

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	12/19/2017
Job End Date:	1/10/2018
State:	Texas
County:	Winkler
API Number:	42-495-33850-00-00
Operator Name:	Jagged Peak Energy
Well Name and Number:	UTL LJ BELDIN 1211-17 4H
Latitude:	31.65954200
Longitude:	-103.21112700
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	11,539
Total Base Water Volume (gal):	25,988,600
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	Operator	Carrier					
			Water	7732-18-5	100.00000	92.60587	
Sand, White	BJ Services	Proppant					
				Listed Below			

HCl, 10.1 - 15%	BJ Services	Acidizing					
				Listed Below			
Other Chemical (s)	BJ Services	See Trade Name (s) List					
			Water	7732-18-5	85.00000	0.40300	
FRW-15A	BJ Services	Friction Reducer					
				Listed Below			
FraCare FBS 80	BJ Services	Surfactant					
				Listed Below			
BIOC11139A	BJ Services	Biocide					
				Listed Below			
MAQUAT 12:3	BJ Services	Biocide					
				Listed Below			
GBW-5	BJ Services	Breaker					
				Listed Below			
CI-14	BJ Services	Corrosion Inhibitor					
				Listed Below			
NE-35	BJ Services	Non-emulsifier					

				Listed Below			
InnoFrac DP NW-TM	BJ Services	Diverter					
				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	6.73741	
			Hydrochloric Acid	7647-01-0	15.00000	0.06436	
			Copolymer of Acrylamide and Sodium Acrylate	25987-30-8	40.00000	0.06129	
			Hydrotreated Light Distillate	64742-47-8	30.00000	0.04597	
			Alkyl sultaine	Trade Secret	10.00000	0.01098	
			Ethylene glycol	107-21-1	10.00000	0.01098	
			Benzyl-(C12-C16 Alkyl)- Dimethyl-Ammonium Chloride	68424-85-1	30.00000	0.00960	
			Sorbitan Monooleate	1338-43-8	5.00000	0.00766	
			Nonyl Phenol Ethoxylate	127087-87-0	5.00000	0.00766	
			Glutaraldehyde	111-30-8	12.50000	0.00598	
			Glycerol	56-81-5	5.00000	0.00549	
			Oxyalkylated Alcohol	Trade Secret	5.00000	0.00549	
			Organic Sulfonic Acid Salt	Trade Secret	5.00000	0.00549	
			Sodium Chloride	7647-14-5	5.00000	0.00549	
			Ammonium Persulfate	7727-54-0	100.00000	0.00260	
			Ethanol	64-17-5	5.00000	0.00205	
			Methanol	67-56-1	100.00000	0.00081	
			Quaternary Ammonium Compound	68424-85-1	1.80000	0.00040	
			Alkyl Quaternary Compound	7173-51-5	1.20000	0.00027	
			Nonionic glycol ester	68400-71-5	25.00000	0.00025	
			Polyoxyalkylenes	68951-67-7	30.00000	0.00024	

			Poly lactide resin	9051-89-2	98.00000	0.00023	
			Propylene Glycol	57-55-6	15.00000	0.00015	
			Fatty Acids	61790-12-3	10.00000	0.00008	
			Modified Thiourea Polymer	68527-49-1	7.00000	0.00006	
			Olefin	64743-02-8	5.00000	0.00004	
			Propargyl Alcohol	107-19-7	5.00000	0.00004	
			Sodium octylimodpropionate	94441-92-6	3.00000	0.00003	
			Benzenesulfonic acid, hexadecyl (sulfophenoxy)-, disodium salt	65143-89-7	2.00000	0.00002	
			Sodium lauriminodipropionate	14960-06-6	1.00000	0.00001	
			Formaldehyde	50-00-0	1.00000	0.00001	

* 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)