

Hydraulic Fracturing Fluid Product Component Information Disclosure

Last Fracture Date	01/09/2013
State:	California
County:	Kern
API Number:	04-030-48785
Operator Name:	Aera Energy Llc
Well Name and Number:	Lost Hills One 7315B
Longitude:	-119.7176128
Latitude:	35.6085925
Long/Lat Projection:	NAD83
Production Type:	Oil
True Vertical Depth (TVD):	2,471
Total Water Volume (gal)*:	81,438

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
Water	Operator	Carrier	Water	7732-18-5	100.00%	81.08468%	
GBW-5	Baker Hughes	Breaker	Ammonium Phosphate	7727-54-0	100.00%	0.00478%	SmartCare Product
Enzyme G-I	Baker Hughes	Breaker	Hemicellulase Enzyme Concentrate	9025-56-3	3.00%	0.00102%	SmartCare Product
			Water	7732-18-5	97.00%	0.03284%	
BF-7L	Baker Hughes	Buffer	Potassium Carbonate	584-08-7	60.00%	0.23211%	SmartCare Product
			Potassium Hydroxide	1310-58-3	1.00%	0.00387%	
			Water	7732-18-5	60.00%	0.23211%	
Clay Master-5C (Tote)	Baker Hughes	Clay Control	Oxyakylated Amine Quat	138879-94-4	60.00%	0.04863%	
XLW-32, 260 gal tote	Baker Hughes	Crosslinker	Boric Acid (H3BO3)	10043-35-3	30.00%	0.01298%	
			Methanol	67-56-1	60.00%	0.02597%	
			Methyl Borate	121-43-7	30.00%	0.01298%	
GW-3LDF	Baker Hughes	Gelling Agent	1-Butoxy-2-Propanol	5131-66-8	5.00%	0.01114%	SmartCare Product
			Cyrstalline Silica, Quartz (SiO2)	14808-60-7	5.00%	0.01114%	
			Guar Gum	9000-30-0	60.00%	0.13371%	
			Isotridecanol, ethoxylated	9043-30-5	5.00%	0.01114%	
			Paraffinic Petroleum Distillate	64742-55-8	30.00%	0.06685%	
			Petroleum Distillates	64742-47-8	30.00%	0.06685%	

Ferrotrol 300L (Totes)	Baker Hughes	Iron Control	Citric Acid	77-92-9	60.00%	0.00151%	SmartCare Product
ScaleSorb 3, (25# pail)	Baker Hughes	Scale Inhibitor	Amino Alkyl Phosphonic Acid	Trade Secret	30.00%	0.00358%	SmartCare Product
			Crystalline Silica: Quartz (SiO2)	14808-60-7	1.00%	0.00012%	
			Diatomaceous Earth, Calcined	91053-39-3	100.00%	0.01194%	
			Phosphonic Acid	13598-36-2	1.00%	0.00012%	
Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.							
			2-Butoxy-1-Propanol	15821-83-7		0.0001782776%	
			Crystalline Quartz (silica)	14808-60-7		17.9887318637%	
			Water	7732-18-5		0.0010037798%	
* 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)							