

Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date:	1/18/2012
State:	California
County/Parish	Kern County
API Number:	0402962732
Operator Name:	OXY USA ELK HILLS
Well Name and Number:	3-48-26R
Longitude:	-119.4749
Latitude:	35.282795
Long/Lat Projection:	NAD83
Production Type:	Oil
True Vertical Depth (TVD):	2800
Total Water Volume (gal)*:	150,318

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
YF120ST	Schlumberger	Activator , Breaker, Surfactant , Crosslinker, Gelling Agent, Clay Control Agent, Bactericide, Demulsifier, Propping Agent	Water (Including Mix Water Supplied by Client)*	-		72.78215%	
			Crystalline silica	14808-60-7	97.89965%	26.64618%	
			Guar gum	9000-30-0	0.56717%	0.15437%	
			Phenolic resin	9003-35-4	0.44534%	0.12121%	
			Alcohol, C7-9-iso, C8, ethoxylated	78330-19-5	0.20291%	0.05523%	
			Propan-2-ol	67-63-0	0.19148%	0.05212%	
			1, 2, 3 - Propanetriol	56-81-5	0.16437%	0.04474%	
			Methanol	67-56-1	0.15261%	0.04154%	

			Sodium tetraborate decahydrate	1303-96-4	0.09862%	0.02684%	
			Decyl-dimethyl amine oxide	2605-79-0	0.09095%	0.02475%	
			Diammonium peroxidisulphate	7727-54-0	0.07737%	0.02106%	
			Alcohol, C9-11-iso, C10, ethoxylated	78330-20-8	0.02615%	0.00712%	
			Ethoxylated propoxylated 4-nonylphenol-formaldehyde resin	30846-35-6	0.01955%	0.00532%	
			Polyvinylidene chloride	9002-85-1	0.01875%	0.00510%	
			Heavy aromatic naphtha	64742-94-5	0.01321%	0.00359%	
			Alcohol, C11-14, ethoxylated	78330-21-9	0.01294%	0.00352%	
			Quaternary ammonium compounds chlorides derivatives	68989-00-4	0.01294%	0.00352%	
			Non-crystalline silica	7631-86-9	0.00794%	0.00216%	
			Tetrakis(hydroxymethyl)phosphonium sulfate	55566-30-8	0.00639%	0.00174%	
			Poly(oxy-1,2-ethanediyl)	25322-68-3	0.00581%	0.00158%	
			Poly(dimethylaminoethyl methacrylate dimethyl sulfate quat)	27103-90-8	0.00461%	0.00126%	
			Naphtalene (impurity)	91-20-3	0.00264%	0.00072%	
			Decyldimethyl amine (impurity)	1120-24-7	0.00145%	0.00040%	
			Hydrogen peroxide (impurity)	7722-84-1	0.00087%	0.00024%	
			Magnesium silicate hydrate (talc)	14807-96-6	0.00047%	0.00013%	

<p>* Total Water Volume sources may include fresh water, produced water, and/or recycled water</p> <p>** Information is based on the maximum potential for concentration and thus the total may be over 100%</p> <p>Report ID: RPT-3516 (Generated on 5/7/2012 4:37 PM)</p> <p>Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)</p>							