2018		Collar Depth ft	Sqz. Total Vol. bbl

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume NULL	Message
01/31/2018	13:14:26	-120	0.0	8.32	10	Started Acquisition
01/31/2018	13:16:26	-120	0.0	8.32	10	
01/31/2018	13:17:07	-120	0.0	8.32	10	Start Water Ahead
01/31/2018	13:18:26	-106	0.0	8.31	10	
01/31/2018	13:18:45	2737	0.0	8.31	11	End Water Ahead, Vol = 1.60 bbl
01/31/2018	13:18:55	2700	0.0	8.31	5	Pressure Test Lines
01/31/2018	13:19:45	-88	0.0	8.31	11	Pump Chem Wash
01/31/2018	13:20:26	255	3.0	8.33	5	
01/31/2018	13:22:26	219	3.1	8.31	5	
01/31/2018	13:24:26	228	3.1	8.31	5	
01/31/2018	13:26:26	-83	2.3	8.30	11	Reset Total, Vol = 20.01 bbl
01/31/2018	13:28:26	-120	0.0	8.29	10	
01/31/2018	13:30:26	-125	8.7	15.81	10	
01/31/2018	13:30:49	-120	0.0	15.79	12	Reset Total, Vol = 0.02 bbl
01/31/2018	13:30:50	-120	0.0	15.79	12	Start Cement Slurry
01/31/2018	13:32:26	68	3.1	15.70	5	
01/31/2018	13:34:26	17	3.1	15.88	5	
01/31/2018	13:36:26	31	3.1	15.88	5	
01/31/2018	13:38:26	72	3.0	15.81	5	
01/31/2018	13:40:26	109	3.0	15.87	5	
01/31/2018	13:42:26	173	3.0	15.88	5	

Well	Field	Job Start	Customer	Job Number
Foss 42-23	DJ	Jan/31/2018	Noble	DYWB-00007

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume NULL	Message
01/31/2018	13:46:26	251	3.0	15.85	5	
01/31/2018	13:48:26	333	3.1	15.86	5	
01/31/2018	13:48:59	306	3.1	15.84	11	End Cement Slurry
01/31/2018	13:49:00	329	3.1	15.84	12	Reset Total, Vol = 54.79 bbl
01/31/2018	13:49:01	333	3.1	15.78	12	Start Displacement
01/31/2018	13:50:01	-125	2.9	8.37	11	End Displacement
01/31/2018	13:50:02	-134	1.4	8.37	12	Reset Total, Vol = 3.00 bbl

Post Job Summary

Average Pump Rates, bbl/min				Volume of Fluid Injected, bbl			
Slurry	N2	Mud	Maximum Rate	Total Slurry	Mud	Spacer	N2
3.1			8.7	79.5	0.0	0.0	

Treating Pressure Summary, psi					Breakdown Fluid		
Maximum	Final	Average	Bump Plug to	Breakdown	Type	Volume	Density
2741	-125	254				bbl	lb/gal

Avg. N2 Percent	Designed Slurry Volume	Displacement	Mix Water Temp		
%	0.0 bbl	0.0 bbl	80 degF	Cement Circulated to Surface? ☐	Volume bbl
				Washed Thru Perfs ☐	To ft

Customer or Authorized Representative	Schlumberger Supervisor	Circulation Lost	Job Completed
CJ Smith	Richard White	-	-

Schlumberger

Cementing Service Report

Customer	Job Number
Noble	DPJJ-00031

Well	Location (legal)	Schlumberger Location	Job Start
Foss 42-23	CWY	Cheyenne	Feb/01/2018

Field	Formation Name/Type	Deviation	Bit Size	Well MD	Well TVD
DJ		deg	In	1013.0 ft	1013.0 ft

County	State/Province	BHP	BHST	BHCT	Pore Press. Gradient
Weld	Colorado	psi	90 degF	80 degF	lb/gal

Well Master	API/UWI

Rig Name	Drilled For	Service Via
Bohler 6	Oil and Gas	Land

Offshore Zone	Well Class	Well Type
	Old	Other

Drilling Fluid Type	Max. Density	Plastic Viscosity
Other	8.40 lb/gal	cP

Service Line	Job Type
Cementing	P & A

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

Service Instructions

Plug @ 1013 ft/ water and cmt checked and verfied
Plug from 890 ft to 380 ft
10 bbl cemwash
37.5 bbl cmt@15.8ppg 1.16cuft/sk 181 sks 5.078gal/sk
1 bbl Displacement

