

## Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	3/25/2020
Job End Date:	4/5/2020
State:	Texas
County:	Andrews
API Number:	42-003-48218-00-00
Operator Name:	Throne Petroleum
Well Name and Number:	Andrews University 29-32 1H
Latitude:	32.44594920
Longitude:	-102.37985170
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	9,641
Total Base Water Volume (gal):	21,154,140
Total Base Non Water Volume:	



### Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
CS-1, Clay Stabilizer (Cationic)	QESPP	Clay Control					
				Listed Below			
NE-1, Non Emulsifier (Nonionic)	QESPP	Non-Emulsifier/Surfactant					

				Listed Below			
FR-2, Friction Reducer (Anionic)	QESPP	Friction Reducer					
				Listed Below			
CIA-1, Corrosion Inhibitor <350°F	QESPP	Acid Corrosion Inhibitor					
				Listed Below			
BIO-4L, Liquid Biocide (Glut/Quat)	QESPP	Biocide					
				Listed Below			
MaxSurf (Surfactant/N.E./Remediation)	QESPP	Surfactant					
				Listed Below			
100 Mesh Sand	QESPP	Proppant, Scouring, Fill					
				Listed Below			
15% Uninhibited HCL Acid (22° Baume)	QESPP	Etching, Dissolving, Cleaning					
				Listed Below			
40/70 Regional Sand	QESPP	Proppant, Scouring, Fill					
				Listed Below			
Items above are Trade Names with the exception of Base Water . Items below are the individual ingredients.							
			Crystalline silica quartz	14808-60-7	100.00000	0.06691	
			Crystalline silica quartz	14808-60-7	100.00000	0.06687	

			Water	7732-18-5	85.00000	0.00761	
			Hydrochloric acid	7647-01-0	15.00000	0.00134	
			(Mineral oil) Light hydrotreated petroleum distillate	64742-47-8	19.00000	0.00009	
			Methanol	67-56-1	10.00000	0.00006	
			Benzyl-C12-16-alkyldimethyl ammonium chlorides	68424-85-1	30.00000	0.00006	
			Methanol	67-56-1	20.00000	0.00004	
			Ethoxylated alcohol	68551-12-2	5.00000	0.00003	
			Sodium chloride	7647-14-5	5.00000	0.00003	
			Ammonium persulfate	7727-54-0	90.00000	0.00002	
			Glutaraldehyde	111-30-8	10.00000	0.00002	
			Methanol	67-56-1	80.00000	0.00001	
			Ethanol	64-17-5	5.00000	0.00001	
			Isopropanol	67-63-0	5.00000	0.00001	
			Methanol	67-56-1	80.00000	0.00001	
			Diaethanolamine	111-42-2	20.00000	0.00000	
			Propargyl alcohol	107-19-7	10.00000	0.00000	
			Butoxyethanol	111-76-2	10.00000	0.00000	
			Glycerine	56-81-5	5.00000	0.00000	
			Calcium peroxide	1305-79-9	1.00000	0.00000	

\* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water

\*\* Information is based on the maximum potential for concentration and thus the total may be over 100%

\*\*\* If you are calculating a percentage of total ingredients do not add the water volume below the green line to the water volume above the green line

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.

Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)