

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	8/18/2017
Job End Date:	8/18/2017
State:	Texas
County:	Crane
API Number:	42-103-36564-00-00
Operator Name:	BAM Permian Operating, LLC
Well Name and Number:	University Roland #2
Latitude:	31.45241200
Longitude:	-102.39462600
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	9,600
Total Base Water Volume (gal):	297,466
Total Base Non Water Volume:	22,490



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	Base Carrier Fluid					
			Water	7732-18-5	100.00000	85.89407	
Sand	Multiple Suppliers	Proppants					
			Silicon Dioxide	14808-60-7	100.00000	8.70025	
SLC, SDC, TLC, THS, PowerProp, OptiProp, SpearProp, CoolSet	Santrol Proppants	Proppants					
			Crystalline Silica(Quartz)	14808-60-7	98.00000	3.25933	
			Phenol-formaldehyde Novolak Resin	9003-35-4	5.00000	0.16629	
15% Hydrochloric Acid	Reagent	Scale Dissolver					
			Water	7732-18-5	85.00000	1.31912	
			36% Hydrochloric Acid	7647-01-0	15.00000	0.23279	
SG-15G	ACE Completions	Gelling Agents					
			Petroleum Distillate	64742-47-8	60.00000	0.16475	
			Guar Gum	9000-30-0	50.00000	0.13729	
			Surfactant	Proprietary	10.00000	0.02746	CAS # Proprietary
			Bentonite Clay	Proprietary	10.00000	0.02746	CAS # is Proprietary
XL-335	Finoric LLC	Crosslinkers					

			Water	7732-18-5	75.00000	0.07996	
			Sodium Hydroxide	1310-73-2	40.00000	0.04264	
			Sodium Borate or Sodium Tetaborate Borates, Tera, Sodium Salts	1303-96-4	30.00000	0.03198	CAS NO.(Decahydrate)
NE-227	ACE Completions	Non and De- Emulsifiers					
			Water	7732-18-5	90.00000	0.08108	
			Proprietary	Proprietary	15.00000	0.01351	Proprietary Data
			Poly(oxy-1,2-ethanediyl), alpha hexyl-omega-hydroxy	31726-34-8	5.00000	0.00450	
			Alcohol	68609-68-7	5.00000	0.00450	
			Isotridecanol, ethoxylated	9043-30-5	5.00000	0.00450	
			Solvent Naptha(Petroleum), Heavy Aromatic	64742-94-5	1.00000	0.00090	
Superset W	Sanrol	Resin Activator					
			Poly(oxyethylene)nonyphenol ether	9016-45-9	54.00000	0.01646	
			Methanol	67-56-1	50.00000	0.01524	
FE-4	Finoric LLC	Iron Controller / Reducers					
			Water	7732-18-5	52.00000	0.00579	
			Citric Acid Annhydrous	77-92-9	52.00000	0.00579	
B-15	Multiple Suppliers	Iron Controller / Reducers					
			Water	7732-18-5	80.00000	0.00655	
			Tetrakis (hydroxymethyl) phosphonium sulfate	55566-30-8	20.00000	0.00164	
GB-2	Multiple Suppliers	Gel Breakers/Delayed Breakers					
			Ammonium Persulfate	7727-54-0	100.00000	0.00381	
I-123	Finoric LLC	Acid Corrosion Inhibitors					
			Ethylene Glycol	107-21-1	40.00000	0.00122	
			N,N-Dimethylformamide	68-12-2	20.00000	0.00061	
			1-Decanol	112-30-1	10.00000	0.00030	
			Tar based, quinoline derived, benzyl chloride-quaternized	72480-70-7	10.00000	0.00030	
			Ethoxylated Nonylphenol	68412-54-4	10.00000	0.00030	
			2-Butoxyethanol	111-76-2	10.00000	0.00030	
			Cinnamaldehyde	104-55-2	10.00000	0.00030	
			1-Octanol	111-87-5	2.50000	0.00008	
			Isopropyl Alcohol	67-63-0	2.50000	0.00008	
			Triethyl Phosphate	78-40-0	2.50000	0.00008	

Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.

* Total Water Volume sources may include fresh water, produced water, and/or recycled water

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

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)

