## Section 1: IDENTIFICATION

<table>
<thead>
<tr>
<th>Product Name:</th>
<th>Natural Gas (Sweet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synonyms:</td>
<td>Sweet Gas.</td>
</tr>
<tr>
<td>Product Use:</td>
<td>Raw product.</td>
</tr>
<tr>
<td>Restrictions on Use:</td>
<td>Not available.</td>
</tr>
<tr>
<td>Manufacturer/Supplier:</td>
<td>Harvest Operations Corp.</td>
</tr>
<tr>
<td></td>
<td>Suite 1500, 700-2nd Street SW</td>
</tr>
<tr>
<td></td>
<td>Calgary AB T2P 2W1</td>
</tr>
<tr>
<td>Phone Number:</td>
<td>Main: 403-265-1178</td>
</tr>
<tr>
<td></td>
<td>Toll Free: 1-866-666-1178</td>
</tr>
<tr>
<td>Emergency Phone:</td>
<td>1-800-760-2826 (Harvest Operations 24-hr Emergency number)</td>
</tr>
<tr>
<td></td>
<td>1-613-996-6666 (CANUTEC)</td>
</tr>
<tr>
<td>Date of Preparation of SDS:</td>
<td>August 6, 2014</td>
</tr>
</tbody>
</table>

## GHS INFORMATION

**Classification:**
- Flammable Gases, Category 1
- Gases Under Pressure - Compressed Gas
- Simple Asphyxiants

**Hazard Statements:**
- Extremely flammable gas.
- Contains gas under pressure; may explode if heated.
- May displace oxygen and cause rapid suffocation.

**Precautionary Statements**

**Prevention:**
- Keep away from heat, sparks, open flames, and hot surfaces. – No smoking.

**Response:**
- Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
- Eliminate all ignition sources if safe to do so.

**Storage:**
- Store in a well-ventilated place.
- Protect from sunlight.

**Disposal:**
- Not applicable.

**Hazards Not Otherwise Classified:**
- Not applicable.

**Ingredients with Unknown Toxicity:**
- None.
Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Hazardous Ingredient(s)</th>
<th>Common name / Synonyms</th>
<th>CAS No.</th>
<th>% vol./vol.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural gas</td>
<td>Not available.</td>
<td>8006-14-2</td>
<td>100</td>
</tr>
<tr>
<td>Methane</td>
<td>Not available.</td>
<td>74-82-8</td>
<td>60 - 100</td>
</tr>
<tr>
<td>Ethane</td>
<td>Not available.</td>
<td>74-84-0</td>
<td>7 - 13</td>
</tr>
<tr>
<td>Carbon dioxide</td>
<td>Not available.</td>
<td>124-38-9</td>
<td>5 - 10</td>
</tr>
<tr>
<td>Propane</td>
<td>Not available.</td>
<td>74-98-6</td>
<td>3 - 7</td>
</tr>
<tr>
<td>Nitrogen</td>
<td>Not available.</td>
<td>7727-37-9</td>
<td>1 - 5</td>
</tr>
<tr>
<td>Butane</td>
<td>Not available.</td>
<td>106-97-8</td>
<td>1 - 5</td>
</tr>
<tr>
<td>Hydrogen sulfide (H2S)</td>
<td>Not available.</td>
<td>7783-06-4</td>
<td>&lt; 0.01</td>
</tr>
</tbody>
</table>

Section 4: FIRST-AID MEASURES

Inhalation: If inhaled: Call a poison center or doctor if you feel unwell.

**Acute and delayed symptoms and effects:** May displace oxygen and cause rapid suffocation. Central nervous system depression can occur if product is present in concentrations that will reduce the oxygen content of air below 18 % (vol). Symptoms may include headache, lightheadedness, drowsiness, disorientation, vomiting and seizures. Unconsciousness and death may occur with severe oxygen deprivation. May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. This product may contain small amounts of Hydrogen sulphide. Inhalation of Hydrogen sulphide may cause loss of sense of smell, major irritation of the respiratory tract, headache, nausea, vomiting, dizziness, and fluid buildup in the lungs (pulmonary edema), which can be fatal. At 300 ppm unconsciousness may occur after 20 minutes. From 300 to 500 ppm, death can occur within 1 to 4 hours of continuous exposure. At 500 ppm the respiratory system is paralyzed, the victim collapses almost instantaneously, and death can occur after exposure of only 30 to 60 minutes. Above 500 ppm Hydrogen sulphide may cause immediate loss of consciousness; death is rapid, and possibly immediate.

