

Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date:	2/29/2012
State:	California
County/Parish	Kern County
API Number:	0402927274
Operator Name:	Occidental of Elk Hills, Inc.
Well Name and Number:	362-36R
Longitude:	-119.453421
Latitude:	35.279574
Long/Lat Projection:	NAD83
Production Type:	Oil
True Vertical Depth (TVD):	2,990
Total Water Volume (gal)*:	185,870

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
YF115ST	Schlumberger	Surfactant , Breaker, Crosslinker, Gelling Agent, Clay Control Agent, Bactericide, Demulsifier, Propping Agent	Water (Including Mix Water Supplied by Client)*	-		69.75369%	
			Crystalline silica	14808-60-7	98.67575%	29.84577%	
			Guar gum	9000-30-0	0.55587%	0.16813%	
			1, 2, 3 - Propanetriol	56-81-5	0.17440%	0.05275%	
			Diammonium peroxidisulphate	7727-54-0	0.14451%	0.04371%	
			Methanol	67-56-1	0.13958%	0.04222%	
			Sodium tetraborate decahydrate	1303-96-4	0.10464%	0.03165%	
			Decyl-dimethyl amine	2605-79-0	0.06204%	0.01876%	

			oxide				
			Alcohol, C7-9-iso, C8, ethoxylated	78330-19-5	0.02227%	0.00674%	
			Alcohol, C9-11-iso, C10, ethoxylated	78330-20-8	0.02227%	0.00674%	
			Vinylidene chloride/methylacrylate copolymer	25038-72-6	0.02020%	0.00611%	
			Ethoxylated propoxylated 4-nonylphenol-formaldehyde resin	30846-35-6	0.01664%	0.00503%	
			Cationic polymer	Proprietary	0.01206%	0.00365%	
			Heavy aromatic naphtha	64742-94-5	0.01124%	0.00340%	
			Alcohol, C11-14, ethoxylated	78330-21-9	0.01102%	0.00333%	
			Quaternary ammonium compounds chlorides derivatives	68989-00-4	0.01102%	0.00333%	
			Non-crystalline silica	7631-86-9	0.00776%	0.00235%	
			Tetrakis(hydroxymethyl)phosphonium sulfate	55566-30-8	0.00624%	0.00189%	
			Poly(oxy-1,2-ethanediyl)	25322-68-3	0.00495%	0.00150%	
			Naphthalene (impurity)	91-20-3	0.00225%	0.00068%	
			Magnesium silicate hydrate (talc)	14807-96-6	0.00106%	0.00032%	
			Decyldimethyl amine (impurity)	1120-24-7	0.00099%	0.00030%	
			Hydrogen peroxide (impurity)	7722-84-1	0.00060%	0.00018%	

* 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)