Casing/Liner

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

Tubing/Drill Pipe

T/D	Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
T	1013.0	2.4	4.7	N/A	N/A
	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	1.0 bbl		ft

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

Casing/Tubing Secured	1 Hole Vol. Circulated prior to Cement	Casing Tools	Squeeze Job

Lift Pressure	psi	Shoe Type	Squeeze Type

Pipe Rotated	Pipe Reciprocated	Shoe Depth	ft	Tool Type	

No. Centralizers	Top Plugs	Bottom Plugs	Stage Tool Type	Tool Depth	ft

Cement Head Type	Stage Tool Depth	ft	Tail Pipe Size	in

Job Scheduled For	Arrived on Location	Leave Location	Collar Type	Tail Pipe Depth	ft
Feb/01/2018	Feb/01/2018	Feb/01/2018			

Collar Depth	ft	Sqz. Total Vol.	bbl

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume NULL	Message
02/01/2018	09:57:05	-129	0.0	8.33	10	Started Acquisition
02/01/2018	09:57:06	-125	0.0	8.33	10	Start Pumping Wash
02/01/2018	09:59:05	-125	0.0	8.33	10	
02/01/2018	10:01:05	-106	0.0	8.32	10	
02/01/2018	10:02:26	2737	0.0	8.32	10	Pressure Test Lines
02/01/2018	10:03:05	-106	0.0	8.32	10	
02/01/2018	10:05:05	-42	1.9	8.33	5	
02/01/2018	10:07:05	91	2.7	8.32	5	
02/01/2018	10:09:05	91	2.8	8.32	5	
02/01/2018	10:10:33	-79	2.1	8.32	5	End Wash
02/01/2018	10:10:34	-83	1.3	8.32	11	Reset Total, Vol = 20.07 bbl
02/01/2018	10:11:05	-111	0.0	8.32	10	
02/01/2018	10:13:05	-134	8.6	14.30	10	
02/01/2018	10:14:08	-125	0.0	15.75	12	Reset Total, Vol = 0.02 bbl
02/01/2018	10:14:09	-125	0.0	15.75	12	Start Cement Slurry
02/01/2018	10:15:05	13	2.6	15.65	5	
02/01/2018	10:17:05	-24	2.6	15.75	5	
02/01/2018	10:19:05	-28	2.6	15.75	5	
02/01/2018	10:21:05	-24	2.6	15.75	5	
02/01/2018	10:23:05	-19	2.5	15.94	5	
02/01/2018	10:25:05	31	2.5	15.91	5	

Well	Field	Job Start	Customer	Job Number
Foss 42-23	DJ	Feb/01/2018	Noble	DPJJ-00031

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume NULL	Message
02/01/2018	10:29:05	8	2.4	16.02	5	
02/01/2018	10:29:17	-28	2.3	15.56	11	End Cement Slurry
02/01/2018	10:29:18	-33	2.2	14.74	12	Reset Total, Vol = 37.84 bbl
02/01/2018	10:29:19	-38	2.2	13.95	12	Start Displacement
02/01/2018	10:29:47	-129	2.3	8.52	5	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
2.6			8.9	37.5	0.0	20.0	

Treating Pressure Summary, psi					Breakdown Fluid		
Maximum	Final	Average	Bump Plug to	Breakdown	Type	Volume	Density
2787	-125	211				bbl	lb/gal

Avg. N2 Percent	Designed Slurry Volume	Displacement	Mix Water Temp		
%	0.0 bbl	1.0 bbl	80 degF	Cement Circulated to Surface? ☐	Volume bbl
				Washed Thru Perfs ☐	To ft

Customer or Authorized Representative	Schlumberger Supervisor		
CJ Smith	Richard White	Circulation Lost ☐	Job Completed ☐
		-	-

Schlumberger

Cementing Service Report

Customer	Job Number
Noble	DYWB-00009

Well	Location (legal)	Schlumberger Location	Job Start
Foss 42-23	CWY	Cheyenne	Feb/02/2018

Field	Formation Name/Type	Deviation	Bit Size	Well MD	Well TVD
DJ		deg	In	479.0 ft	479.0 ft

