

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	7/20/2016
Job End Date:	8/4/2016
State:	Texas
County:	Martin
API Number:	42-317-40417-00-00
Operator Name:	QEP Energy Company
Well Name and Number:	UNIVERSITY 7-1726 S 08SS
Latitude:	32.40936300
Longitude:	-102.20105500
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	9,495
Total Base Water Volume (gal):	8,605,900
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	Base Fluid					
			Water	7732-18-5	100.00000	44.89963	Density = 8.340
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.40988	

MO-67	Halliburton	pH Control Additive					
				Listed Below			
N-ZYME 3	Halliburton	Enzyme					
				Listed Below			
CLAYFIX 3	Halliburton	Additive					
				Listed Below			
SAND-COMMON WHITE-100 MESH, SSA-2	Halliburton	Proppant					
				Listed Below			
WG-36 GELLING AGENT	Halliburton	Gelling Agent					
				Listed Below			
BC-140 X2	Halliburton	Initiator					
				Listed Below			
SAND-CRC PREMIUM-20/40	Halliburton	Proppant					
				Listed Below			
FDP-S1088-13	Halliburton	Surfactant					
				Listed Below			
DCA-32003	Halliburton	Wetting Agent					

				Listed Below			
HAI-OS ACID INHIBITOR	Halliburton	Corrosion Inhibitor					
				Listed Below			
HYDROCHLORIC ACID	Halliburton	Solvent					
				Listed Below			
DCA-23003	Halliburton	Friction Reducer					
				Listed Below			
SandWedge(R) NT	Halliburton	Flow Enhancer					
				Listed Below			
SAND-PREMIUM WHITE-30/50	Halliburton	Proppant					
				Listed Below			
OptiKleen-WF (TM)	Halliburton	Concentrate					
				Listed Below			
FE-1A ACIDIZING COMPOSITION	Halliburton	Additive					
				Listed Below			
Items above are Trade Names with the exception of Base Water . Items below are the individual ingredients.							
			Crystalline silica, quartz	14808-60-7	100.00000	54.60016	
			Hydrochloric acid	7647-01-0	60.00000	0.21846	
			Methanol	67-56-1	100.00000	0.04081	

			Guar gum	9000-30-0	100.00000	0.02987	
			Phenol / formaldehyde resin	9003-35-4	5.00000	0.02374	
			Acrylamide, sodium acrylate polymer	25987-30-8	30.00000	0.01135	
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.01135	
			Hexamethylenetetramine	100-97-0	2.00000	0.00950	
			Monoethanolamine borate	26038-87-9	100.00000	0.00681	
			Alkylbenzene sulfonate compd. with triethanolamine	68584-24-7	10.00000	0.00402	
			Alkylbenzene sulfonate compd. with 2-propanamine	68584-25-8	10.00000	0.00402	
			Sodium perborate tetrahydrate	10486-00-7	100.00000	0.00392	
			Dipropylene glycol monomethyl ether	34590-94-8	60.00000	0.00292	
			Fatty acid amine salt mixture	Proprietary	60.00000	0.00292	
			Sodium chloride	7647-14-5	30.00000	0.00215	
			Ethylene glycol	107-21-1	30.00000	0.00204	
			Sorbitan, mono-9-octadecenoate, (Z)	1338-43-8	5.00000	0.00189	
			Sodium diacetate	126-96-5	5.00000	0.00189	
			Ethoxylated branched C13 alcohol	78330-21-9	5.00000	0.00189	
			Sorbitan monooleate polyoxyethylene derivative	9005-65-6	5.00000	0.00189	
			Alcohols, C6-12, ethoxylated propoxylated	68937-66-6	100.00000	0.00168	
			Acetic anhydride	108-24-7	100.00000	0.00108	
			Acetic acid	64-19-7	60.00000	0.00065	
			Sodium hydroxide	1310-73-2	30.00000	0.00053	
			Alcohols, C10-16, ethoxylated propoxylated	69227-22-1	30.00000	0.00050	

			Quaternary ammonium compound	Proprietary	10.00000	0.00049	
			Heavy aromatic petroleum naphtha	64742-94-5	10.00000	0.00049	
			Benzene, C10-16 alkyl derivatives	68648-87-3	1.00000	0.00040	
			Inorganic salt	Proprietary	5.00000	0.00035	
			Magnesium chloride hexahydrate	7791-18-6	5.00000	0.00035	
			Ethoxylated alcohols	Proprietary	30.00000	0.00027	Denise Tuck, Halliburton, 3000 N. Sam Houston Pkwy E., Houston, TX 77032, 281-871-6226
			Fatty acids, tall oil	Proprietary	30.00000	0.00027	
			Reaction product of acetophenone, formaldehyde, thiourea and oleic acid in dimethyl formamide	68527-49-1	30.00000	0.00027	
			Olefins	Proprietary	5.00000	0.00011	
			Propargyl alcohol	107-19-7	10.00000	0.00009	
			Polyethylene glycol	25322-68-3	5.00000	0.00008	
			Calcium chloride	10043-52-4	1.00000	0.00007	
			Glycerine	56-81-5	60.00000	0.00002	
			2,7-Naphthalenedisulfonic acid, 3-hydroxy-4-[(4-sulfor-1-naphthalenyl)azo] -, trisodium salt	915-67-3	0.10000	0.00001	
			Acrylamide	79-06-1	0.01000	0.00000	
			FD&C Blue 1	3844-45-9	5.00000	0.00000	
			Enzyme	Proprietary	5.00000	0.00000	
			Naphthalene	91-20-3	0.01000	0.00000	
			1,2-Benzisothiazolin-3-one	2634-33-5	0.10000	0.00000	

* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water

** Information is based on the maximum potential for concentration and thus the total may be over 100%

*** If you are calculating a percentage of total ingredients do not add the water volume below the green line to the water volume above the green line

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)