

# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	8/2/2013
Job End Date:	8/9/2013
State:	Oklahoma
County:	Alfalfa
API Number:	35-003-22682-00-00
Operator Name:	Chesapeake Operating, Inc.
Well Name and Number:	HOUSE 35-28-10 1H
Longitude:	-98.23684713
Latitude:	36.85551513
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	5,229
Total Base Water Volume (gal):	1,804,320
Total Base Non Water Volume:	38,634



## 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	CHESAPEAKE ENERGY	Carrier/Base Fluid					
			Water	007732-18-5	100.00000	96.01834	
Northern White Sand	BASIC ENERGY	Proppant - Natural					
			Crystalline Silica (Quartz Sand, Silicon Dioxide)	014808-60-7	100.00000	2.97575	
15% HCl Acid	BASIC ENERGY	Acid					
			Water	007732-18-5	85.00000	0.78163	
			Hydrochloric Acid	007647-01-0	15.00000	0.13794	
ALPHA 1427	BAKER HUGHES	Anti-Bacterial Agent					
			Water	007732-18-5	60.00000	0.01180	
			Glutaraldehyde (Pentanediol)	000111-30-8	30.00000	0.00590	
			Didecyl Dimethyl Ammonium Chloride	007173-51-5	10.00000	0.00197	
			Quaternary Ammonium Compound	068424-85-1	7.00000	0.00138	
			Ethanol	000064-17-5	5.00000	0.00098	
FR-7	BASIC ENERGY	Friction Reducer					
			Petroleum Distillate Hydrotreated Light	064742-47-8	35.00000	0.01538	
			Ammonium Acetate	000631-61-8	6.00000	0.00264	
I-6L	BASIC ENERGY	Iron Control Agent					

			Acetic acid	000064-19-7	85.00000	0.00460	
			Methanol (Methyl Alcohol)	000067-56-1	5.00000	0.00027	
S-10	BASIC ENERGY	Surfactant					
			Methanol (Methyl Alcohol)	000067-56-1	100.00000	0.00083	
			2-Butoxyethanol (Ethylene Glycol Monobutyl Ether)	000111-76-2	100.00000	0.00083	
CIA- LT166	BASIC ENERGY	Corrosion Inhibitor					
			Methanol (Methyl Alcohol)	000067-56-1	50.00000	0.00141	
			Propargyl Alcohol (2-Propynol)	000107-19-7	4.00000	0.00011	
SCW-5277	BAKER HUGHES	Scale Inhibitor					
			Phosphate Salt	NA	5.00000	0.00064	
NE - 140	BASIC ENERGY	Non-Emulsifier					
			Methanol (Methyl Alcohol)	000067-56-1	30.00000	0.00024	
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.							
CIA- LT166, FR-7, I-6L, NE - 140, S-10	BASIC ENERGY	Corrosion Inhibitor, Friction Reducer, Iron Control Agent, Non-Emulsifier, Surfactant					
			Water	007732-18-5		0.03902	
			Proprietary Surfactant	TRADE SECRET		0.03705	
			Ethoxylated Alcohol	068439-50-9		0.03622	
			Ethoxylated Oleylamine	026635-93-8		0.03622	
			Alcohols ethoxylated C12-16	068551-12-2		0.03622	
			Sorbitan Monooleate	001338-43-8		0.03622	
			Alcohol ethoxylate C-10/16 with 6.5 EO	068002-97-1		0.03622	
			Polypropenamide	910644-97-2		0.03622	
			Proprietary Alcohol Ethoxylate Surfactants	TRADE SECRET		0.00372	
			Proprietary n-Olefin	TRADE SECRET		0.00286	
			Diethanolamine	000111-42-2		0.00083	
			Modified Thiourea Polymer	068527-49-1		0.00003	
SCW-5277	BAKER HUGHES	Scale Inhibitor					
			Proprietary Reducing Agent	TRADE SECRET		0.01312	
			Proprietary Polymer	TRADE SECRET		0.01312	
			Proprietary Salt	TRADE SECRET		0.01312	
			Proprietary Organophosphonate	TRADE SECRET		0.01312	
			Water	007732-18-5		0.01312	
			Proprietary Alkaline Salt	TRADE SECRET		0.01312	

\* 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)

