Hydraulic Fracturing Fluid Product Component Information Disclosure

2/22/2012	Fracture Date:
California	State:
Kern County	County/Parish
0402915840	API Number:
Occidental of Elk Hills,	Operator Name:
Inc.	
535-20B	Well Name and Number:
-119.528830144974	Longitude:
35.212838672646	Latitude:
NAD83	Long/Lat Projection:
Oil	Production Type:
3,587	True Vertical Depth (TVD):
35,097	Total Water Volume (gal)*:

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
WF125, YF125ST	Schlumberger	Activator , Surfactant , Breaker, Crosslinker, Gelling Agent, Clay Control Agent, Bactericide, Demulsifier, Propping Agent	Water (Including Mix Water Supplied by Client)*	_		76.66175%	
			Crystalline silica	14808-60-7	94.51981%	22.05927%	
			Phenolic resin	9003-35-4	1.92898%	0.45019%	
			Guar gum	9000-30-0	0.98473%	0.22982%	
			Propan-2-ol	67-63-0	0.78833%	0.18398%	
			Alcohol, C7-9-iso, C8, ethoxylated	78330-19-5	0.75623%	0.17649%	
			1, 2, 3 - Propanetriol	56-81-5	0.22013%	0.05137%	
			Diammonium	7727-54-0	0.20972%	0.04894%	

	peroxidisulphate				
	Methanol	67-56-1	0.17854%	0.04167%	
	Sodium tetraborate decahydrate	1303-96-4	0.13208%	0.03082%	
	Decyl-dimethyl amine oxide	2605-79-0	0.08072%	0.01884%	
	Vinylidene chloride/methylacrylate copolymer	25038-72-6	0.03516%	0.00821%	
	Zirconium dichloride oxide	7699-43-6	0.03135%	0.00732%	
	Alcohol, C9-11-iso, C10, ethoxylated	78330-20-8	0.02854%	0.00666%	
	Ethoxylated propoxylated 4-nonylphenol-formaldehy de resin	30846-35-6	0.02133%	0.00498%	
	Cationic polymer	Proprietary	0.01516%	0.00354%	
	Heavy aromatic naphtha	64742-94-5	0.01441%	0.00336%	
	Quaternary ammonium compounds chlorides derivatives	68989-00-4	0.01413%	0.00330%	
	Alcohol, C11-14, ethoxylated	78330-21-9	0.01413%	0.00330%	
	Non-crystalline silica	7631-86-9	0.01278%	0.00298%	
	Tetrakis(hydroxymethyl)p hosphonium sulfate	55566-30-8	0.01009%	0.00236%	
	Poly(oxy-1,2-ethanediyl)	25322-68-3	0.00634%	0.00148%	
		91-20-3	0.00288%	0.00067%	
	Magnesium silicate hydrate (talc)	14807-96-6	0.00185%	0.00043%	
	Decyldimethyl amine	1120-24-7	0.00129%	0.00030%	

	(impurity)				
	Hydrogen peroxide (impurity)	7722-84-1	0.00077%	0.00018%	

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

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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%