

Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date	10/29/2012
State:	TX
County:	Gaines
API Number:	4216537646
Operator Name:	Citation Oil & Gas
Well Name and Number:	Exxon Fee #21
Longitude:	-102.7363
Latitude:	32.6213
Long/Lat Projection:	NAD83
Production Type:	Oil
True Vertical Depth (TVD):	4,875
Total Water Volume (gal)*:	29,980

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 (Clean - Acid)	Citation Oil & Gas	Carrier / Base Fluid	Water	7732-18-5	100.00%	86.66742%	
FBK-133	Frac Specialists	BREAKERS AND BREAKER CATALYSTS	Ammonium Persulfate	7727 - 54 - 0	98.00%	0.05791%	
			Amine Salt	Trade Secret	100.00%	0.03360%	
FXL-101L	Frac Specialists	CROSSLINKERS AND DELAYERS	Potassium Metaborate	13709-94-9	30.00%	0.02912%	
			Potassium Hydroxide	1310-58-3	5.00%	0.00485%	
			Ethylene Glycol	107-21-1	10.00%	0.00971%	
			Water	7732-18-5	75.00%	0.07281%	
FGA-15L	Frac Specialists	GELLING AGENTS FOR WATER	Petroleum Distillates	Trade Secret	60.00%	0.26345%	
			Polysaccharide blend	Trade Secret	60.00%	0.26345%	
FNE-334LN	Frac Specialists	NON-EMULSIFIER AND DE-EMULSIFIERS	Methyl Alcohol	67-56-1	15.00%	0.00903%	
			Cocamide Diethanolamine Salt	68603-42-9	10.00%	0.00602%	
			Diethanolamine	111-42-2	5.00%	0.00301%	
			Ethylene Glycol Monobutyl Ether	111-76-2	15.00%	0.00903%	
			Water	732-18-5	66.00%	0.03974%	
16-30 Premium Brown Sand	Frac Specialists	PROPPANT	Crystalline silica quartz	14808-60-7	100.00%	8.96461%	
16/30 Super LC	Frac Specialists	PROPPANT	Crystalline Silica (quarts)	14808-60-7	97.00%	3.51579%	
			Phenol-Formaldehyde Novolak Resin	9003-35-4	5.00%	0.18123%	
			Hexamethylenetetramine	100-97-0	1.00%	0.03625%	
Superset-W	Frac Specialists	Resin Activators	Methyl Alcohol	67-56-1	50.00%	0.02718%	
			Polyethylene glycol nonylphenyl ether	9016-45-9	50.00%	0.02718%	

* 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%

All component information listed was obtained from the supplier’s Material Safety Data Sheets (MSDS). As such, the Operator is not responsible for inaccurate and/or incomplete information. Any questions regarding the content of the MSDS should be directed to the supplier who provided it. The Occupational Safety and Health Administration’s (OSHA) regulations govern the criteria for the disclosure of this information. Please note that Federal Law protects "proprietary", "trade secret", and "confidential business information" and the criteria for how this information is reported on an MSDS is subject to 29 CFR 1910.1200(i) and Appendix D.

