## **Hydraulic Fracturing Fluid Product Component Information Disclosure**

| 11/6/2014           | Job Start Date:                |
|---------------------|--------------------------------|
| 11/8/2014           | Job End Date:                  |
| Oklahoma            | State:                         |
| Alfalfa             | County:                        |
| 35-003-23012-00-00  | API Number:                    |
| SandRidge Energy    | Operator Name:                 |
| Burleson 2611 2-19H | Well Name and Number:          |
| -98.41832693        | Longitude:                     |
| 36.72401046         | Latitude:                      |
| NAD27               | Datum:                         |
| NO                  | Federal/Tribal Well:           |
| 5,713               | True Vertical Depth:           |
| 3,114,846           | Total Base Water Volume (gal): |
| 0                   | Total Base Non Water Volume:   |
|                     |                                |







## **Hydraulic Fracturing Fluid Composition:**

| Trade Name   | Supplier              | Purpose                     | Ingredients                     | Chemical<br>Abstract Service<br>Number<br>(CAS #) | Maximum Ingredient Concentration in Additive (% by mass)** | Maximum Ingredient Concentration in HF Fluid (% by mass)** | Comments |
|--|-----------------------|-----------------------------|---------------------------------|---|--|--|----------|
| Water  | Archer                | Carrier/Base Fluid          |                                 |   |  |  |          |
|  |                       |                             | Water                           | 7732-18-5   | 100.00000  | 94.67576   | None     |
| Sand (Proppant)  | Archer                | Proppant                    |                                 |   |  |  |          |
|  |                       |                             | Silica Substrate                | NA  | 100.00000  | 4.51194  | None     |
| Hydrochloric Acid<br>(15%)   | Archer                | Acidizing                   |                                 |   |  |  |          |
|  |                       |                             | Hydrochloric Acid               | 7647-01-0   | 15.00000   |  |          |
|  |                       |                             | Methyl Alcohol                  | 67-56-1   | 80.00000   | 0.00091  | None     |
|  |                       |                             | thiourea-formaldehyde copolymer | 68527-49-1  | 15.00000   |  |          |
|  |                       |                             | NONYL PHENOL, 4 MOL             | 104-40-5  | 10.00000   | 0.00007  | None     |
| AIC  | Archer                | Liquid Acid Iron<br>Control |                                 |   |  |  |          |
|  |                       |                             | Acetic Acid                     | 64-19-7   | 50.00000   | 0.00203  | None     |
|  |                       |                             | Citric Acid                     | 77-92-9   | 30.00000   | 0.00122  | None     |
| DiKlor   | Sabre Energy Services | Oxidizer                    |                                 |   |  |  |          |
|  |                       |                             | Chlorine Dioxide                | 10069-04-4  | 0.40000  | 0.00038  |          |
|  |                       |                             | Water                           | 7732-18-5   | 99.90000   | 0.00025  |          |
| Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS. |                       |                             |                                 |   |  |  |          |
|  |                       | Other Chemicals             |                                 |   |  |  |          |
|  |                       |                             | Water                           | 7732-18-5   |  | 0.03907  |          |

|  | Anionic Polymer                | N/A        | 0.01953 |  |
|--|--------------------------------|------------|---------|--|
|  | Aliphatic Hydrocarbon          | 64742-47-8 | 0.01953 |  |
|  | Water                          | 7732-18-5  | 0.00878 |  |
|  | Polyol Ester                   | N/A        | 0.00326 |  |
|  | Oxyalkylated Alcohol           | 68002-97-1 | 0.00326 |  |
|  | Sodium Salt of Phosphate Ester | 68131-72-6 | 0.00146 |  |
|  | Acrylic Polymer                | 28205-96-1 | 0.00146 |  |
|  | Water                          | 7732-18-5  | 0.00142 |  |
|  | Polyglycol Ester               | N/A        | 0.00065 |  |
|  | WATER                          | 7732-18-5  | 0.00041 |  |
|  | TRADE SECRET                   | N/A        | 0.00027 |  |
|  | Alcohol Ethoxylate Surfactants | N/A        | 0.00017 |  |
|  | n-olefins                      | N/A        | 0.00009 |  |
|  | ISOPROPANOL                    | 67-63-0    | 0.00007 |  |
|  | METHANOL                       | 67-56-1    | 0.00007 |  |
|  | Propargyl Alcohol              | 107-19-7   | 0.00007 |  |
|  | Ethylenediaminetetraacetate    | 64-02-8    | 0.00007 |  |
|  | Cinnamic Aldehyde              | 104-55-2   |         |  |
|  | Buffer                         | N/A        |         |  |
|  | Acetic Acid                    | 64-19-7    |         |  |
|  | Water                          | 7732-18-5  |         |  |
|  | Surfactant                     | N/A        |         |  |

<sup>\*</sup> Total Water Volume sources may include fresh water, produced water, and/or recycled water \*\* Information is based on the maximum potential for concentration and thus the total may be over 100%

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)