Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date	2/18/2013	
State:	California	
County:	Kern	
API Number:	04-030-49847	
Operator Name:		Occidental of Elk Hills, Inc.
Well Name and Number:	82-19R	
Longitude:	-119.536605	
Latitude:	35.309129	
Long/Lat Projection:	NAD83	
Production Type:	Oil	
True Vertical Depth (TVD):	3,069	
Total Water Volume (gal)*:	21,439	

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), YF125 Flex	Schlumberge r	Activator, Surfactant, Breaker, Breaker Aid, Gelling Agent, Crosslinker, Clay Control Agent, Scale Inhibitor, Industrial Antimicrobial, Emulsion Preventer, Propping Agent	Water (Including Mix Water Supplied by Client)*	-		83.91724%	
			Crystalline silica	14808-60-7	93.79883%	15.08544%	
			Phenolic resin	9003-35-4	1.91426%	0.30787%	
			Guar gum	9000-30-0	0.94185%	0.15148%	
			Propan-2-ol	67-63-0	0.75913%	0.12209%	
			Alcohol, C7-9-iso, C8, ethoxylated	78330-19-5	0.58224%	0.09364%	
			2,2`,2"-nitrilotriethanol	102-71-6	0.47052%	0.07567%	
			Potassium borate	1332-77-0	0.35735%	0.05747%	
			Diammonium peroxidisulphate	7727-54-0	0.28871%	0.04643%	
			Zirconium dichloride oxide	7699-43-6	0.16306%	0.02622%	
			Glycerol	56-81-5	0.15881%	0.02554%	
			Ethane-1,2-diol	107-21-1	0.14577%	0.02344%	
			2-Propenoic acid, polymer with sodium phosphinate	129898-01-7	0.13988%	0.02250%	
			Potassium hydroxide	1310-58-3	0.11673%	0.01877%	
			Polyethylene glycol monohexyl ether	31726-34-8	0.10201%	0.01641%	
			Crosslinked PO/EO-block polymer	68123-18-2	0.03824%	0.00615%	
			Vinylidene chloride/methylacrylate copolymer	25038-72-6	0.03048%	0.00490%	
			Sodium chloride	7647-14-5	0.02871%	0.00462%	
			Non-crystalline silica	7631-86-9	0.02006%	0.00323%	
			Tetrakis(hydroxymethyl)phosphonium	55566-30-8	0.01750%	0.00281%	

	sulfate			
	Calcium chloride	10043-52-4	0.01325%	0.00213%
	Alkyl (c10-c14) alcohols, ethoxylated	66455-15-0	0.01274%	0.00205%
	Alcohol, C11-14, ethoxylated	78330-21-9	0.01271%	0.00204%
	Methyl oxirane polymer with oxirane	9003-11-6	0.01260%	0.00203%
	Dioctyl sulfosuccinate sodium salt	577-11-7	0.00595%	0.00096%
	Dicoco dimethyl quaternary ammonium chloride	61789-77-3	0.00447%	0.00072%
	Magnesium silicate hydrate (talc)	14807-96-6	0.00160%	0.00026%
	2,2'-oxydiethanol	111-46-6	0.00147%	0.00024%
	Propylene glycol	57-55-6	0.00127%	0.00021%
	Sodium hydroxide	1310-73-2	0.00074%	0.00012%
	2-ethylhexan-1-ol	104-76-7	0.00017%	0.00003%
	Potassium oleate	143-18-0	0.00008%	0.00001%
	Oleic acid	112-80-1	0.00007%	0.00001%
	Acetic acid, potassium salt	127-08-2	0.00002%	< 0.00001%
	Acetic acid	64-19-7	< 0.00001%	< 0.00001%

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

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

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