

Cement Post Job Report

Client: PDC Energy

Well Name: George 15NA

API #: 05-123-51773

Job Date: April 17, 2024

Job Type: New Well - 5.5" Production String

Cement Company & Contact: EXERO Well Integrity -
Cheve Meyer 720-239-3819

EXERO

TREATMENT REPORT

CLIENT	WELL	RIG	JOB TYPE	THREAD TYPE	WELLHEAD CONNECTION
PDC Energy	George 15NA	True 41	Production	Buttress	5 1/2" HP Cement Head

WELL MD (FT)	WELL TVD (FT)	DEVIATION (DEG)	NUMBER OF STAGES	BHST (DEG)	BHCT (DEG)
17,377	6836	90	1	230	230

PACKER/RETAINER/CIBP/DV TOOL DEPTHS (FT)	TOOL TYPE	TOP OF PERFS (FT)	BOTTOM OF PERFS (FT)	NUMBER OF HOLES

CASING/TUBING/DP DETAILS								
STRING TYPE	GRADE	OD"	WT/FT	ID"	OH SIZE"	% EXCESS LEAD	% EXCESS TAIL	TOTAL DEPTH (FT)
Surface	K55	9.625	36	8.921	12.25			1953
Production	P110	5.5	20	4.778	8.5	0	0	17,366
MAXIMUM CASING/TUBING/DP PSI						MAXIMUM ANNULAR PSI		

Mud Type	OBM	Rotate Y,N	YES	Circulation Data				Water Requirements (bbls)		
Mud ppg		Rate (rpm)	50	Circulate Time (hrs)		1.5	Spacers		160	
Flow Temp		Torque Val.	9000	Circulation Rate (bpm)		10	PSI	1200	Stage 1 Lead	148
Vis. Sec/qt		Time (hr)	FULL	Full Circulation ? (Y,N,P)		Yes			Stage 1 Tail	225
PV (cP)		Pipe Reciprocation		Gas Present (Y,N)		NO	Units		Stage 2 Lead	
Yield Pt		Recip Y,N		Centralizers/Plugs				Stage 2 Tail		
10 sec gel		Stroke (ft)		Quantity & Type		Customer Provided			Displacement	385
10 min gel		Recip time		Top Plug/Type		Customer Provided			Wash up	20
30 min gel		Stuck ?		Bottom Plug/Type		Customer Provided			Total + 10% Safety	1032

Preflush & Spacers		Stage 1 Lead - Class G		Stage 1 Tail - Class G		Stage 2 Lead		Stage 2 Tail		Displacement	
Spacer 1	Spacer	Density	12.9	Density	13.7	Density		Density		Fluid Type	Water
Density	12	Sacks	1643	Sacks	1426	Sacks		Sacks		Dens. ppg	8.33
Volume	160	Vol/bbls	319.0	Vol/bbls	347.9	Vol/bbls	0.0	Vol/bbls	0.0	Vol. bbl	385
Rate	10	Rate	10	Rate	10	Rate		Rate		Rate bpm	10
Spacer 2		Yield	1.09	Yield	1.37	Yield		Yield		Clay Stay?	
Density		Gal/Sk	3.77	Gal/Sk	6.63	Gal/Sk		Gal/Sk		Biocide ?	YES
Volume		% Excess	0	% Excess	0	% Excess		% Excess		Slow @ bbl	365
Rate		TOL (ft)	993	TOT (ft)	8653	TOL (ft)		TOT (ft)		Bump PSI	3000

Final Displacement (bbls)	385
Bump Plug?	YES
Final Bump Pressure (psi)	3500
Full Returns throughout job?	FULL
Vol. away/Time when returns lost	NA
Vol. away when returns were regained	NA
Spacer to Surface?	YES
Spacer volume returned (bbls)	112
Cement to surface?	NO
Cement volume to surface stage 1	NA
Cement volume to surface stage 2	NA

Surface Top Out Details-Pumped		Job Summary & Chems Used	
Cement Type		MFC 47 (gal)	112
Dens. ppg		MFC 67 (gal)	160
Sacks qty		Defoamer (gal)	35
Gal/sk		Biocide (gal)	20
Yield		Corr. Inhib (gal)	
Lbs. of chloride used		Fiber (lbs)	
Top out pipe used ?		Chloride (lbs)	
Feet of top out pipe		Retarder (lbs)	
Annulus holding?		Clay Stay (gal)	
Sodium Silicate Used		Other	

