

## Hydraulic Fracturing Fluid Product Component Information Disclosure

<b>Last Fracture Date</b>	<b>8/18/2012</b>
<b>State:</b>	<b>California</b>
<b>County:</b>	<b>Kern</b>
<b>API Number:</b>	<b>04-030-47678</b>
<b>Operator Name:</b>	<b>Vintage Prod Of Cal</b>
<b>Well Name and Number:</b>	<b>Sill 6-14H</b>
<b>Longitude:</b>	<b>-119.24907</b>
<b>Latitude:</b>	<b>35.49775</b>
<b>Long/Lat Projection:</b>	<b>NAD27</b>
<b>Production Type:</b>	<b>Oil</b>
<b>True Vertical Depth (TVD):</b>	<b>8,040</b>
<b>Total Water Volume (gal)*:</b>	<b>314,790</b>

### 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%	68.87694%	
Alpha 125	Baker Hughes	Biocide	Glutaraldehyde	111-30-8	30.00%	0.00367%	SmartCare Product
Enzyme G-I	Baker Hughes	Breaker	Hemicellulase Enzyme Concentrate	9025-56-3	3.00%	0.00431%	SmartCare Product
			Water	7732-18-5	97.00%	0.13923%	
BC-3	Baker Hughes	Breaker Catalyst	No Hazardous Ingredients	Trade Secret	100.00%	0.01513%	
BF-7L	Baker Hughes	Buffer	Potassium Carbonate	584-08-7	60.00%	0.23229%	SmartCare Product
			Potassium Hydroxide	1310-58-3	1.00%	0.00387%	
			Water	7732-18-5	60.00%	0.23229%	
XLW-56, 330 gal tote	Baker Hughes	Crosslinker	D-Glucitol	50-70-4	10.00%	0.01688%	
			Glyoxal	107-22-2	30.00%	0.05065%	
			Sodium Hydroxide	1310-73-2	5.00%	0.00844%	
			Sodium Tetraborate	1330-43-4	10.00%	0.01688%	
GW-4LBF	Baker Hughes	Gelling Agent	Guar Gum	9000-30-0	60.00%	0.35260%	SmartCare Product
			Paraffinic Petroleum Distillate	64742-55-8	60.00%	0.35260%	
			Petroleum Distillate	64742-47-8	60.00%	0.35260%	
Sand, White, 20/40	Baker Hughes	Proppant	Crystalline Silica (Quartz)	14808-60-7	100.00%	14.22331%	
Sand, White, 100 mesh	Baker Hughes	Proppant	Crystalline Silica (Quartz)	14808-60-7	100.00%	0.09578%	
Super LC, 20/40	Baker Hughes	Proppant	Hexamethylenetetramine	1009-7-0	0.01%	0.00145%	

			P/F Resin	9003-35-4	5.00%	0.72250%	
			Silicon Dioxide (Silica Sand)	14808-60-7	97.00%	14.01654%	
GasFlo G, 330 gal tote	Baker Hughes	Surfactant	Methanol	67-56-1	30.00%	0.04263%	SmartCare Product
			Mixture of Surfactants	Trade Secret	60.00%	0.08526%	
			Water	7732-18-5	50.00%	0.07105%	
<b>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.</b>							
			Acetyl Triethyl Citrate	77-89-4		0.0151273578%	
			Methanol	67-56-1		0.0000306124%	
			Sodium Bicarbonate	144-55-8		0.0587664194%	
			Water	7732-18-5		0.0091837193%	

\* 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)