

Hydraulic Fracturing Fluid Product Component Information Disclosure

| | |
|-----------------------------------|----------------------------|
| Last Fracture Date | 12/19/2012 |
| State: | California |
| County: | Kern |
| API Number: | 04-030-48476 |
| Operator Name: | Vintage Prod Of Cal |
| Well Name and Number: | 7-14H |
| Longitude: | -119.24722 |
| Latitude: | 35.4882 |
| Long/Lat Projection: | NAD27 |
| Production Type: | Oil |
| True Vertical Depth (TVD): | 8,200 |
| Total Water Volume (gal)*: | 271,698 |

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% | 80.54934% | |
| Alpha 125 | Baker Hughes | Biocide | Glutaraldehyde | 111-30-8 | 30.00% | 0.00620% | SmartCare Product |
| Enzyme G-I | Baker Hughes | Breaker | Hemicellulase Enzyme Concentrate | 9025-56-3 | 3.00% | 0.00245% | SmartCare Product |
| | | | Water | 7732-18-5 | 97.00% | 0.07937% | |
| High Perm CRB | Baker Hughes | Breaker | Ammonium Persulphate | 7727-54-0 | 60.00% | 0.00064% | SmartCare Product |
| | | | Crystalline Silica Quartz | 14808-60-7 | 30.00% | 0.00032% | |
| BC-3 | Baker Hughes | Breaker Catalyst | No Hazardous Ingredients | Trade Secret | 100.00% | 0.01411% | |
| BF-7L | Baker Hughes | Buffer | Potassium Carbonate | 584-08-7 | 60.00% | 0.29560% | SmartCare Product |
| | | | Potassium Hydroxide | 1310-58-3 | 1.00% | 0.00493% | |
| | | | Water | 7732-18-5 | 60.00% | 0.29560% | |
| XLW-56, 330 gal tote | Baker Hughes | Crosslinker | D-Glucitol | 50-70-4 | 10.00% | 0.02944% | |
| | | | Glyoxal | 107-22-2 | 30.00% | 0.08833% | |
| | | | Sodium Hydroxide | 1310-73-2 | 5.00% | 0.01472% | |
| | | | Sodium Tetraborate | 1330-43-4 | 10.00% | 0.02944% | |
| GW-3LDF | Baker Hughes | Gelling Agent | 1-Butoxy-2-Propanol | 5131-66-8 | 5.00% | 0.03063% | SmartCare Product |
| | | | Cyrstalline Silica, Quartz (SiO2) | 14808-60-7 | 5.00% | 0.03063% | |
| | | | Guar Gum | 9000-30-0 | 60.00% | 0.36750% | |
| | | | Isotridecanol, ethoxylated | 9043-30-5 | 5.00% | 0.03063% | |
| | | | Paraffinic Petroleum Distillate | 64742-55-8 | 30.00% | 0.18375% | |
| | | | Petroleum Distillates | 64742-47-8 | 30.00% | 0.18375% | |

| | | | | | | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|------------|-------------------------------|--------------|---------|---------------|-------------------|
| Sand, White, 20/40 | Baker Hughes | Proppant | Crystalline Silica (Quartz) | 14808-60-7 | 100.00% | 15.48717% | |
| Sand, White, 100 mesh | Baker Hughes | Proppant | Crystalline Silica (Quartz) | 14808-60-7 | 100.00% | 0.21334% | |
| Super LC, 20/40 | Baker Hughes | Proppant | Hexamethylenetetramine | 1009-7-0 | 0.01% | 0.00018% | |
| | | | P/F Resin | 9003-35-4 | 5.00% | 0.08879% | |
| | | | Silicon Dioxide (Silica Sand) | 14808-60-7 | 97.00% | 1.72244% | |
| GasFlo G, 330 gal tote | Baker Hughes | Surfactant | Methanol | 67-56-1 | 30.00% | 0.04720% | SmartCare Product |
| | | | Mixture of Surfactants | Trade Secret | 60.00% | 0.09439% | |
| | | | Water | 7732-18-5 | 50.00% | 0.07866% | |
| 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 | | 0.0004900027% | |
| | | | Acetyl Triethyl Citrate | 77-89-4 | | 0.0141125391% | |
| | | | Cured Acrylic Resin | Trade Secret | | 0.0003200122% | |
| | | | Methanol | 67-56-1 | | 0.0000516521% | |
| | | | Water | 7732-18-5 | | 0.0154956319% | |

* 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)