County	State/Province	BHP	BHST	BHCT	Pore Press. Gradient
Weld	Colorado	psi	90 degF	80 degF	lb/gal

Well Master	API/UWI
630774047	

Rig Name	Drilled For	Service Via
Bohler 6	Oil and Gas	Land

Offshore Zone	Well Class	Well Type
	Old	Other

Drilling Fluid Type	Max. Density	Plastic Viscosity
Other	8.40 lb/gal	cP

Service Line	Job Type
Cementing	P & A Surface Plug

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

Service Instructions

Surface Plug/ water and cmt checked and verified
Plug from 479 ft to surface
5 bbl water
31 bbl cmt@15.8ppg 1.17cuft/sk 149 sks 5.068 gal/sk
1 bbl to top out well @15.8ppg 1.17cuft/sk 5 sks 5.068gal/sk

Total sks used 155

Casing/Liner

Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
479.0	8.6	24.0	N/A	N/A
0.0	0.0	0.0		

Tubing/Drill Pipe

T/D	Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
T	479.0	2.4	4.7	N/A	N/A
	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.
bbl	bbl	bbl	bbl

Casing/Tubing Secured	1 Hole Vol. Circulated prior to Cement	Lift Pressure	Pipe Rotated	Pipe Reciprocated
☐	☐	psi	☐	☐

No. Centralizers	Top Plugs	Bottom Plugs	Cement Head Type

Job Scheduled For	Arrived on Location	Leave Location
Feb/02/2018	Feb/02/2018	Feb/02/2018

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 NULL	Message
02/02/2018	08:49:28	-147	0.0	8.36	10	Started Acquisition
02/02/2018	08:49:31	-147	0.0	8.36	10	Start Pumping Water
02/02/2018	08:51:28	-102	1.0	8.36	5	
02/02/2018	08:53:28	-125	0.0	8.35	5	
02/02/2018	08:55:28	-83	1.7	8.35	5	
02/02/2018	08:55:33	-152	1.0	8.35	5	End Water
02/02/2018	08:55:34	-157	0.6	8.35	11	Reset Total, Vol = 5.12 bbl
02/02/2018	08:57:28	1546	0.0	8.35	10	
02/02/2018	08:57:53	434	0.0	8.35	10	Pressure Test Lines
02/02/2018	08:59:28	-143	0.0	8.35	10	
02/02/2018	09:01:28	-138	0.2	8.45	10	
02/02/2018	09:03:28	-147	8.6	10.11	10	
02/02/2018	09:05:28	-147	9.7	12.25	10	
02/02/2018	09:07:28	-143	9.2	15.69	10	
02/02/2018	09:07:52	-138	0.0	15.68	12	Reset Total, Vol = 0.01 bbl
02/02/2018	09:07:53	-143	0.0	15.68	12	Start Cement Slurry
02/02/2018	09:09:28	-51	2.5	15.98	5	
02/02/2018	09:11:28	-51	2.6	15.96	5	
02/02/2018	09:13:28	-47	2.4	15.78	5	
02/02/2018	09:15:28	-56	2.0	15.51	5	
02/02/2018	09:17:28	-47	2.0	15.98	5	

Well	Field	Job Start	Customer	Job Number
Foss 42-23	DJ	Feb/02/2018	Noble	DYWB-00009

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume NULL	Message
02/02/2018	09:21:28	-38	1.5	15.60	5	
02/02/2018	09:22:40	-42	1.3	15.37	5	End Cement Slurry
02/02/2018	09:23:28	-147	0.0	15.57	5	
02/02/2018	09:25:28	-138	0.0	15.67	10	
02/02/2018	09:27:28	-129	0.0	15.68	10	
02/02/2018	09:29:28	-134	0.0	15.66	10	
02/02/2018	10:03:28	-129	0.0	15.93	10	

Post Job Summary

Average Pump Rates, bbl/min				Volume of Fluid Injected, bbl			
Slurry	N2	Mud	Maximum Rate	Total Slurry	Mud	Spacer	N2
3.3			9.8	37.3	0.0	0.0	

Treating Pressure Summary, psi					Breakdown Fluid		
Maximum	Final	Average	Bump Plug to	Breakdown	Type	Volume	Density
2389	-125	609				bbl	lb/gal

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

Customer or Authorized Representative	Schlumberger Supervisor	Circulation Lost ☐	Job Completed ☐
CJ Smith	Richard White	-	-