

## Hydraulic Fracturing Fluid Product Component Information Disclosure

<b>Fracture Date:</b>	<b>8/6/2012</b>
<b>State:</b>	<b>California</b>
<b>County/Parish:</b>	<b>Kern County</b>
<b>API Number:</b>	<b>0403047674</b>
<b>Operator Name:</b>	<b>Occidental of Elk Hills, Inc.</b>
<b>Well Name and Number:</b>	<b>4-6B-1C</b>
<b>Longitude:</b>	<b>-119.457661</b>
<b>Latitude:</b>	<b>35.170952</b>
<b>Long/Lat Projection:</b>	<b>NAD83</b>
<b>Production Type:</b>	<b>Oil</b>
<b>True Vertical Depth (TVD):</b>	<b>3,670</b>
<b>Total Water Volume (gal)*:</b>	<b>61,371</b>

### 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
4% KCl Water (Oxy Provided), YF125-Flex	Schlumberger	Surfactant , Breaker, Breaker Aid, Gelling Agent, Crosslinker, Clay Control Agent, Bactericide, Demulsifier, Propping Agent	Water (Including Mix Water Supplied by Client)*	-		63.22713%	
			Crystalline silica	14808-60-7	98.80603%	36.33381%	
			Carbohydrate polymer	Proprietary	0.48870%	0.17971%	
			Aliphatic polyol	Proprietary	0.25001%	0.09194%	
			2,2',2"-nitrilotriethanol	102-71-6	0.20751%	0.07631%	
			Diammonium peroxodisulphate	7727-54-0	0.12905%	0.04745%	
			Potassium hydroxide	1310-58-3	0.12500%	0.04597%	
			Methanol	67-56-1	0.10624%	0.03907%	

			Amine derivative	Proprietary	0.10406%	0.03827%	
			Aliphatic co-polymer	Proprietary	0.02950%	0.01085%	
			Oxyalkylated Alcohol (2)	Proprietary	0.01561%	0.00574%	
			Oxyalkylated Alkyl Alcohol (1)	Proprietary	0.01561%	0.00574%	
			Quaternary ammonium compounds	Proprietary	0.00780%	0.00287%	
			Heavy aromatic naphtha	64742-94-5	0.00780%	0.00287%	
			Oxyalkylated Alcohol (1)	Proprietary	0.00780%	0.00287%	
			Non-crystalline silica	7631-86-9	0.00603%	0.00222%	
			Tetrakis(hydroxymethyl)p hosphonium sulfate	55566-30-8	0.00603%	0.00222%	
			Naphtalene (impurity)	91-20-3	0.00156%	0.00057%	

\* 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%

Report ID: RPT-6383 (Generated on 8/24/2012 9:11 AM)

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