

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	8/26/2013
Job End Date:	8/31/2013
State:	Texas
County:	Andrews
API Number:	42-003-43170-00-00
Operator Name:	Greystone Oil & Gas LLP
Well Name and Number:	State Aq 8H
Longitude:	-102.60368000
Latitude:	32.16753000
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	10,750
Total Base Water Volume (gal):	868,098
Total Base Non Water Volume:	0



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	100.00000	83.56298	
TerraProp Plus, 20/40 mesh (bulk)	Baker Hughes	Proppant					
			Aluminum Oxide	1344-28-1	100.00000	9.14433	
			Amorphous Silica	7631-86-9	20.00000	1.82887	
			Titanium Dioxide	13463-67-7	5.00000	0.45722	
			Iron Oxide	1309-37-1	5.00000	0.45722	
HCl, 10.1 - 15%	Baker Hughes	Acidizing					
			Water	7732-18-5	85.00000	1.70764	SmartCare Product
			Hydrochloric Acid	7647-01-0	15.00000	0.30135	SmartCare Product
GW-4LDF	Baker Hughes	Gelling Agent					
			Petroleum Distillate Blend (1)	64742-47-8	70.00000	0.48887	SmartCare Product
			Petroleum Distillate Blend (3)	8042-47-5	70.00000	0.48887	SmartCare Product
			Petroleum Distillate Blend (2)	64742-55-8	70.00000	0.48887	SmartCare Product
			Guar Gum	9000-30-0	60.00000	0.41903	SmartCare Product
BF-9L, 300 gal tote	Baker Hughes	Buffer					
			Potassium Carbonate	584-08-7	60.00000	0.05841	SmartCare Product
			Potassium Hydroxide	1310-58-3	30.00000	0.02921	SmartCare Product
Enzyme G HT-II	Baker Hughes	Breaker					

			Water	7732-18-5	100.00000	0.07219	SmartCare Product
			Tryptone	73049-73-7	5.00000	0.00361	SmartCare Product
			Yeast Extract	08013-01-2	5.00000	0.00361	SmartCare Product
ClayCare, ClayTreat-2C, 330 gl tote	Baker Hughes	Clay Control					
			Choline Chloride	67-48-1	75.00000	0.03340	SmartCare Product
			Water	7732-18-5	30.00000	0.01336	SmartCare Product
Flo-Back 40, tote	Baker Hughes	Surfactant					
			Amphoteric Surfactant	Trade Secret	40.00000	0.03793	SmartCare Product
XLW-30AG, tote	Baker Hughes	Crosslinker					
			Petroleum Distillates	64742-47-8	60.00000	0.03153	
Scaletrol 720, 330 gl tote	Baker Hughes	Scale Inhibitor					
			Ethylene Glycol	107-21-1	30.00000	0.02684	SmartCare Product
			Calcium Chloride	10043-52-4	5.00000	0.00447	SmartCare Product
XLW-4	Baker Hughes	Crosslinker					
			Sodium Tetraborate	1303-96-4	30.00000	0.02950	
Ferrotrol 280L , 330 gl tote	Baker Hughes	Iron Control					
			2-Mercaptoethanol	60-24-2	100.00000	0.01325	
			Cupric Chloride	7447-39-4	5.00000	0.00066	
			Ammonium Hydroxide	1336-21-6	5.00000	0.00066	
Alpha 114, 260 gl tote	Baker Hughes	Biocide					
			Glutaraldehyde	111-30-8	30.00000	0.00680	
			Quaternary Ammonium Compound	68424-85-1	5.00000	0.00113	
High Perm CRB	Baker Hughes	Breaker					
			Ammonium Persulphate	7727-54-0	100.00000	0.00346	SmartCare Product
Acetic Acid 0.1-10% (w/Glacial)	Baker Hughes	Acidizing					
			Acetic Acid	64-19-7	10.00000	0.00244	SmartCare Product
CI-27	Baker Hughes	Corrosion Inhibitor					
			Methanol	67-56-1	60.00000	0.00082	
			Polyoxyalkylenes	Trade Secret	30.00000	0.00041	
			Fatty Acids	Trade Secret	30.00000	0.00041	
			Thiourea Polymer	68527-49-1	30.00000	0.00041	
			Propargyl Alcohol	107-19-7	10.00000	0.00014	
			Olefin	Trade Secret	5.00000	0.00007	
NE-35, 330 gl tote	Baker Hughes	Non-emulsifier					
			Mixture of Surfactants	Trade Secret	50.00000	0.00048	
			Propylene Glycol	57-55-6	30.00000	0.00029	
Ferrotrol 800L	Baker Hughes	Iron Control					
			Water	7732-18-5	70.00000	0.00018	
			Trisodium Nitriloacetate	5064-31-3	60.00000	0.00015	
			Sodium Sulfate	7757-82-6	2.00000	0.00001	
			Sodium Hydroxide	1310-73-2	2.00000	0.00001	

CI-111	Baker Hughes	Corrosion Inhibitor					
			Quaternary Ammonium Compound	Trade Secret	60.00000	0.00006	SmartCare Product
			Sulfur Compound	Trade Secret	30.00000	0.00003	SmartCare Product
			Isopropanol	67-63-0	10.00000	0.00001	SmartCare Product
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.							
		Other Chemicals					
			Water	7732-18-5		0.20699	
			Sodium Chloride	7647-14-5		0.02852	
			Polyacrylate	Trade Secret		0.01789	
			Boric Oxide	1303-86-2		0.01682	
			Polymeric Suspending Agent	Trade Secret		0.00263	
			Organophilic Clay	Trade Secret		0.00263	
			Glycerol	56-81-5		0.00108	
			Cured Resin	Trade Secret		0.00083	
			Lactose	5989-81-1		0.00072	
			Surfactant	Trade Secret		0.00053	
			Ethanol	64-17-5		0.00007	
			Potassium Chloride	7447-40-7		0.00004	
			Methanol	67-56-1		0.00003	
			Soy	8002-43-5		0.00003	
			Anitfoam	Trade Secret		0.00001	
			Formaldehyde	50-00-0		0.00000	

* 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%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.

Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)