Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date	1/6/2013
State:	California
County:	Kern County
API Number:	0403049243
Operator Name:	Occidental of Elk Hills, Inc.
Well Name and Number:	83-19R
Longitude:	-119.536624
Latitude:	35.307464
Long/Lat Projection:	NAD83
Production Type:	Oil
True Vertical Depth (TVD):	3,038
Total Water Volume (gal)*:	16,835

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	Schlumberger	Activator , Surfactant , Breaker, Breaker Aid, Gelling Agent, Crosslinker, Clay Control Agent, Industrial Antimicrobial, Emulsion Preventer, Propping Agent	Water (Including Mix Water Supplied by Client)*	-		67.72709%	
			Crystalline silica	14808-60-7	98.36233%	31.74438%	
			Phenolic resin	9003-35-4	4.91812%	1.58722%	
			Propan-2-ol	67-63-0	0.51844%	0.16732%	
			Oxyalkylated Alcohol (2)	Proprietary	0.43875%	0.14160%	
			Carbohydrate polymer	Proprietary	0.42066%	0.13576%	
			Aliphatic polyol	Proprietary	0.17061%	0.05506%	
			Diammonium peroxidisulphate	7727-54-0	0.16409%	0.05296%	
			2,2`,2"-nitrilotriethanol	102-71-6	0.09795%	0.03161%	
			Potassium hydroxide	1310-58-3	0.07202%	0.02324%	
			Polyethylene glycol monohexyl ether	31726-34-8	0.06312%	0.02037%	
			Zirconium dichloride oxide	7699-43-6	0.05004%	0.01615%	
			Aliphatic co-polymer	Proprietary	0.03282%	0.01059%	
			Dioctyl sulfosuccinate sodium salt	Proprietary	0.01328%	0.00429%	
			Alkylalcohol ethoxylated	Proprietary	0.01328%	0.00429%	
			Oxyalkylated Alcohol (1)	Proprietary	0.01328%	0.00429%	
			Non-crystalline silica	7631-86-9	0.01074%	0.00347%	
			Tetrakis(hydroxymethyl)phosphonium sulfate	55566-30-8	0.01074%	0.00347%	

* 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)