

## Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date:	1/12/2013
State:	California
County:	Kern County
API Number:	0403049244
Operator Name:	Occidental of Elk Hills, Inc.
Well Name and Number:	84-19R
Longitude:	-119.536972
Latitude:	35.305901
Long/Lat Projection:	NAD83
Production Type:	Oil
True Vertical Depth (TVD):	2,945
Total Water Volume (gal)*:	27,525

### 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), YF122 Flex	Schlumberger	Activator , Surfactant , Breaker, Breaker Aid, Gelling Agent, Crosslinker, Clay Control Agent, Industrial Antimicrobial, Emulsion Preventer, Propping Agent	Water (Including Mix Water Supplied by Client)*	-		72.81921%	
			Crystalline silica	14808-60-7	97.92577%	26.61700%	
			Phenolic resin	9003-35-4	4.89629%	1.33085%	
			Propan-2-ol	67-63-0	0.68466%	0.18610%	
			Carbohydrate polymer	Proprietary	0.66279%	0.18015%	
			Oxyalkylated Alcohol (2)	Proprietary	0.59697%	0.16226%	
			Aliphatic polyol	Proprietary	0.22317%	0.06066%	
			Potassium hydroxide	1310-58-3	0.09697%	0.02636%	
			2,2',2"-nitrilotriethanol	102-71-6	0.08741%	0.02376%	
			Polyethylene glycol monohexyl ether	31726-34-8	0.07456%	0.02027%	
			Diammonium peroxodisulphate	7727-54-0	0.06523%	0.01773%	
			Zirconium dichloride oxide	7699-43-6	0.03908%	0.01062%	
			Alkylalcohol ethoxylated	Proprietary	0.01462%	0.00397%	
			Oxyalkylated Alcohol (1)	Proprietary	0.01462%	0.00397%	
			Diocetyl sulfosuccinate sodium salt	Proprietary	0.01462%	0.00397%	
			Aliphatic co-polymer	Proprietary	0.01305%	0.00355%	
			Non-crystalline silica	7631-86-9	0.00839%	0.00228%	
			Tetrakis(hydroxymethyl)phosphonium sulfate	55566-30-8	0.00839%	0.00228%	

\* 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%

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