

# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	1/4/2014
Job End Date:	1/30/2014
State:	Pennsylvania
County:	Washington
API Number:	37-125-26975-00-01
Operator Name:	Range Resources Corporation
Well Name and Number:	Avella Land Ventures Unit #6H
Longitude:	-80.43133300
Latitude:	40.27188300
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	6,359
Total Base Water Volume (gal):	14,374,680
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
MX 5-2402	MultiChem	Bacterial Nutritional Supplement					
			Sodium Nitrate	7631-99-4	60.00000	0.06704	
37% HCL	FracTech	Cleans Perforation					
			HCL	7647-01-0	37.00000	0.02567	
FRW-600	FracTech	Friction Reducer					
			Hydrotreated light distillate	64742-47-8	30.00000	0.00542	
			Ammonium Actetate	631-61-8	6.00000	0.00155	
FRW-200	FracTech	Friction Reducer					
			Petroleum distillate hydrotreated light	64742-47-8	26.00000	0.00341	
FE100L	FracTech	Iron Chelator					
			Citric Acid	77-92-9	55.00000	0.00091	
CI-150	FracTech	Corrosion Inhibitor					
			Organic Amine Resin Salt	Proprietary	30.00000	0.00020	
			Ethylene Glycol	107-21-1	30.00000	0.00020	
			Isopropanol	67-63-0	30.00000	0.00020	
			Quarternary Ammonium Compound	Proprietary	10.00000	0.00007	
			Aromatic Aldehyde	Proprietary	10.00000	0.00007	
			Dimethylformamide	68-12-2	10.00000	0.00007	

NE100	FracTech	Non-Emulsifier					
			2-Propanol	67-63-0	10.00000	0.00003	
			2-Butoxyethanol	111-76-2	10.00000	0.00003	
			Dodecylbenzenesulfonic Acid	27176-87-0	5.00000	0.00002	
			Benzene, C10-16 Alkyl Derivatives	68648-87-3	0.04200	0.00000	
			Unsulphonated Matter	Proprietary	0.02800	0.00000	
			Sulfuric Acid	7664-93-9	0.01400	0.00000	
			Sulfur Dioxide	7446-09-5	0.00140	0.00000	
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	Range Resources	Carrier					
			H2O	7732-18-5	100.00000	87.86092	
Sand	Range Resources	Proppant					
			Crystalline Silica	14808-60-7	100.00000	11.89275	
MX-5-2402	MultiChem	Scale Inhibitor & Nitrate reducing bacteria					
			Non-hazardous Solvent Package	Proprietary	50.00000	0.06306	
			Water	7732-18-5	40.00000	0.03881	
			Neutralized Polymer	Proprietary	10.00000	0.01261	
37% HCL	FracTech	Cleans Perforation					
			Water	7732-18-5	63.00000	0.04519	
FRW-600	FracTech	Friction Reducer					
			Acrylamide Polymer	Proprietary	100.00000	0.02588	
FRW-200	FracTech	Friction Reducer					
			Water	7732-18-5	45.00000	0.00809	
			Copolymer of Acrylamide and Sodium Acrylate	25987-30-8	20.00000	0.00385	
			Surfactant	Proprietary	7.00000	0.00135	
			Alcohols(C6-C10), Ethoxlated	68002-97-1	4.00000	0.00077	
			Sorbitan Monooleate	1338-43-8	3.00000	0.00058	
			Alyloxypolyethyleneoxythanol	84133-50-6	1.00000	0.00019	
			Ammonium Acrylate	10604-69-0	0.50000	0.00010	
FE100L	FracTech	Iron Chelator					
			Water	7732-18-5	60.00000	0.00060	
NE100	FracTech	Non-Emulsifier					
			Water	7732-18-5	90.00000	0.00030	
CI-150	FracTech	Corrosion Inhibitor					
			Akylene Oxide Block Polymer	Proprietary	10.00000	0.00007	
			Water	7732-18-5	5.00000	0.00003	
			Aliphatic Alcohol	Proprietary	0.10000	0.00000	
			Fatty Acid Salt	Proprietary	0.10000	0.00000	
			Fatty Acid	Proprietary	0.10000	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)