

Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date:	1/3/2012
State:	California
County/Parish	Kern County
API Number:	0402913335
Operator Name:	Occidental of Elk Hills, Inc.
Well Name and Number:	521-1C
Longitude:	-119.459107919126
Latitude:	35.1795010907586
Long/Lat Projection:	NAD83
Production Type:	Oil
True Vertical Depth (TVD):	3,098
Total Water Volume (gal)*:	47,838

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	Breaker, Surfactant , Crosslinker, Gelling Agent, Clay Control Agent, Bactericide, Demulsifier, Propping Agent, Fluid Loss Additive	Water (Including Mix Water Supplied by Client)*	-		73.82619%	
			Crystalline silica	14808-60-7	97.56910%	25.53756%	
			Guar gum	9000-30-0	0.86019%	0.22515%	
			Diammonium peroxodisulphate	7727-54-0	0.50514%	0.13221%	
			1, 2, 3 - Propanetriol	56-81-5	0.32853%	0.08599%	
			Sodium tetraborate decahydrate	1303-96-4	0.19712%	0.05159%	
			Methanol	67-56-1	0.18571%	0.04861%	

			Decyl-dimethyl amine oxide	2605-79-0	0.08697%	0.02276%	
			Polyvinylidene chloride	9002-85-1	0.06216%	0.01627%	
			Zirconium dichloride oxide	7699-43-6	0.03258%	0.00853%	
			Alcohol, C9-11-iso, C10, ethoxylated	78330-20-8	0.03100%	0.00811%	
			Alcohol, C7-9-iso, C8, ethoxylated	78330-19-5	0.03100%	0.00811%	
			Non-crystalline silica	7631-86-9	0.02778%	0.00727%	
			Tetrakis(hydroxymethyl)p hosphonium sulfate	55566-30-8	0.02543%	0.00666%	
			Ethoxylated propoxylated 4-nonylphenol-formaldehy de resin	30846-35-6	0.02317%	0.00606%	
			Vinylidene chloride/methylacrylate copolymer	25038-72-6	0.02215%	0.00580%	
			Heavy aromatic naphtha	64742-94-5	0.01565%	0.00410%	
			Quaternary ammonium compounds chlorides derivatives	68989-00-4	0.01534%	0.00402%	
			Alcohol, C11-14, ethoxylated	78330-21-9	0.01534%	0.00402%	
			Cationic polymer	Proprietary	0.00955%	0.00250%	
			Poly(oxy-1,2-ethanediyl)	25322-68-3	0.00689%	0.00180%	
			Naphtalene (impurity)	91-20-3	0.00313%	0.00082%	
			Magnesium silicate hydrate (talc)	14807-96-6	0.00272%	0.00071%	
			Decyldimethyl amine (impurity)	1120-24-7	0.00139%	0.00036%	

			Hydrogen peroxide (impurity)	7722-84-1	0.00083%	0.00022%	
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* 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%

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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)