JOB LOG

CLIENT	WELL	RIG	JOB TYPE	START DATE	Ambient Conditions		
PDC Energy	George 15NA	True 41	Production	4/17/2024	Temp / Hum / Air Press 51 Deg F / 54% 24.89 in		
DATE (dd/mm)	TIME (hh:mm)	DENSITY (ppg)	RATE (bpm)	VOL. (bbl)	TOTAL VOL.	PRESSURE	TREATMENT COMMENTS
4/16/2024	10:00:00 PM						CREW CALLED OUT FOR AN ON LOCATION TIME OF 06:00 4/17/24
4/17/2024	5:00:00 AM						CREW ARRIVES ON LOCATION/CHECK IN WITH CO REP/CALCULATE JOB
	6:00:00 AM						CASING LANDED/CIRCULATE WELL/SPOT IN AND RIG UP EQUIPMENT
	7:30:00 AM						SAFETY MEETING
	7:50:00 AM						RIG UP FLOOR/DROP 1ST BOTTOM PLUG
	8:13:00 AM	8.3	3.0	5	5	900	FILL LINES
	8:16:00 AM	8.3	1.0	1	1	7010	PRESSURE TEST
	8:19:00 AM	12	10.0	160	160	2000	PUMP 160 BBLS OF SPACER AT 12 PPG (112 BBLS RETURNED TO SURFACE)
	8:37:00 AM						SHUT IN/DROP 2ND BOTTOM PLUG
	8:40:00 AM	12.9	10.0	319	319	2400	PUMP 319 BBLS OF LEAD AT 12.9 PPG - TOL 993' (1643 SKS, 1.09 YLD, 3.77 GPS, 148 MXH2O)
	9:15:00 AM	13.7	10.0	348	348	2000	PUMP 348 BBLS OF TAIL AT 13.7 PPG - TOT 8653' (1426 SKS, 1.37 YLD, 6.63 GPS, 225 MXH2O)
	9:54:00 AM	8.3	10.0	8	8	1000	PUMP 8 BBLS OF SUGAR WATER
	9:56:00 AM						SHUT IN/WASHUP PUMPS AND LINES/DROP TOP PLUG
	10:00:00 AM	8.3	10.0			1000	BEGIN DISPLACEMENT USING FRESHWATER WITH BIOCIDES IN ALL
	10:07:00 AM	8.3	10.0	50	50	2200	FRESHWATER DISPLACEMENT
	10:12:00 AM	8.3	10.0	50	100	2950	FRESHWATER DISPLACEMENT
	10:18:00 AM	8.3	10.0	50	150	3700	FRESHWATER DISPLACEMENT
	10:23:00 AM	8.3	10.0	50	200	3900	FRESHWATER DISPLACEMENT
	10:25:00 AM	8.3	8.0	30	230	3500	FRESHWATER DISPLACEMENT/SWAPPED TO OPEN TOPS
	10:29:00 AM	8.3	8.0	20	250	3800	FRESHWATER DISPLACEMENT
	10:32:00 AM	8.3	8.0	20	270	3800	FRESHWATER DISPLACEMENT/SPACER VISIBLE AT OPEN TOPS (CALCULATED)
	10:35:00 AM	8.3	8.0	30	300	3900	FRESHWATER DISPLACEMENT
	10:41:00 AM	8.3	8.0	50	350	3950	FRESHWATER DISPLACEMENT
	10:43:00 AM	8.3	4.0	15	365	3000	FRESHWATER DISPLACEMENT/SLOWED RATE TO LAND PLUG
	10:49:00 AM	8.3	4.0	20	385	3500	BUMP PLUG/RECEIVED CALCULATED SPACER TO SURFACE/WENT 500 OVER FCP
	10:53:00 AM	8.3	2.7			3500	PRESSURE UP TO BURST DISK
	10:54:00 AM	8.3	2.7	2	2	4800	DISC BURST
	10:55:00 AM	8.3	2.7	5	5	2900	PUMP 5 BBL WET SHOE
	11:00:00 AM	8.3					CHECK FLOATS/FLOATS HELD/RECEIVED 4 BBLS BACK
	11:10:00 AM	8.3	5.0	40	40	150	RIG IN TO FLUSH STACK/PUMP 40 BBLS TO CLEAN OUT BOP
	11:19:00 AM						RIG DOWN/FINISH PAPERWORK
	12:19:00 PM						DEPART LOCATION

George 15NA Production Pump Chart – Pressure / Rate / Density

— discharge pressure ds psi — backup density lbm/galUS — combined rate bbl/min

