

Cement Post Job Report

Client: PDC Energy

Well Name: George 13N

API #: 05-123-51787

Job Date: April 12, 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 13N	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)
17,313		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			1955
Production	P110	5.5	20	4.778	8.5	0	0	17,313
MAXIMUM CASING/TUBING/DP PSI						MAXIMUM ANNULAR PSI		

Mud Type	OBM	Rotate Y,N	Yes	Circulation Data				Water Requirements (bbls)		
Mud ppg	10.2	Rate (rpm)		Circulate Time (hrs)		1HR	Spacers		160	
Flow Temp	122	Torque Val.	13000	Circulation Rate (bpm)		12	PSI	1750	Stage 1 Lead	148
Vis. Sec/qt	60	Time (hr)	3	Full Circulation ? (Y,N,P)		Yes			Stage 1 Tail	243
PV (cP)	18	Pipe Reciprocation		Gas Present (Y,N)		No	Units		Stage 2 Lead	
Yield Pt	12	Recip Y,N		Centralizers/Plugs				Stage 2 Tail		
10 sec gel	6	Stroke (ft)		Quantity & Type		Customer Provided			Displacement	384
10 min gel	10	Recip time		Top Plug/Type		Customer Provided			Wash up	20
30 min gel	13	Stuck ?		Bottom Plug/Type		Customer Provided			Total + 10% Safety	1051

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	1533	Sacks		Sacks		Dens. ppg	8.33
Volume	160	Vol/bbls	319.0	Vol/bbls	374.0	Vol/bbls	0.0	Vol/bbls	0.0	Vol. bbl	384
Rate	10	Rate	10	Rate	10	Rate		Rate		Rate bpm	10
Spacer 2		Yield	1.09	Yield	1.37	Yield		Yield		Clay Stay?	No
Density		Gal/Sk	3.77	Gal/Sk	6.63	Gal/Sk		Gal/Sk		Biocide ?	Yes
Volume		% Excess	0	% Excess	0	% Excess		% Excess		Slow @ bbl	364
Rate		TOL (ft)	367	TOT (ft)	7909	TOL (ft)		TOT (ft)		Bump PSI	3600

Final Displacement (bbls)	384
Bump Plug?	Yes
Final Bump Pressure (psi)	3600
Full Returns throughout job?	Full
Vol. away/Time when returns lost	
Vol. away when returns were regained	
Spacer to Surface?	Yes
Spacer volume returned (bbls)	142
Cement to surface?	No
Cement volume to surface stage 1	
Cement volume to surface stage 2	

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 13N	True 41	Production	4/12/2012	Temp / Hum / Air Press 45 Deg F / 49% / 25.00in		
DATE (dd/mm)	TIME (hh:mm)	DENSITY (ppg)	RATE (bpm)	VOL. (bbl)	TOTAL VOL.	PRESSURE	TREATMENT COMMENTS
4/11/2024	7:00:00 PM						ARRIVED ON LOCATION
4/11/2024	10:10:00 PM						RIG UP
4/11/2024	11:30:00 PM						SAFETY MEETING
4/11/2024	11:50:00 PM						DROP BOTTOM PLUG
4/11/2024	11:55:00 PM	8.3		3	3	860	FILL LINES FRESH WATER
4/11/2024	11:57:00 PM					8000	PRESSURE TEST TO 8000 PSI
4/11/2024	11:59:00 PM	12	10.0	0	0	2400	BEGIN SPACER
4/12/2024	12:05:00 AM	12	10.0	50	50	2000	SPACER
4/12/2024	12:11:00 AM	12	10.0	100	100	1750	SPACER
4/12/2024	12:16:00 AM	12	10.0	160	160	1630	TOTAL SPACER PUMPED
4/12/2024	12:23:00 AM						SHUT DOWN TO DROP SECOND PLUG
4/12/2024	12:25:00 AM	12.9	9.0	0	0	1500	BEGIN LEAD CEMENT
4/12/2024	12:33:00 AM	12.9	9.0	50	50	1860	LEAD CEMENT
4/12/2024	12:36:00 AM	12.9	9.0	100	100	1808	LEAD CEMENT
4/12/2024	12:40:00 AM	12.9	9.0	150	150	1800	LEAD CEMENT
4/12/2024	12:45:00 AM	12.9	9.0	200	200	1819	LEAD CEMENT
4/12/2024	12:50:00 AM	12.9	9.0	250	250	1892	LEAD CEMENT
4/12/2024	12:55:00 AM	12.9	9.0	300	300	1950	LEAD CEMENT
4/12/2024	12:57:00 AM	12.9	9.0	319	319	1900	TOTAL LEAD PUMPED
4/12/2024	1:03:00 AM	13.7	10.0	0	0	2100	BEGIN TAIL CEMENT
4/12/2024	1:08:00 AM	13.7	10.0	50	50	1900	TAIL CEMENT
4/12/2024	1:12:00 AM	13.7	10.0	100	100	1850	TAIL CEMENT
4/12/2024	1:14:00 AM	13.7	10.0	150	150	1340	TAIL CEMENT
4/12/2024	1:20:00 AM	13.7	9.0	200	200	1270	TAIL CEMENT
4/12/2024	1:24:00 AM	13.7	9.0	250	250	1450	TAIL CEMENT
4/12/2024	1:30:00 AM	13.7	10.0	300	300	1553	TAIL CEMENT
4/12/2024	1:36:00 AM	13.7	10.0	350	350	1700	TAIL CEMENT
4/12/2024	1:40:00 AM	13.7	10.0	374	374	1750	TOTAL TAIL CEMENT
4/12/2024	1:43:00 AM	8.3	10.0			1400	10 BBL SUGAR WATER
4/12/2024	1:45:00 AM						WASH PUMP & LINES
4/12/2024	1:49:00 AM						DROP TOP PLUG
4/12/2024	1:54:00 AM	8.3	10.0	0	0	2300	BEGIN DISPLACEMENT
4/12/2024	2:00:00 AM	8.3	10.0	50	50	2650	DISPLACEMENT
4/12/2024	2:05:00 AM	8.3	10.0	100	100	3320	DISPLACEMENT
4/12/2024	2:10:00 AM	8.3	10.0	150	150	3960	DISPLACEMENT
4/12/2024	2:16:00 AM	8.3	10.0	200	200	4150	DISPLACEMENT
4/12/2024	2:19:00 AM	8.3	10.0	242	242	4200	OVER BOARD TO 4 SIDED TANKS WITH CALCULATED SPACER TO SURFACE AT 142 BBLS
4/12/2024	2:21:00 AM	8.3	10.0	250	250	4350	DISPLACEMENT
4/12/2024	2:26:00 AM	8.3	10.0	300	300	4370	DISPLACEMENT
4/12/2024	2:32:00 AM	8.3	10.0	350	350	4300	DISPLACEMENT
4/12/2024	2:34:00 AM	8.3	4.0	364	364	3100	SLOW RATE TO LAND PLUG 500 PSI OVER
4/12/2024	2:37:00 AM	8.3	4.0	384	384	3600	LANDED PLUG CALCULATED AT 384 BBLS
4/12/2024	2:43:00 AM	8.3	4.0			5100	ONLINE TO BURST PLUG/ BURSTED AT 5100 PSI/ PUMP 3BBL WET SHOE
4/12/2024	2:49:00 AM						CHECK FLOATS / FLOATS HELD / 5BBLS BACK
4/12/2024	2:55:00 AM						FLUSH STACK
4/12/2024	3:10:00 AM						RIG DOWN AND DEPART LOACTION

George 13N Production Pump Chart – Pressure / Rate / Density

Chart Report

