

Hydraulic Fracturing Fluid Product Component Information Disclosure

Last Fracture Date	03/20/2012
State:	California
County:	Kern
API Number:	04-030-46719
Operator Name:	Vintage Prod Of Cal
Well Name and Number:	Ware & Hauser 15-23W
Longitude:	-119.68485
Latitude:	35.39697
Long/Lat Projection:	NAD27
Production Type:	Oil
True Vertical Depth (TVD):	7,000
Total Water Volume (gal)*:	339,654

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%	87.75632%	
Alpha 125, 263 gl tote	Baker Hughes	Biocide	Glutaraldehyde	111-30-8	30.00%	0.00450%	SmartCare Product
GBW-5	Baker Hughes	Breaker	Ammonium Persulfate	7727-54-0	100.00%	0.00279%	SmartCare Product
Enzyme G-I	Baker Hughes	Breaker	Hemicellulase Enzyme Concentrate	9025-56-3	3.00%	0.00119%	SmartCare Product
			Water	7732-18-5	97.00%	0.03834%	
High Perm CRB	Baker Hughes	Breaker	Ammonium Persulphate	7727-54-0	60.00%	0.00186%	SmartCare Product
			Crystalline Silica Quartz	14808-60-7	30.00%	0.00093%	
BC-3	Baker Hughes	Breaker Catalyst	No Hazardous Ingredients	Trade Secret	100.00%	0.01318%	
BF-7L, Tote	Baker Hughes	Buffer	Potassium Carbonate	584-08-7	60.00%	0.03290%	SmartCare Product
			Potassium Hydroxide	1310-58-3	1.00%	0.00055%	
			Water	7732-18-5	60.00%	0.03290%	
BF-7L	Baker Hughes	Buffer	Potassium Carbonate	584-08-7	60.00%	0.01575%	SmartCare Product
			Potassium Hydroxide	1310-58-3	1.00%	0.00026%	
			Water	7732-18-5	60.00%	0.01575%	
Clay Master-5C (Tote)	Baker Hughes	Clay Control	Oxyakylated Amine Quat	138879-94-4	60.00%	0.06237%	
FRW-18	Baker	Friction Reducer	Petroleum Distillates	64742-47-8	30.00%	0.00764%	SmartCare Product

	Hughes						
GW-3LDF	Baker Hughes	Gelling Agent	Acyclic Hydrocarbon Blend	Trade Secret	60.00%	0.18736%	SmartCare Product
			Alcohols, C12-14, Ethoxylated Propoxylated	68439-51-0	5.00%	0.01561%	
			Crystalline Silica, Quartz	14808-60-7	5.00%	0.01561%	
			Guar Gum	9000-30-0	60.00%	0.18736%	
Sand, White, 40/70	Baker Hughes	Proppant	Crystalline Silica (Quartz)	14808-60-7	100.00%	0.99471%	
Sand, White, 100 mesh	Baker Hughes	Proppant	Crystalline Silica (Quartz)	14808-60-7	100.00%	0.89865%	
Super LC, 30/50	Baker Hughes	Proppant	Hexamethylenetetramine	1009-7-0	0.01%	0.00092%	
			P/F Resin	9003-35-4	5.00%	0.45843%	
			Silicon Dioxide (Silica Sand)	14808-60-7	97.00%	8.89360%	
GasFlo G, 330 gal tote	Baker Hughes	Surfactant	Methanol	67-56-1	30.00%	0.05341%	SmartCare Product
			Mixture of Surfactants	Trade Secret	60.00%	0.10682%	
			Water	7732-18-5	50.00%	0.08901%	
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.							
			Acetyl Triethyl Citrate	77-89-4		0.0131775449%	
			Cured Acrylic Resin	Trade Secret		0.0009296328%	
			Ethoxylated Alcohol	Trade Secret		0.0005093788%	
			Isotridecanol, Ethoxylated (TDA-6)	9043-30-5		0.0156135082%	
			Isotridecanol, Ethoxylated (TDA-9)	9043-30-5		0.0156135082%	
			Methanol	67-56-1		0.0000375153%	
			Poly (acrylamide-co-acrylic acid)	Trade Secret		0.0076406827%	
			Quaternary Ammonium Compounds bis[Hydrogenated Tallow Alkyl] Dimethyl Salts With Bentonite	68953-58-2		0.0156135082%	
			Salt	Trade Secret		0.0012734471%	
			Sorbitan Monooleate	Trade Secret		0.0012734471%	
			Water	7732-18-5		0.0396025696%	
* 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)							