## Hydraulic Fracturing Fluid Product Component Information Disclosure

| Fracture Date              | 2/22/2013    |                               |
|----------------------------|--------------|-------------------------------|
| State:                     | California   |                               |
| County:                    | Kern         |                               |
| API Number:                | 04-030-49844 |                               |
| Operator Name:             |              | Occidental of Elk Hills, Inc. |
| Well Name and Number:      | 77-18R       |                               |
| Longitude:                 | -119.540452  |                               |
| Latitude:                  | 35.312674    |                               |
| Long/Lat Projection:       | NAD83        |                               |
| Production Type:           | Oil          |                               |
| True Vertical Depth (TVD): | 3,141        |                               |
| Total Water Volume (gal)*: | 22,391       |                               |

## Hydraulic Fracturing Fluid Composition:

| Trade Name                                      | Supplier         | Purpose   | Ingredients                                       | Chemical Abstract<br>Service Number<br>(CAS #) | Maximum Ingredient Concentration in Additive (% by mass)** | Maximum Ingredient Concentration in HF Fluid (% by mass)** | Comments |
|---|------------------|---|---|--|--|--|----------|
| Produced Water<br>(Oxy Provided),<br>YF122 Flex | Schlumberge<br>r | Activator, Surfactant,<br>Breaker, Breaker Aid,<br>Gelling Agent,<br>Crosslinker, Clay Control<br>Agent, Scale Inhibitor,<br>Industrial Antimicrobial,<br>Emulsion Preventer,<br>Propping Agent | Water (Including Mix Water Supplied by Client)*   | -  |  | 84.82270%  |          |
|   |                  |   | Crystalline silica                                | 14808-60-7                                     | 94.08774%  | 14.27997%  |          |
|   |                  |   | Phenolic resin                                    | 9003-35-4                                      | 1.92016%   | 0.29143%   |          |
|   |                  |   | Propan-2-ol                                       | 67-63-0  | 0.86136%   | 0.13073%   |          |
|   |                  |   | Guar gum  | 9000-30-0                                      | 0.82599%   | 0.12536%   |          |
|   |                  |   | Alcohol, C7-9-iso, C8, ethoxylated                | 78330-19-5                                     | 0.63978%   | 0.09710%   |          |
|   |                  |   | Potassium borate                                  | 1332-77-0                                      | 0.33595%   | 0.05099%   |          |
|   |                  |   | Diammonium peroxidisulphate                       | 7727-54-0                                      | 0.29610%   | 0.04494%   |          |
|   |                  |   | Glycerol  | 56-81-5  | 0.16496%   | 0.02504%   |          |
|   |                  |   | Ethane-1,2-diol                                   | 107-21-1                                       | 0.14950%   | 0.02269%   |          |
|   |                  |   | 2,2`,2"-nitrilotriethanol                         | 102-71-6                                       | 0.14477%   | 0.02197%   |          |
|   |                  |   | 2-Propenoic acid, polymer with sodium phosphinate | 129898-01-7                                    | 0.14346%   | 0.02177%   |          |
|   |                  |   | Polyethylene glycol monohexyl ether               | 31726-34-8                                     | 0.13751%   | 0.02087%   |          |
|   |                  |   | Potassium hydroxide                               | 1310-58-3                                      | 0.10982%   | 0.01667%   |          |
|   |                  |   | Zirconium dichloride oxide                        | 7699-43-6                                      | 0.08362%   | 0.01269%   |          |
|   |                  |   | Crosslinked PO/EO-block polymer                   | 68123-18-2                                     | 0.05012%   | 0.00761%   |          |
|   |                  |   | Vinylidene chloride/methylacrylate copolymer      | 25038-72-6                                     | 0.03125%   | 0.00474%   |          |
|   |                  |   | Sodium chloride                                   | 7647-14-5                                      | 0.02945%   | 0.00447%   |          |
|   |                  |   | Non-crystalline silica                            | 7631-86-9                                      | 0.02020%   | 0.00307%   |          |
|   |                  |   | Tetrakis(hydroxymethyl)phosphonium                | 55566-30-8                                     | 0.01795%   | 0.00272%   |          |

|  | s      | sulfate                                      |            |            |            |
|--|--------|--|------------|------------|------------|
|  | F      | Alkyl (c10-c14) alcohols, ethoxylated        | 66455-15-0 | 0.01669%   | 0.00253%   |
|  | F      | Alcohol, C11-14, ethoxylated                 | 78330-21-9 | 0.01665%   | 0.00253%   |
|  | N      | Methyl oxirane polymer with oxirane          | 9003-11-6  | 0.01651%   | 0.00251%   |
|  | (      | Calcium chloride                             | 10043-52-4 | 0.01359%   | 0.00206%   |
|  |        | Dioctyl sulfosuccinate sodium salt           | 577-11-7   | 0.00780%   | 0.00118%   |
|  | [<br>C | Dicoco dimethyl quaternary ammonium chloride | 61789-77-3 | 0.00603%   | 0.00091%   |
|  | F      | Propylene glycol                             | 57-55-6    | 0.00167%   | 0.00025%   |
|  | N      | Magnesium silicate hydrate (talc)            | 14807-96-6 | 0.00164%   | 0.00025%   |
|  | 2      | 2,2'-oxydiethanol                            | 111-46-6   | 0.00151%   | 0.00023%   |
|  | 5      | Sodium hydroxide                             | 1310-73-2  | 0.00076%   | 0.00011%   |
|  | 2      | 2-ethylhexan-1-ol                            | 104-76-7   | 0.00022%   | 0.00003%   |
|  | F      | Potassium oleate                             | 143-18-0   | 0.00011%   | 0.00002%   |
|  | C      | Dleic acid                                   | 112-80-1   | 0.00009%   | 0.00001%   |
|  | F      | Acetic acid, potassium salt                  | 127-08-2   | 0.00002%   | < 0.00001% |
|  | F      | Acetic acid                                  | 64-19-7    | < 0.00001% | < 0.00001% |
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<sup>\*</sup> Total Water Volume sources may include fresh water, produced water, and/or recycled water

Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

<sup>\*\*</sup> Information is based on the maximum potential for concentration and thus the total may be over 100%