

Hydraulic Fracturing Fluid Product Component Information Disclosure

Last Fracture Date	04/05/2013
State:	California
County:	Kern
API Number:	04-030-49664
Operator Name:	Aera Energy Llc
Well Name and Number:	577E1-12
Longitude:	-119.7655612
Latitude:	35.5023439
Long/Lat Projection:	NAD83
Production Type:	Oil
True Vertical Depth (TVD):	2,251
Total Water Volume (gal)*:	70,602

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%	73.96638%	
X-Cide 207	Baker Hughes	Biocide	2-Methyl-4-Isothiazolin-3-One	2682-20-4	5.00%	0.00015%	
			5-Chloro-2-Methyl-4-Isothiazolin-3-One	26172-55-4	10.00%	0.00030%	
			Crystalline Silica: Cristobalite	14464-46-1	1.00%	0.00003%	
			Crystalline Silica: Quartz (SiO2)	14808-60-7	1.00%	0.00003%	
			Diatomaceous Earth, Calcined	91053-39-3	60.00%	0.00181%	
			Magnesium Chloride	7786-30-3	5.00%	0.00015%	
			Magnesium Nitrate	10377-60-3	10.00%	0.00030%	
GBW-5	Baker Hughes	Breaker	Ammonium Phosphate	7727-54-0	100.00%	0.00503%	SmartCare Product
Enzyme G-I	Baker Hughes	Breaker	Hemicellulase Enzyme Concentrate	9025-56-3	3.00%	0.00167%	SmartCare Product
			Water	7732-18-5	97.00%	0.05386%	
Clay Master-5C (Tote)	Baker Hughes	Clay Control	Oxyakylated Amine Quat	138879-94-4	60.00%	0.05266%	
XLW-10A	Baker Hughes	Crosslinker	Ethylene Glycol	107-21-1	30.00%	0.03166%	SmartCare Product
			Sodium Hydroxide	1310-73-2	10.00%	0.01055%	
			Sodium Tetraborate	1330-43-4	30.00%	0.03166%	
GW-3LDF	Baker Hughes	Gelling Agent	1-Butoxy-2-Propanol	5131-66-8	5.00%	0.01497%	SmartCare Product
			Cyrstalline Silica, Quartz (SiO2)	14808-60-7	5.00%	0.01497%	

[illegible]