

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	5/24/2013
Job End Date:	5/29/2013
State:	Montana
County:	Richland
API Number:	25-083-23116-00-00
Operator Name:	Whiting Petroleum
Well Name and Number:	SKOV 31-28-1H
Longitude:	-104.10290072
Latitude:	47.89604928
Datum:	NAD27
Federal/Tribal Well:	NO
Total Base Water Volume (gal):	1,782,908
Total Base Non Water Volume:	



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
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.							
YF125FlexD, Slickwater	Schlumberger	Bactericide (Myacide GA25), Friction Reducer, Multifunctional Additive B392, Stabilizing Agent, Breaker, Gelling Agent, Crosslinker, Scale Inhibitor,					
			Water (Including Mix Water Supplied by Client)*	NA		81.46253	
			Crystalline silica	14808-60-7	96.25091	17.84248	
			Guar gum	9000-30-0	1.14299	0.21188	
			Ethane-1,2-diol	107-21-1	0.58438	0.10833	
			Cholinium chloride	67-48-1	0.43348	0.08036	
			Sodium hydroxide	1310-73-2	0.32183	0.05966	
			2,2',2"-nitrilotriethanol	102-71-6	0.17426	0.03230	
			Propan-2-ol	67-63-0	0.16303	0.03022	
			Gum, xanthan	11138-66-2	0.08347	0.01547	
			Glycerol	56-81-5	0.05374	0.00996	
			Sodium tetraborate	1330-43-4	0.05343	0.00990	
			Sodium bromate	7789-38-0	0.05169	0.00958	
			Urea	57-13-6	0.05088	0.00943	

		Crosslinked PO/EO-block polymer	68123-18-2	0.04861	0.00901	
		Diammonium peroxodisulphate	7727-54-0	0.04808	0.00891	
		Polyethylene glycol monohexyl ether	31726-34-8	0.04274	0.00792	
		Glutaraldehyde	111-30-8	0.02552	0.00473	
		Alkyl (c10-c14) alcohols, ethoxylated	66455-15-0	0.01619	0.00300	
		Alcohol, C11-14, ethoxylated	78330-21-9	0.01615	0.00299	
		Methyl oxirane polymer with oxirane	9003-11-6	0.01601	0.00297	
		Calcium magnesium sodium phosphate frit	65997-18-4	0.01181	0.00219	
		Vinylidene chloride/methylacrylate copolymer	25038-72-6	0.01142	0.00212	
		Acrylamide sodium acrylate copolymer	25085-02-3	0.01039	0.00193	
		Distillates (petroleum), hydrotreated light	64742-47-8	0.00903	0.00167	
		Diocetyl sulfosuccinate sodium salt	577-11-7	0.00756	0.00140	
		Non-crystalline silica	7631-86-9	0.00311	0.00058	
		Dicoco dimethyl quaternary ammonium chloride	61789-77-3	0.00193	0.00036	
		Propylene glycol	57-55-6	0.00162	0.00030	
		Magnesium silicate hydrate (talc)	14807-96-6	0.00060	0.00011	
		Alkylalcohol, ethoxylate >C10	68002-97-1	0.00055	0.00010	
		Sorbitan monooleate	1338-43-8	0.00044	0.00008	
		Thiocyanic acid, ammonium salt	1762-95-4	0.00027	0.00005	
		Poly(oxyethylene) sorbitol monostearate	9005-67-8	0.00026	0.00005	
		2-ethylhexan-1-ol	104-76-7	0.00022	0.00004	
		Oleic acid	112-80-1	0.00009	0.00002	
		Potassium oleate	143-18-0	0.00011	0.00002	
		Acetic acid, potassium salt	127-08-2	0.00002		
		Acetic acid	64-19-7			
		Tetrasodium ethylenediaminetetraacetate	64-02-8			

* 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)