

Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date	12/14/2012
State:	California
County:	Kern County
API Number:	0403048678
Operator Name:	Occidental of Elk Hills, Inc.
Well Name and Number:	73E-34R
Longitude:	-119.484811
Latitude:	35.277325
Long/Lat Projection:	NAD83
Production Type:	Oil
True Vertical Depth (TVD):	4,371
Total Water Volume (gal)*:	188,586

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
Produced Water (Oxy Provided), YF122 Flex	Schlumberge r	Activator , Surfactant , Breaker, Stabilizing Agent, Gelling Agent, Crosslinker, Clay Control Agent, Industrial Antimicrobial, Emulsion Preventer, Propping Agent	Water (Including Mix Water Supplied by Client)*	-		73.97430%	
			Crystalline silica	14808-60-7	98.41547%	25.61331%	
			Phenolic resin	9003-35-4	1.27672%	0.33227%	
			Carbohydrate polymer	Proprietary	0.67460%	0.17557%	
			Aliphatic polyol	Proprietary	0.28846%	0.07507%	
			Propan-2-ol	67-63-0	0.22603%	0.05883%	
			2,2',2"-nitrilotriethanol	102-71-6	0.19960%	0.05195%	
			Oxyalkylated Alcohol (2)	Proprietary	0.14063%	0.03660%	
			Diammonium peroxidisulphate	7727-54-0	0.13885%	0.03614%	
			Potassium hydroxide	1310-58-3	0.13000%	0.03383%	
			Zirconium dichloride oxide	7699-43-6	0.07865%	0.02047%	
			Polyethylene glycol monohexyl ether	31726-34-8	0.07434%	0.01935%	
			Aliphatic co-polymer	Proprietary	0.03570%	0.00929%	
			Methanol	67-56-1	0.02032%	0.00529%	
			Diocetyl sulfosuccinate sodium salt	Proprietary	0.01423%	0.00370%	
			Alkylalcohol ethoxylated	Proprietary	0.01423%	0.00370%	
			Oxyalkylated Alcohol (1)	Proprietary	0.01423%	0.00370%	
			Non-crystalline silica	7631-86-9	0.01039%	0.00270%	
			Tetrakis(hydroxymethyl)phosphonium sulfate	55566-30-8	0.01039%	0.00270%	

* 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%

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