

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	8/10/2017
Job End Date:	8/18/2017
State:	Texas
County:	Ward
API Number:	42-475-37254-00-00
Operator Name:	FELIX ENERGY HOLDINGS II, LLC
Well Name and Number:	UL MAYFLOWER 42-18 3H
Latitude:	31.51023800
Longitude:	-103.20694900
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	10,974
Total Base Water Volume (gal):	16,418,881
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	90.02292	Density = 8.340
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.52389	

Petro-Flo	Bio-Cide International	Biocide					
				Listed Below			
FDP-S1226-15	Halliburton	Surfactant					
				Listed Below			
Scalechek(R) SCP-2 Scale Inhibitor	Halliburton	Scale Preventer					
				Listed Below			
FDP-S1176-15	Halliburton	Friction Reducer					
				Listed Below			
HAI-OS ACID INHIBITOR	Halliburton	Corrosion Inhibitor					
				Listed Below			
SAND-PREMIUM WHITE-30/50, BULK	Halliburton	Proppant					
				Listed Below			
SAND-COMMON WHITE-100 MESH, SSA-2, BULK (100003676)	Halliburton	Proppant					
				Listed Below			
OptiKleen-WF (TM)	Halliburton	Concentrate					

				Listed Below			
HYDROCHLORIC ACID	Halliburton	Solvent					
				Listed Below			
Cla-Web(TM) II	Halliburton	Clay Stabilizer					
				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	9.40250	
			Hydrochloric acid	7647-01-0	60.00000	0.21075	
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.02692	
			Polyacrylate	Proprietary	30.00000	0.02692	
			Alcohols, C12-13, ethoxylated	66455-14-9	30.00000	0.02071	
			Ammonium compound	Proprietary	30.00000	0.01451	
			Chlorine compound	Proprietary	30.00000	0.01451	
			Sodium perborate tetrahydrate	10486-00-7	100.00000	0.01020	
			Sodium chloride	7647-14-5	5.00000	0.00497	
			Glassy calcium magnesium phosphate	65997-17-3	100.00000	0.00460	
			Castor oil, ethoxylated	61791-12-6	5.00000	0.00449	
			9-Octadecenamide, n,n-bis-2(hydroxy-ethyl)-,(Z)	93-83-4	5.00000	0.00449	
			Sorbitan, mono-9-octadecenoate, (Z)	1338-43-8	5.00000	0.00449	
			Ammonium chloride	12125-02-9	5.00000	0.00449	
			Alcohols, C12-16, ethoxylated	68551-12-2	5.00000	0.00345	
			Quaternary amine	Proprietary	1.00000	0.00097	
			Methanol	67-56-1	60.00000	0.00082	
			Amine salts	Proprietary	1.00000	0.00053	

			Fatty acids, tall oil	Proprietary	30.00000	0.00041	
			Ethoxylated alcohols	Proprietary	30.00000	0.00041	
			Reaction product of acetophenone, formaldehyde, thiourea and oleic acid in dimethyl formamide	68527-49-1	30.00000	0.00041	
			Olefins	Proprietary	5.00000	0.00016	
			Propargyl alcohol	107-19-7	10.00000	0.00014	
			Amine	Proprietary	0.10000	0.00005	Denise Tuck, Halliburton, 3000 N. Sam Houston Pkwy E., Houston, TX 77032, 281-871-6226
			Ethylene oxide	75-21-8	0.01000	0.00001	
			Sodium Hydroxide	1310-73-2			
			Sodium Chlorite	7758-19-2			
			Sodium Carbonate	497-19-8			
			Sodium Chloride	7647-14-5			

* 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)