

Hydraulic Fracturing Fluid Product Component Information Disclosure

Last Fracture Date	10/29/2012
State:	California
County:	Los Angeles Offshore
API Number:	04-237-20513
Operator Name:	Thums Long Beach Co
Well Name and Number:	B-427
Longitude:	-118.15831
Latitude:	33.75207
Long/Lat Projection:	NAD27
Production Type:	Oil
True Vertical Depth (TVD):	6,042
Total Water Volume (gal)*:	156,366

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%	65.71516%	
X-Cide 207	Baker Hughes	Biocide	2-Methyl-4-Isothiazolin-3-One	2682-20-4	5.00%	0.00018%	
			5-Chloro-2-Methyl-4-Isothiazolin-3-One	26172-55-4	10.00%	0.00036%	
			Crystalline Silica: Cristobalite	14464-46-1	1.00%	0.00004%	
			Crystalline Silica: Quartz (SiO2)	14808-60-7	1.00%	0.00004%	
			Diatomaceous Earth, Calcined	91053-39-3	60.00%	0.00218%	
			Magnesium Chloride	7786-30-3	5.00%	0.00018%	
			Magnesium Nitrate	10377-60-3	10.00%	0.00036%	
Enzyme G-I	Baker Hughes	Breaker	Hemicellulase Enzyme Concentrate	9025-56-3	3.00%	0.00388%	SmartCare Product
			Water	7732-18-5	97.00%	0.12556%	
High Perm CRB	Baker Hughes	Breaker	Ammonium Persulphate	7727-54-0	60.00%	0.00529%	SmartCare Product
			Crystalline Silica Quartz	14808-60-7	30.00%	0.00265%	
BF-7L	Baker Hughes	Buffer	Potassium Carbonate	584-08-7	60.00%	0.53208%	SmartCare Product
			Potassium Hydroxide	1310-58-3	1.00%	0.00887%	
			Water	7732-18-5	60.00%	0.53208%	
XLW-56, 330 gal tote	Baker Hughes	Crosslinker	D-Glucitol	50-70-4	10.00%	0.04727%	
			Glyoxal	107-22-2	30.00%	0.14181%	
			Sodium Hydroxide	1310-73-2	5.00%	0.02364%	

			Sodium Tetraborate	1330-43-4	10.00%	0.04727%	
GW-3LDF	Baker Hughes	Gelling Agent	1-Butoxy-2-Propanol	5131-66-8	5.00%	0.03133%	SmartCare Product
			Cyrstalline Silica, Quartz (SiO2)	14808-60-7	5.00%	0.03133%	
			Guar Gum	9000-30-0	60.00%	0.37596%	
			Isotridecanol, ethoxylated	9043-30-5	5.00%	0.03133%	
			Paraffinic Petroleum Distillate	64742-55-8	30.00%	0.18798%	
			Petroleum Distillates	64742-47-8	30.00%	0.18798%	
Carbolite, 16/20	Baker Hughes	Proppant	Mullite	1302-93-8	85.00%	19.28069%	
			Silica Crystalline-Cristobalite	14464-46-1	20.00%	4.53663%	
			Silicon Dioxide, amorphous as glass	7631-86-9	35.00%	7.93911%	
GasFlo G, 330 gal tote	Baker Hughes	Surfactant	Methanol	67-56-1	30.00%	0.04406%	SmartCare Product
			Mixture of Surfactants	Trade Secret	60.00%	0.08812%	
			Water	7732-18-5	50.00%	0.07343%	
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		0.0005012828%	
			Cured Acrylic Resin	Trade Secret		0.0026462512%	

* 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)