

## Hydraulic Fracturing Fluid Product Component Information Disclosure

Last Fracture Date	01/24/2013
State:	California
County:	Ventura
API Number:	04-111-22082
Operator Name:	Aera Energy Llc
Well Name and Number:	Taylor 836
Longitude:	-119.3173438
Latitude:	34.3115055
Long/Lat Projection:	NAD83
Production Type:	Oil
True Vertical Depth (TVD):	5,800
Total Water Volume (gal)*:	82,404

### 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%	50.38673%	
Superset-W, 55 gal drum	Baker Hughes	Activator	Methanol	67-56-1	50.00%	0.36254%	
			Poly (Oxyethylene) Nonylphenol Ether	9016-45-9	50.00%	0.36254%	
X-Cide 207	Baker Hughes	Biocide	2-Methyl-4-Isothiazolin-3-One	2682-20-4	5.00%	0.00033%	
			5-Chloro-2-Methyl-4-Isothiazolin-3-One	26172-55-4	10.00%	0.00066%	
			Crystalline Silica: Cristobalite	14464-46-1	1.00%	0.00007%	
			Crystalline Silica: Quartz (SiO2)	14808-60-7	1.00%	0.00007%	
			Diatomaceous Earth, Calcined	91053-39-3	60.00%	0.00396%	
			Magnesium Chloride	7786-30-3	5.00%	0.00033%	
			Magnesium Nitrate	10377-60-3	10.00%	0.00066%	
GBW-5	Baker Hughes	Breaker	Ammonium Persulfate	7727-54-0	100.00%	0.00257%	SmartCare Product
			Ammonium Phosphate	7727-54-0	100.00%	0.01247%	
Enzyme G-I	Baker Hughes	Breaker	Hemicellulase Enzyme Concentrate	9025-56-3	3.00%	0.00721%	SmartCare Product
			Water	7732-18-5	97.00%	0.23309%	
High Perm CRB-LT	Baker Hughes	Breaker	Ammonium Persulphate	7727-54-0	100.00%	0.01217%	SmartCare Product
			Crystalline Silica	7631-86-9	20.00%	0.00227%	
BF-7L	Baker Hughes	Buffer	Potassium Carbonate	584-08-7	60.00%	0.16264%	SmartCare Product

			Potassium Hydroxide	1310-58-3	1.00%	0.00175%	
			Water	7732-18-5	60.00%	0.10527%	
CorrSorb 3600, 25 lb pail	Baker Hughes	Corrosion Inhibitor	Acid Phosphate Ester	9046-01-9	5.47%	0.00130%	
			Crystalline Silica Quartz	14808-60-7	1.00%	0.00024%	
			Diatomaceous Earth, Calcined	91053-39-3	80.00%	0.01907%	
			Quaternary Ammonium Chloride	61789-71	15.06%	0.00359%	
XLW-32	Baker Hughes	Crosslinker	Boric Oxide	1303-86-2	20.00%	0.00693%	
			Methanol	67-56-1	90.00%	0.03117%	
XLW-32, 260 gal tote	Baker Hughes	Crosslinker	Boric Acid (H3BO3)	10043-35-3	30.00%	0.01561%	
			Methanol	67-56-1	60.00%	0.03123%	
			Methyl Borate	121-43-7	30.00%	0.01561%	
GW-3LDF	Baker Hughes	Gelling Agent	1-Butoxy-2-Propanol	5131-66-8	5.00%	0.02309%	SmartCare Product
			Cyrstalline Silica, Quartz (SiO2)	14808-60-7	5.00%	0.02309%	
			Guar Gum	9000-30-0	60.00%	0.45784%	
			Isotridecanol, ethoxylated	9043-30-5	5.00%	0.02309%	
			Paraffinic Petroleum Distillate	64742-55-8	30.00%	0.13854%	
			Petroleum Distillate Blend	Trade Secret	70.00%	0.31633%	
			Petroleum Distillates	64742-47-8	30.00%	0.13854%	
Super DC, 20/40	Baker Hughes	Proppant	Hexamethylenetetramine	1009-7-0	0.01%	0.00290%	
			P/F Resin	9003-35-4	5.00%	1.44992%	
			Silicon Dioxide (Silica Sand)	14808-60-7	97.00%	28.12851%	
Super LC, 20/40	Baker Hughes	Proppant	Hexamethylenetetramine	1009-7-0	0.01%	0.00169%	
			P/F Resin	9003-35-4	5.00%	0.84446%	
			Silicon Dioxide (Silica Sand)	14808-60-7	97.00%	16.38257%	
ScaleSorb 3, (25# pail)	Baker Hughes	Scale Inhibitor	Amino Alkyl Phosphonic Acid	Trade Secret	30.00%	0.00770%	SmartCare Product
			Crystalline Silica: Quartz (SiO2)	14808-60-7	1.00%	0.00026%	
			Diatomaceous Earth, Calcined	91053-39-3	100.00%	0.02567%	
			Phosphonic Acid	13598-36-2	1.00%	0.00026%	
FSA-1	Baker Hughes	StimPlus	Ethanol	64-17-5	5.00%	0.00638%	
InFlo 250W	Baker Hughes	Surfactant	2-Butoxyethanol	111-76-2	5.00%	0.00339%	
			Methanol	67-56-1	30.00%	0.02036%	
			Surfactants	Trade Secret	80.00%	0.05430%	
GasFlo G, 330 gal tote	Baker Hughes	Surfactant	Methanol	67-56-1	30.00%	0.02542%	SmartCare Product
			Mixture of Surfactants	Trade Secret	60.00%	0.05085%	
			Water	7732-18-5	50.00%	0.04237%	

**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		0.0003694403%	
			Crystalline Silica	14808-60-7			
			Cured Acrylic Resin	Trade Secret		0.0017600608%	

			Ethylene Glycol	107-21-1		0.0002240411%	
			Ethylene Glycol Monobutyl Ether	111-76-2			
			Phosphoric Acid	7664-38-2		0.0000262176%	
			Poly (oxy-1,2-ethanediyl)	24938-91-8			
			Polyoxyalkylenes	78330-21-9		0.0000858030%	
			Quaternary Ammonium Compounds bis[Hydrogenated Tallow Alkyl] Dimethyl Salts With Bentonite	68953-58-2			
			Thioglycolic Acid	68-11-1		0.0000357512%	
			Water	7732-18-5		0.0478774708%	

\* 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)