

## Hydraulic Fracturing Fluid Product Component Information Disclosure

|                            |                                    |
|----------------------------|------------------------------------|
| Fracture Date:             | 12/02/2011                         |
| Province:                  | BC                                 |
| Region:                    | Altares                            |
| Well Number:               | 26297                              |
| Operator Name:             | Canadian Natural Resources Limited |
| Well Name:                 | CNRL HZ ALTARES B-A093-I/094-B-01  |
| Longitude:                 | -122.020776                        |
| Latitude:                  | 56.143466                          |
| Long/Lat Projection:       | NAD83                              |
| Production Type:           | Undefined                          |
| True Vertical Depth (TVD): | 5,200                              |
| Total Water Volume (m3)*:  | 18,420                             |

### 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 |
|---------------------------------|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|----------|
| HCl Acid; Slickwater; ClearFRAC | Talisman     | Base Fluid; Antifoam Agent; Bactericide; Breaker; Chelating Agent; Corrosion Inhibitor; Friction Reducer; Gelling Agent; Hydrochloric Acid; Resin Coated Proppant; Rheology Modifier; Sand; Scale Inhibitor; Surfactant | Water (Includes Mix Water Supplied by Client) | -                                        | 100.00%                                                    | 88.12590%                                                  |          |
| HCl Acid; Slickwater; ClearFRAC | Schlumberger | Base Fluid; Antifoam Agent; Bactericide; Breaker; Chelating Agent; Corrosion Inhibitor; Friction Reducer; Gelling Agent; Hydrochloric Acid; Resin Coated Proppant; Rheology Modifier; Sand; Scale Inhibitor; Surfactant | Crystalline silica                            | -                                        | 93.42%                                                     | 11.09320%                                                  |          |
|                                 |              |                                                                                                                                                                                                                         | Crystalline silica                            | 14808-60-7                               | 3.66%                                                      | 0.43432%                                                   |          |
|                                 |              |                                                                                                                                                                                                                         | Hydrochloric Acid                             | 7647-01-0                                | 0.57%                                                      | 0.06720%                                                   |          |
|                                 |              |                                                                                                                                                                                                                         | Distillates (petroleum); hydrotreated light   | 64742-47-8                               | 0.24%                                                      | 0.02866%                                                   |          |
|                                 |              |                                                                                                                                                                                                                         | Sodium salt of aliphatic amine acid           |                                          | 0.04%                                                      | 0.00509%                                                   |          |
|                                 |              |                                                                                                                                                                                                                         | Ethane-1,2-diol                               | 107-21-1                                 | 0.04%                                                      | 0.00504%                                                   |          |
|                                 |              |                                                                                                                                                                                                                         | Alcohol ethoxylate C-10/16 with 6.5 EO        | 68002-97-1                               | 0.03%                                                      | 0.00358%                                                   |          |
|                                 |              |                                                                                                                                                                                                                         | Diatomaceous earth; calcined                  | 91053-39-3                               | 0.02%                                                      | 0.00194%                                                   |          |
|                                 |              |                                                                                                                                                                                                                         | Methanol                                      | 67-56-1                                  | 0.01%                                                      | 0.00156%                                                   |          |
|                                 |              |                                                                                                                                                                                                                         | Fatty acid amidoalkyl betaine                 |                                          | 0.01%                                                      | 0.00100%                                                   |          |
|                                 |              |                                                                                                                                                                                                                         | Aliphatic acids                               |                                          | 0.01%                                                      | 0.00094%                                                   |          |
|                                 |              |                                                                                                                                                                                                                         | Aliphatic alcohols; ethoxylated #1            |                                          | 0.01%                                                      | 0.00094%                                                   |          |
|                                 |              |                                                                                                                                                                                                                         | Calcium chloride                              | 10043-52-4                               | 0.01%                                                      | 0.00084%                                                   |          |
|                                 |              |                                                                                                                                                                                                                         | Sodium chloride                               | 7647-14-5                                | 0.01%                                                      | 0.00084%                                                   |          |

## Hydraulic Fracturing Fluid Product Component Information Disclosure

| 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 |
|------------|----------|---------|------------------------------------------------|------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|----------|
|            |          |         | Propan-2-ol                                    | 67-63-0                                  | 0.00%                                                      | 0.00051%                                                   |          |
|            |          |         | Sodium hydroxide (impurity)                    | 1310-73-2                                | 0.00%                                                      | 0.00042%                                                   |          |
|            |          |         | 5-chloro-2-methyl-4-isothiazolin-3-one         | 26172-55-4                               | 0.00%                                                      | 0.00032%                                                   |          |
|            |          |         | Magnesium nitrate                              | 10377-60-3                               | 0.00%                                                      | 0.00032%                                                   |          |
|            |          |         | Prop-2-yn-1-ol                                 | 107-19-7                                 | 0.00%                                                      | 0.00031%                                                   |          |
|            |          |         | Ethoxylated alcohols                           |                                          | 0.00%                                                      | 0.00023%                                                   |          |
|            |          |         | Ethoxylated alcohols #2                        |                                          | 0.00%                                                      | 0.00023%                                                   |          |
|            |          |         | 2-Methyl-4-isothiazolin-3-one                  | 2682-20-4                                | 0.00%                                                      | 0.00016%                                                   |          |
|            |          |         | Magnesium chloride                             | 7786-30-3                                | 0.00%                                                      | 0.00016%                                                   |          |
|            |          |         | Trisodium nitrilotriacetate (impurity)         | 5064-31-3                                | 0.00%                                                      | 0.00008%                                                   |          |
|            |          |         | Crystalline silica: Quartz (SiO <sub>2</sub> ) | 14808-60-7                               | 0.00%                                                      | 0.00003%                                                   |          |
|            |          |         | Crystalline silica: cristobalite               | 14464-46-1                               | 0.00%                                                      | 0.00003%                                                   |          |

\* 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%

Information provided in this form with respect to ingredients in the fracturing fluid is consistent with the Material Safety Data Sheet (MSDS) information. The operator has completed this form with the information provided by the supplier. The operator cannot provide any of the supplier's proprietary information, trade secrets or confidential business information.