

## Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	9/26/2016
Job End Date:	10/3/2016
State:	Texas
County:	Andrews
API Number:	42-003-46899-00-00
Operator Name:	Pacesetter Energy, LLC
Well Name and Number:	University JV 14 8H
Latitude:	32.37759630
Longitude:	-102.67076820
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	4,470
Total Base Water Volume (gal):	3,304,432
Total Base Non Water Volume:	0



### 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
Water	Schlumberger	N/A					
			Water (Including Mix Water Supplied by Client)*	7732-18-5		83.62422	
J475	Schlumberger	Breaker					
				Listed Below			

B492	Schlumberger	Water Gelling Agent					
				Listed Below			
U042	Schlumberger	Chelating Agent					
				Listed Below			
J610	Schlumberger	Crosslinker					
				Listed Below			
J501	Schlumberger	Additive					
				Listed Below			
M300	Schlumberger	M300					
				Listed Below			
A286	Schlumberger	Acid Corrosion Inhibitor					
				Listed Below			
B526†	Schlumberger	Non-Emulsifying Agent					
				Listed Below			
H036	Schlumberger	Acid					
				Listed Below			
S012-2040	Schlumberger	Propping Agent					

				Listed Below			
J218	Schlumberger	Breaker					
				Listed Below			
L058	Schlumberger	Iron Control Agent					
				Listed Below			
L065	Schlumberger	Scale Inhibitor					
				Listed Below			
Items above are Trade Names with the exception of Base Water . Items below are the individual ingredients.							
			Quartz, Crystalline silica	14808-60-7	95.99591	15.72007	
			Hydrochloric acid	7647-01-0	1.53722	0.25173	
			Guar gum	9000-30-0	1.23831	0.20278	
			Potassium borate	1332-77-0	0.31410	0.05144	
			Glass fibers	60676-86-0	0.17416	0.02852	
			Glutaraldehyde	111-30-8	0.14669	0.02402	
			Potassium hydroxide	1310-58-3	0.11608	0.01901	
			Diammonium peroxidisulphate	7727-54-0	0.11263	0.01844	
			Glycerol	56-81-5	0.10242	0.01677	
			Ethylene glycol	107-21-1	0.08078	0.01323	
			2-Propenoic acid, polymer with sodium phosphinate	129898-01-7	0.07556	0.01237	
			Propan-2-ol	67-63-0	0.06953	0.01139	
			Polymer of fatty acid	Proprietary	0.04568	0.00748	TEST - Trade Secret Texas Comment
			Tetrasodium ethylenediaminetetraacetate	64-02-8	0.02676	0.00438	

			Alcohols, C11-14-iso, C13-rich, ethoxylated	78330-21-9	0.02433	0.00398	
			Sodium chloride	7647-14-5	0.01526	0.00250	
			Sodium erythorbate	6381-77-7	0.01296	0.00212	
			Vinylidene chloride/methylacrylate copolymer	25038-72-6	0.00918	0.00150	
			Calcium Chloride	10043-52-4	0.00771	0.00126	
			Fatty acid, tall-oil reaction products with acetophenone	68188-40-9	0.00601	0.00098	
			Alcohols, C12-C16, ethoxylated	68551-12-2	0.00501	0.00082	
			Isodecanol w/6-7 Moles Ethylene Oxide	26183-52-8	0.00337	0.00055	
			Silicon Dioxide	7631-86-9	0.00337	0.00055	
			Sodium hydroxide	1310-73-2	0.00265	0.00043	
			Sodium Glycolate (impurity)	2836-32-0	0.00217	0.00036	
			Cinnamaldehyde	104-55-2	0.00220	0.00036	
			Solid Unsaturated Polyester Resin	39382-21-3	0.00176	0.00029	
			2,2"-oxydiethanol (impurity)	111-46-6	0.00082	0.00013	
			Trisodium Ethylenediaminetetraacetate (impurity)	150-38-9	0.00072	0.00012	
			Disodium Ethylene Diamine Tetra Acetate (impurity)	139-33-3	0.00072	0.00012	
			Amines, tallow alkyl, ethoxylated	61791-26-2	0.00064	0.00011	
			Trisodium nitrilotriacetate (impurity)	5064-31-3	0.00036	0.00006	
			Magnesium silicate hydrate (talc)	14807-96-6	0.00028	0.00005	
			Potassium chloride (impurity)	7447-40-7	0.00024	0.00004	

			Dodecyl poly (oxyethylene) ether	9002-92-0	0.00027	0.00004	
			Glycols, polyethylene, monotetradecyl ether	27306-79-2	0.00019	0.00003	
			poly(tetrafluoroethylene)	9002-84-0	0.00012	0.00002	

\* 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)