Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date	**10/10/2012**
State:	**California**
County:	**Kern County**
API Number:	**0403048422**
Operator Name:	**Occidental of Elk Hills, Inc.**
Well Name and Number:	**56-19R**
Longitude:	**-119.538872**
Latitude:	**35.308051**
Long/Lat Projection:	**NAD83**
Production Type:	**Oil**
True Vertical Depth (TVD):	**2,954**
Total Water Volume (gal)*:	**42,382**

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), YF120 Flex	Schlumberger	Activator , Surfactant , Breaker, Gelling Agent, Crosslinker, Clay Control Agent, INDUSTRIAL ANTIMICROBIAL, Demulsifier, Propping Agent	Water (Including Mix Water Supplied by Client)*	-		68.06014%	
			Crystalline silica	14808-60-7	98.34891%	31.41251%	
			Phenolic resin	9003-35-4	4.91745%	1.57063%	
			Carbohydrate polymer	Proprietary	0.50483%	0.16124%	
			Oxyalkylated Alcohol (2)	Proprietary	0.36081%	0.11524%	
			Propan-2-ol	67-63-0	0.34068%	0.10881%	
			Aliphatic polyol	Proprietary	0.20172%	0.06443%	
			Diammonium peroxidisulphate	7727-54-0	0.15866%	0.05068%	
			Methanol	67-56-1	0.13881%	0.04434%	
			Amine derivative	Proprietary	0.13361%	0.04268%	
			Potassium hydroxide	1310-58-3	0.10086%	0.03221%	
			Zirconium dichloride oxide	7699-43-6	0.09389%	0.02999%	
			Aliphatic co-polymer	Proprietary	0.03173%	0.01014%	
			Oxyalkylated Alkyl Alcohol (1)	Proprietary	0.02013%	0.00643%	
			Non-crystalline silica	7631-86-9	0.01039%	0.00332%	
			Tetrakis(hydroxymethyl)phosphonium sulfate	55566-30-8	0.01039%	0.00332%	
			Oxyalkylated Alcohol (1)	Proprietary	0.01006%	0.00321%	
			Heavy aromatic naphtha	64742-94-5	0.01006%	0.00321%	
			Quaternary ammonium compounds	Proprietary	0.01006%	0.00321%	
			Naphtalene (impurity)	91-20-3	0.00201%	0.00064%	

* 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)