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.
30-015-41166

2. Well Name:
CROW FEDERAL #022H

3. Well Number:
022H

HYDRAULIC FRACTURING FLUID DISCLOSURE

☒ **Original**

☐ **Amendment**

4. Surface Hole Location:
Unit:E Lot:E Section:9 Township:17S Range:31E
Feet from:1680 N/S Line:N
Feet from:10 E/W Line:W

5. Bottom Hole Location:
Unit:E Lot:E Section:9 Township:17S Range:31E
Feet from:1680 N/S Line:N
Feet from:10 E/W Line:W

6. latitude: 32.8516748804583 longitude: -103.883393892565

7. County:
Eddy

8. Operator Name and Address:
APACHE CORP
303 Veterans Airpark Lane
Suite 3000
Midland 79705

9. OGRID: 873

10. Phone Number: 432-818-1062

11. Last Fracture Date: 12/2/2013 Frac Performed by: Pumpco

12. Production Type:
O

13. Pool Code(s):
26770

14. Gross Fractured Interval:
5,336 ft to 9,738 ft

15. True Vertical Depth (TVD):
5,200 ft

16. Total Volume of Fluid Pumped:
3,069,504 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)
Water	Butch's	Carrier/Base Fluid	Water	7732-18-5	100%	87.05003%
Sand (Proppant)	TSS	Proppant	Silica Substrate	14808-60-7	100%	9.0565%
Hydrochloric Acid (15%)	Reagent	Acidizing	Hydrochloric Acid	7647-01-0	15%	0.51651%
AP-Bio-1	Dow Chemical Company	Biocide	Glutaraldehyde	111-30-8	42.5%	0.00951%
			Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	7.5%	0.00168%
			Ethanol	64-17-5	1%	0.00022%
AP-FR-1	Ashland	Friction Reducer	Hydrocarbon-aliphatic	25450-40-01	30%	0.02659%
			Fatty alcohol alkoxylate	Proprietary	5%	0.00443%
			Polyacrylate based copolymer	Proprietary	35%	0.03102%
Ferriplex 40	Chemplex	Iron Control	Sodium Hydroxide	1310-73-2	1%	0.00017%
			Sodium Sulfate Anhydrous	7757-82-6	2%	0.00034%
			Trisodium Nitrilotriacetate	5064-31-3	40%	0.00672%
Plexbreak 145	Chemplex	Non-Emulsifier	2-Butoxyethanol	111-76-2	15%	0.00092%
			Cocamide Based Surfactant	Proprietary	10%	0.00061%
			Diethanolamine	111-42-2	3%	0.00018%
			Methyl Alcohol	67-56-1	15%	0.00092%
Plexhib 256	Chemplex	Acid Inhibitor	Methyl Alcohol	67-56-1	60%	0.00329%
			Propargyl Alcohol	107-19-7	10%	0.00055%
			Thiourea/Formaldehyde Copolymer	68527-49-1	30%	0.00165%
			Polyethoxylated Alcohol Surfactant	68951-67-7	30%	0.00165%
			C-14 to C-16 Alpha Olefins	64743-02-8	5%	0.00027%
AP-Surf-1A	Blentech	Surfactant	Methanol	67-56-1	25%	0.0218%
			Sulfonate	Proprietary	4%	0.00349%
			Alkyl alkoxylate	Proprietary	11%	0.00959%
Claymax	Chemplex	Clay Stabilizer	Choline Chloride	67-48-1	65%	0.11735%
Plexset 730	Chemplex	Proppant Consolidator	Alcohol Ethoxylates	Proprietary	60%	0.02576%
			Methyl Alcohol	67-56-1	50%	0.02147%

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: Fatima Vasquez Title: Regulatory Tech

Date: 2/6/2014

E-mail Address: fatima.vasquez@apachecorp.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.