1. Product and Company Identification

Product Name: Produced Water
Synonym: Formation water, Produced Brine.
Product use: Disposal.
Manufacturer: Keyera
Address: Suite 600, Sunlife Plaza West
144 – 4th Avenue SW
Calgary, AB, T2P 3N4
Emergency Contact: 1-866-377-7110

2. Hazards Identification

EMERGENCY OVERVIEW
Potentially toxic based on impurities including salts. May be contaminated with crude oil or hydrocarbon condensate.

POTENTIAL HEALTH EFFECTS/ROUTES OF EXPOSURE

Eyes: This product is an irritant to the eyes.
Skin: This product is an irritant to the skin.
Ingestion: If this product is ingested, vomiting and diarrhea may occur. Aspiration of the liquid into the lungs may produce chemical pneumonia, severe lung damage and/or respiratory failure.
Inhalation: Not anticipated to be an inhalation hazard.

3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Ingredient Name</th>
<th>%</th>
<th>CAS No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dissolved minerals salts and water</td>
<td>100</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Hydrogen sulfide</td>
<td>Trace</td>
<td>7783-06-4</td>
</tr>
<tr>
<td>Crude oil and hydrocarbons</td>
<td>Trace</td>
<td>8005-02-9</td>
</tr>
</tbody>
</table>

Produced water may contain a variety of dissolved mineral salts including sodium chloride, calcium chloride, and potassium carbonate.
This product is a complex mixture consistent with the definition within WHMIS regulation CPR section 2. The listed components are provided as guidance based on the available knowledge of the stream.

4. First Aid Measures

Eyes: Immediately flush eyes while holding eyelid open, with water for at least 20 minutes. Seek medical attention if irritation persists.
Skin: Remove contaminated clothing and launder before wearing. Wash exposed skin with soap and water (waterless hand cleaner may be used if clean water is not readily available). Seek medical attention if irritation persists.
Inhalation: Ensure your own safety and use the appropriate respiratory protection to immediately remove the victim to an area free of contaminants. Give CPR or artificial respiration as needed and give oxygen if breathing is difficult. Keep victim at rest and get immediate medical attention.

Ingestion: Do not induce vomiting because of the danger of aspiration of liquids into the lungs. Obtain immediate medical attention.

5. Fire Fighting Measures

FLAMMABLE PROPERTIES
Non-flammable water based liquid with the potential of entrained hydrocarbon gas.

HAZARDOUS COMBUSTION PRODUCTS
Will not support combustion.

FIRE AND EXPLOSION HAZARDS
Will not support combustion.

EXTINGUISHING MEDIA
Small Fires: Keep dry chemical fire extinguishers available.
Large Fires: Use extinguishing agent suitable for surrounding fire.

FIRE FIGHTING INSTRUCTIONS:
The Produced Water itself will not burn, however contaminants contained within or that could float on top of the produced water.

UNUSUAL FIRE & EXPLOSION HAZARDS
Produced water is rarely considered as a fire hazard.

6. Accidental Release Measures

ACTIVATE SITE SPECIFIC EMERGENCY RESPONSE PLAN, IF AVAILABLE.

Small Spills: Stop flow of liquid contain for disposal.

Large Leaks: CALL Emergency Response Activation Telephone Number. Keep unauthorized personnel away and stay upwind. Protect bodies of water by dyking, if possible.

Evacuation: Evacuate unnecessary personnel.

Caution: Consideration should be given to environmental clean-up and waste material generation when deciding if the use of large volumes of water is appropriate for non-fire emergency situations. Clean-up crews must be properly trained and must utilize proper protective equipment.

7. Handling and Storage

HANDLING PRECAUTIONS
Wash thoroughly after handling. DO NOT drink or siphon by mouth.

STORAGE PRECAUTIONS
Outside storage is recommended.
WORK/HYGIENIC PRACTICES
Avoid skin exposure and wash hands before eating, drinking, smoking, or using toilet facilities. Do not eat, drink or smoke in areas of use or storage. Promptly remove contaminated clothing and launder before reuse.

8. Exposure Controls / Personal Protection

ENGINEERING CONTROLS
Ensure your own safety and use the appropriate respiratory protection. Showers and/or eyewash fountains should be provided within the immediate work area for emergency use when there is any possibility of liquids splashing.

PERSONAL PROTECTIVE EQUIPMENT
Eye/Face Protection: Wear safety glasses with side shields when handling this product.
Skin Protection: Avoid skin contact.
Respiratory Protection: Respiratory protection is not anticipated.

<table>
<thead>
<tr>
<th>Exposure Limits</th>
<th></th>
</tr>
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<tr>
<td>Dissolved minerals salts and water</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

9. Physical and Chemical Properties

Appearance and state: Clear liquid
Odour: Hydrocarbon odor
Odour Threshold: Not available
Boiling Point: >100 C
Melting Point: <0 C
Flash Point: The water mixture itself is not flammable but flammable impurities are possible. Flashpoint data is >100 C.

Auto Ignition: Not applicable
Lower Explosive Limit (%): Not applicable
Upper Explosive Limit (%): Not applicable
Vapour Pressure: Similar to water
Vapour Density (Air = 1): Not available
Viscosity: Not available
Specific Gravity: 1.0 to 1.2
Solubility ($H_2O$): Very soluble
pH: 3-11
Percent Volatiles: Not available
Evaporation Rate: Not available

## 10. Stability and Reactivity

### STABILITY

Stable

### CONDITIONS TO AVOID (STABILITY)

Material is stable under normal conditions.

### INCOMPATIBLE MATERIALS

Not applicable.

### HAZARDOUS DECOMPOSITION PRODUCTS:

Not available.

### HAZARDOUS POLYMERIZATION

Will Not Occur.

## 11. Toxicological Information

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No.</th>
<th>LD50</th>
<th>LC50</th>
</tr>
</thead>
<tbody>
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</table>

### POTENTIAL HEALTH EFFECTS

**Acute:** Contact will damage or irritate eyes and skin.

**Chronic effects:** Not available.

**Sensitization:** Not available.

**Mutagenicity:** Not available

**Reproductive effects:** Not available

**Carcinogenicity:** Not listed by IARC, NTP or ACGIH

**Target organs:** Eyes, skin.

## 12. Ecological Information

May contain salts.

## 13. Disposal Considerations

Water injection in approved wells. Avoid contact of spilled material and runoff with soil and surface waterways. Consult an environmental professional to determine if local, regional or national regulations would classify spilled or contaminated materials as hazardous waste. Use only approved transporters, recyclers, treatment, storage or disposal facilities. Dispose of in accordance with all applicable local and national regulations.
14. Transport Information

PROPER SHIPPING NAME: Not applicable
TDG CLASS: Not applicable
TDG IDENTIFICATION NUMBER: Not applicable
TDG SHIPPING LABEL: Not applicable
NAERG: Not applicable

15. Regulatory Information

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS)

Workplace Hazardous Materials Information Systems (WHMIS): This product has been classified in accordance with the hazard criteria of the CPR (Controlled Product Regulations), and the MSDS contains all of the information required by the CPR.

Class D2B – Materials Causing Serious and Other Toxic Effects

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA)
All components of this product are listed on the Canadian DSL Inventory.

16. Other Information

Prepared for: Keyera Health and Safety
Issue Date: September 23, 2011
More Information: (403) 205-7698
Technical Preparation by: Deerfoot Consulting Inc.

Disclaimer of Expressed and Implied Warranties

The information presented in the Material Safety Data Sheet is based on data believed to be accurate as of the date this Material Safety Data Sheet was prepared. However, neither Keyera, Deerfoot Consulting Inc nor any of their subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use.