

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	1/2/2017
Job End Date:	1/14/2017
State:	Texas
County:	Martin
API Number:	42-317-40525-00-00
Operator Name:	QEP Energy Company
Well Name and Number:	UNIVERSITY 7-0213 N 06SA
Latitude:	32.41423800
Longitude:	-102.18265500
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	9,212
Total Base Water Volume (gal):	12,601,907
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	87.41628	Density = 8.390
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	1.02756	

PROP- PREMIUM- 30/50,30/60, BULK	Halliburton	Proppant					
				Listed Below			
MO-67	Halliburton	pH Control Additive					
				Listed Below			
BA-20 BUFFERING AGENT	Halliburton	Buffer					
				Listed Below			
SAND-CRC PREMIUM- 20/40, 100 LB SACK	Halliburton	Proppant					
				Listed Below			
HAI-OS ACID INHIBITOR	Halliburton	Corrosion Inhibitor					
				Listed Below			
HCL >10%	Halliburton	Solvent					
				Listed Below			
FDP-S1264-16	Multi-Chem	Surfactant					
				Listed Below			
BC-140 X2	Halliburton	Initiator					
				Listed Below			

CLAYFIX 3	Halliburton	Additive					
				Listed Below			
LOSURF-360	Halliburton	Surfactant					
				Listed Below			
WG-36 GELLING AGENT	Halliburton	Gelling Agent					
				Listed Below			
OptiKleen-WF (TM)	Halliburton	Concentrate					
				Listed Below			
SAND-CRC-20/40, 100 LB SACK	Halliburton	Proppant					
				Listed Below			
D-AIR 3000L	Halliburton	Defoamer					
				Listed Below			
FDP-S1088-13	Halliburton	Surfactant					
				Listed Below			
DCA-23003	SNF	Friction Reducer					
				Listed Below			
FE-1A ACIDIZING COMPOSITION	Halliburton	Additive					

				Listed Below			
SAND-COMMON WHITE-100 MESH, SSA-2, BULK (100003676)	Halliburton	Proppant					
				Listed Below			
N-Zyme 3	Halliburton	Breaker					
				Listed Below			

Items above are Trade Names with the exception of Base Water . Items below are the individual ingredients.

			Sintered bauxite	1318-16-7	100.00000	9.33439	
			Crystalline silica, quartz	14808-60-7	100.00000	1.91552	
			Aluminum silicate	1302-76-7	10.00000	0.93344	
			Aluminum oxide	1344-28-1	5.00000	0.46672	
			Crystalline silica, cristobalite	14464-46-1	5.00000	0.46672	
			Hydrochloric acid	7647-01-0	30.00000	0.29802	
			Guar gum	9000-30-0	100.00000	0.10305	
			Titanium dioxide	13463-67-7	1.00000	0.09334	
			Iron oxide	1309-37-1	1.00000	0.09334	
			Distillates (petroleum), hydrotreated light	64742-47-8	45.00000	0.03521	
			Monoethanolamine borate	26038-87-9	100.00000	0.03457	
			Phenol / formaldehyde resin	9003-35-4	5.00000	0.03105	
			Isopropanol	67-63-0	30.00000	0.02467	
			Hexamethylenetetramine	100-97-0	2.00000	0.01242	
			Ethylene glycol	107-21-1	30.00000	0.01037	
			Ethoxylated alcohols	Proprietary	30.00000	0.00896	
			Ammonium acetate	631-61-8	100.00000	0.00858	

			Fatty nitrogen derived amides	Proprietary	10.00000	0.00822	
			Heavy aromatic petroleum naphtha	64742-94-5	10.00000	0.00822	
			Ethoxylated Fatty Acids	Proprietary	10.00000	0.00822	
			Sodium chloride	7647-14-5	30.00000	0.00578	
			Acetic acid	64-19-7	60.00000	0.00436	
			Sodium perborate tetrahydrate	10486-00-7	100.00000	0.00430	
			Butyl alcohol	71-36-3	5.00000	0.00411	
			Ammonium persulfate	7727-54-0	100.00000	0.00311	
			Alcohols, C6-12, ethoxylated propoxylated	68937-66-6	100.00000	0.00311	
			Acetic anhydride	108-24-7	100.00000	0.00298	
			Poly(oxy-1,2-ethanediyl), a-tridecyl-w-hydroxy-, -branched	69011-36-5	3.00000	0.00235	
			Methanol	67-56-1	60.00000	0.00148	
			Inorganic salt	Proprietary	5.00000	0.00099	
			Magnesium chloride hexahydrate	7791-18-6	5.00000	0.00096	
			Alcohols, C10-16, ethoxylated propoxylated	69227-22-1	30.00000	0.00093	
			Naphthalene	91-20-3	1.00000	0.00082	
			Fatty acids, tall oil	Proprietary	30.00000	0.00074	
			Reaction product of acetophenone, formaldehyde, thiourea and oleic acid in dimethyl formamide	68527-49-1	30.00000	0.00074	
			Alkenes	Proprietary	100.00000	0.00059	
			Olefins	Proprietary	5.00000	0.00030	
			Poly(oxy-1,2-ethanediyl), .alpha.-isodecyl-.omega.-hydroxy-	61827-42-7	30.00000	0.00028	
			Propargyl alcohol	107-19-7	10.00000	0.00025	
			Calcium chloride	10043-52-4	1.00000	0.00019	

			Polypropylene glycol	25322-69-4	30.00000	0.00018	
			Siloxanes and Silicones, di-Me, reaction products with silica	67762-90-7	30.00000	0.00018	
			Polyethylene glycol	25322-68-3	5.00000	0.00016	
			Complex alkylamine	Proprietary	5.00000	0.00005	
			2,7-Naphthalenedisulfonic acid, 3-hydroxy-4-[(4-sulfor-1-naphthalenyl)azo] -, trisodium salt	915-67-3	0.10000	0.00003	
			Talc	14807-96-6	1.00000	0.00003	
			Sodium hydroxide	1310-73-2	30.00000	0.00002	
			Alkane	Proprietary	1.00000	0.00001	Denise Tuck, Halliburton, 3000 N. Sam Houston Pkwy E., Houston, TX 77032, 281-871-6226
			Hemicellulase enzyme	9012-54-8	5.00000	0.00000	
			Sodium bicarbonate	144-55-8	0.01000	0.00000	
			Ethylenediaminetetraacetic acid, tetrasodium salt	64-02-8	0.01000	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)