

## Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date	3/20/2012
State:	California
County:	Kern
API Number:	0403046692
Operator Name:	Occidental of Elk Hills, Inc.
Well Name and Number:	3-8-31G
Longitude:	-119.4441744
Latitude:	35.18169767
Long/Lat Projection:	NAD83
Production Type:	Oil
True Vertical Depth (TVD):	2,870
Total Water Volume (gal)*:	31,836

### 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	Operator				100.00%	43.99839%	Density = 8.540
SAND - PREMIUM WHITE	Halliburton	Proppant	Crystalline silica, quartz	14808-60-7	100.00%	39.53711%	
CRC SAND PREMIUM	Halliburton	Proppant	Crystalline silica, quartz	14808-60-7	100.00%	16.08601%	
			Hexamethylenetetramine	100-97-0	2.00%	0.32172%	
			Phenol / formaldehyde resin	9003-35-4	5.00%	0.80430%	
LoSurf-300D	Halliburton	Non-ionic Surfactant	1,2,4 Trimethylbenzene	95-63-6	1.00%	0.00037%	
			Ethanol	64-17-5	60.00%	0.02191%	
			Heavy aromatic petroleum naphtha	64742-94-5	30.00%	0.01095%	
			Naphthalene	91-20-3	5.00%	0.00183%	
			Poly(oxy-1,2-ethanediyl),	127087-87-0	5.00%	0.00183%	



\* 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%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.

Ingredients Listed Below (white line). This Line Are Part of the Fluid Composition Provided by Halliburton Which Do Not Appear On the Material Safety Data Sheets (MSDS)

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