

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	3/28/2013
Job End Date:	3/28/2013
State:	Wyoming
County:	Sublette
API Number:	49-035-28605-00-00
Operator Name:	Ultra Resources
Well Name and Number:	Boulder 4D2-19D
Longitude:	-109.77125800
Latitude:	42.64506400
Datum:	NAD27
Federal/Tribal Well:	NO
Total Base Water Volume (gal):	811,742
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
Fresh Water	Operator	Carrier					
			Water	7732-18-5	100.00000	74.40996	Density = 8.350
SAND - PREMIUM WHITE	Halliburton	Proppant					
			Crystalline silica, quartz	14808-60-7	100.00000	25.15905	
WG-36 GELLING AGENT	Halliburton	Gelling Agent					
			Guar gum	9000-30-0	100.00000	0.18074	
CL-22 UC	Halliburton	Crosslinker					
			Potassium formate	590-29-4	60.00000	0.04735	
MO-67	Halliburton	pH Control Additive					
			Sodium hydroxide	1310-73-2	30.00000	0.04045	
BA-20 BUFFERING AGENT	Halliburton	Buffer					
			Ammonium acetate	631-61-8	100.00000	0.00646	
			Acetic acid	64-19-7	30.00000	0.00194	
BE-7™	Halliburton	Biocide					
			Sodium hypochlorite	7681-52-9	30.00000	0.00617	
			Sodium hydroxide	1310-73-2	2.00000	0.00041	
OPTIFLO-II DELAYED RELEASE BREAKER	Halliburton	Breaker					
			Ammonium persulfate	7727-54-0	100.00000	0.00572	

			Crystalline silica, quartz	14808-60-7	10.00000	0.00057	
OPTIFLO-III DELAYED RELEASE BREAKER	Halliburton	Breaker					
			Ammonium persulfate	7727-54-0	100.00000	0.00184	
			Crystalline silica, quartz	14808-60-7	30.00000	0.00055	
SP BREAKER	Halliburton	Breaker					
			Sodium persulfate	7775-27-1	100.00000	0.00196	
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.							
			Water	7732-18-5		0.18098	
			Borate salts	92908-33-3		0.04735	
			Bentonite, benzyl(hydrogenated tallow alkyl) dimethylammonium stearate complex	121888-68-4		0.00904	
			Cured Acrylic Resin	Proprietary		0.00227	
			Sodium chloride	7647-14-5		0.00214	
			Surfactant Mixture	67254-71-1		0.00181	
			Silica gel	112926-00-8		0.00181	
			Surfactant Mixture	56449-46-8		0.00181	
			Acrylate Polymer	Proprietary		0.00079	
			Sodium carboxymethyl cellulose	9004-32-4		0.00079	
			Sodium glycollate	2836-32-0		0.00079	
			Crystalline silica, quartz	14808-60-7		0.00026	
			Sodium sulfate	7757-82-6		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)