Submit within 45 days of well completion

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

Revised November 6, 2013

1. WELL API NO. 30-015-37652
2. Well Name: CRESCENT HALE 1 FEDERAL COM #001
3. Well Number: 001

HYDRAULIC FRACTURING FLUID DISCLOSURE

☒ Original

☐ Amendment

4. Surface Hole Location: Unit:D Lot:4 Section:1 Township:19S Range:30E Feet from:330 N/S Line:N Feet from:330 E/W Line:W
5. Bottom Hole Location: Unit:D Lot:4 Section:1 Township:19S Range:30E Feet from:330 N/S Line:N Feet from:330 E/W Line:W
6. latitude: 32.6957893 longitude: -103.9330521
7. County: Eddy

8. Operator Name and Address: CIMAREX ENERGY CO. OF COLORADO, 202 S. Cheyenne Ave, Ste 1000, Tulsa 74103
9. OGRID: 162683
10. Phone Number: 918-295-1763
11. Last Fracture Date: 9/10/2015 Frac Performed by: Halliburton
12. Production Type: O
13. Pool Code(s): 5200
14. Gross Fractured Interval: 7,650 ft to 7,840 ft
15. True Vertical Depth (TVD): 8,696 ft
16. Total Volume of Fluid Pumped: 171,955 gals
17. Total Volume of Re-Use Water Pumped: N/A
18. Percent of Re-Use Water in Fluid Pumped: Not Disclosed

19. **HYDRAULIC FLUID COMPOSITION AND CONCENTRATION:**

Trade Name	Supplier	Purpose	Ingredients	(CAS #) Chemical Abstract Service #	Maximum Ingredient Concentration in Additive (% by mass)	Maximum Ingredient Concentration in HF Fluid (% by mass)
Fresh Water	Operator	Base Fluid	Fresh Water	7732-18-5	100%	79.80663%
BC-140 X2, BE-9, LOSURF-360, NA, OPTIFLO-III DELAY	Halliburton	Biocide, Breaker, Concentrate, Friction Reducer, Gelling Agent, Initiator, Scale Preventer, Surfacta	Quartz (SiO2) (Crystalline Silica)	14808-60-7	100%	19.65563%
			Water	7732-18-5	100%	0.12678%
			Guar gum	9000-30-0	100%	0.12058%
			Monoethanolamine borate	26038-87-9	100%	0.02751%
			Poly(oxy-1,2-ethanediyl), .alpha.-isodecyl-.omega.-hydroxy-	61827-42-7	30%	0.02401%
			Hydrotreated light petroleum distillate	64742-47-8	30%	0.0181%
			Inorganic salt	Proprietary	30%	0.0181%
			Polyacrylate	Proprietary	30%	0.0181%
			Ethylene glycol	107-21-1	30%	0.00829%
			Alcohols, C12-16, ethoxylated	68551-12-2	10%	0.00603%
			Ammonium chloride	12125-02-9	10%	0.00603%
			Bentonite, benzyl(hydrogenated tallow alkyl) dimethylammonium stearate complex	121888-68-4	5%	0.00603%
			Glassy calcium magnesium phosphate	65997-17-3	100%	0.00564%
			Complex alkylamine	Proprietary	5%	0.004%
			Sodium perborate tetrahydrate	10486-00-7	100%	0.0031%
			9-Octadecenamide, n,n-bis-2 (hydroxy-ethyl)-,(Z)	93-83-4	5%	0.00304%
			Fatty acid ester	Proprietary	5%	0.00304%
			Ammonium persulfate	7727-54-0	100%	0.00282%
			Surfactant mixture	Proprietary	1%	0.00248%
			Tributyl tetradecyl phosphonium chloride	81741-28-8	10%	0.00192%
			Silica gel	112926-00-8	1%	0.00124%
			Alkane	Proprietary	1%	0.00085%
			Crystalline silica, quartz	14808-60-7	30%	0.00085%
			Cured acrylic resin	Proprietary	30%	0.00085%
			Sodium persulfate	7775-27-1	100%	0.00028%
			Crystalline Silica, Quartz	14808-60-7	0.1%	0.00017%
			2,7-Naphthalenedisulfonic acid, 3-hydroxy-4-[(4-sulfor-1-naphthalenyl) azo] -, trisodium salt	915-67-3	0.1%	6E-05%
			Ethylenediaminetetraacetic acid, tetrasodium salt	64-02-8	0.01%	6E-05%
			Sodium bicarbonate	144-55-8	0.01%	6E-05%
			Sodium sulfate	7757-82-6	0.1%	6E-05%
HCL 15%	Petroplex	Acid	Hydrochloric Acid	7647-01-0	15%	0.01818%
Cronox AK-50	Petroplex	Corrosion Inhibitor	Oxyalkylated Alkylphenol	Proprietary	30%	7E-05%
			Heavy Aromatic Naptha	64742-94-5	30%	7E-05%
			Isopropanol	67-63-0	30%	7E-05%
			Fatty Acids	Proprietary	10%	2E-05%
			Complex Alkylaryl Polyo-Ester	Proprietary	10%	2E-05%
			Tar Bases, Quinoline Derivatives, Benzyl Chloride-Quaternized	72480-70-7	10%	2E-05%
			Formaldehyde	50-00-0	10%	2E-05%
			Acetylenic Alcohol	Proprietary	5%	1E-05%
			Propargyl Alcohol	107-19-7	5%	1E-05%
			Napthalene	91-20-3	5%	1E-05%
Citric Acid	Petroplex	Iron Control	Citric Acid	77-92-9	100%	0.00607%
EC9546A	Petroplex	Surfactant	Heavy Aromatic Naptha	64742-94-5	10%	2E-05%
			Isopropanol	67-63-0	60%	0.00013%
			Polyethylene Glycol	25322-68-3	5%	1E-05%
			Napthalene	91-20-3	1%	0%
			Phosphoric Acid Ester	Proprietary	10%	2E-05%
			Oxyalkylated Alcohol	Proprietary	10%	2E-05%
			Oxyalkylated Alkyl Alcohol	Proprietary	10%	2E-05%

20. I, as Operator, hereby certify that the information shown on this disclosure form is true and complete to the best of my knowledge and belief.

Signature: Signed Electronically Printed Name: Skipper Herring Title: Manager Stimulation Operations

Date: 9/29/2015

E-mail Address: sherring@cimarex.com

NMOCD does not require the reporting of information beyond MSDS data as described in 29 CFR 1910.1200. NMOCD does not require the reporting or disclosure of proprietary, trade secret or confidential business information.