Eye Contact: If in eyes: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor.

**Acute and delayed symptoms and effects:** Contact with rapidly expanding or liquefied gas may cause irritation and/or frostbite. The pain after contact with liquid can quickly subside. Permanent eye damage or blindness could result. May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Skin Contact: Contact with rapidly expanding or liquefied gas may cause irritation and/or frostbite. If on skin: Wash with plenty of water. Get immediate medical advice/attention. Do not rub affected area. Remove non-adhering
contaminated clothing. Do not remove adherent material or clothing.

**Acute and delayed symptoms and effects:** Contact with rapidly expanding or liquefied gas may cause irritation and/or frostbite. Symptoms of frostbite include change in skin color to white or grayish-yellow. The pain after contact with liquid can quickly subside. May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

**Ingestion:**
Not a normal route of exposure.

**Acute and delayed symptoms and effects:** Not a normal route of exposure.

**General Advice:**
In case of accident or if you feel unwell, seek medical advice from a medical practitioner immediately (show the label or SDS where possible).

**Note to Physicians:**
Symptoms may not appear immediately. For inhalation of Hydrogen Sulphide, consider oxygen.

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### Section 5: FIRE-FIGHTING MEASURES

**FLAMMABILITY AND EXPLOSION INFORMATION**
Extremely flammable gas. Contains gas under pressure; may explode if heated. Will be easily ignited by heat, sparks or flames. Will form explosive mixtures with air. Vapors from liquefied gas are initially heavier than air and spread along ground. **CAUTION:** Methane is lighter than air and will rise. Vapors may travel to source of ignition and flash back. Cylinders exposed to fire may vent and release flammable gas through pressure relief devices. Containers may explode when heated. Ruptured cylinders may rocket. DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED.

If tank, rail car or tank truck is involved in a fire, ISOLATE for 1600 meters (1 mile) in all directions; also, consider initial evacuation for 1600 meters (1 mile) in all directions.

Fire involving Tanks: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. Do not direct water at source of ignition or safety devices; icing may occur. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

**Sensitivity to Mechanical Impact:**
This material is not sensitive to mechanical impact.

**Sensitivity to Static Discharge:**
This material is sensitive to static discharge.

**MEANS OF EXTINCTION**

**Suitable Extinguishing Media:**
Small Fire: Dry chemical or CO2.

Large Fire: Water spray or fog. Move containers from fire area if you can do it without risk.

**Unsuitable Extinguishing Media:**
Not available.

**Products of Combustion:**
Oxides of carbon. Oxides of sulphur.

**Protection of Firefighters:**
Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so. Vapors may cause dizziness or asphyxiation without warning. Some may be irritating if inhaled at high concentrations. Contact with gas or liquefied gas may cause burns, severe
injury and/or frostbite. Fire may produce irritating and/or toxic gases. Hydrogen sulphide is heavier than air and may collect in low lying areas and confined spaces. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection. Always wear thermal protective clothing when handling refrigerated/cryogenic liquids.

<table>
<thead>
<tr>
<th>Section 6: ACCIDENTAL RELEASE MEASURES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Emergency Procedures:</strong></td>
</tr>
<tr>
<td><strong>Personal Precautions:</strong></td>
</tr>
<tr>
<td><strong>Environmental Precautions:</strong></td>
</tr>
<tr>
<td><strong>Methods for Containment:</strong></td>
</tr>
<tr>
<td><strong>Methods for Clean-Up:</strong></td>
</tr>
<tr>
<td><strong>Other Information:</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Section 7: HANDLING AND STORAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Handling:</strong></td>
</tr>
<tr>
<td><strong>Storage:</strong></td>
</tr>
</tbody>
</table>
Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Component

Natural gas [CAS No. 8006-14-2]
   ACGIH: Asphyxia
   OSHA: No PEL established.

Methane [CAS No. 74-82-8]
   ACGIH: Asphyxia
   OSHA: No PEL established.

Ethane [CAS No. 74-84-0]
   ACGIH: Asphyxia
   OSHA: No PEL established.

Carbon dioxide [CAS No. 124-38-9]
   ACGIH: 5000 ppm (TWA); 30000 ppm (STEL); (1983)
   OSHA: 5000 ppm (TWA), 9000 mg/m³ (TWA);

Propane [CAS No. 74-98-6]
   ACGIH: Asphyxia
   OSHA: 1000 ppm (TWA), 1800 mg/m³ (TWA);

Nitrogen [CAS No. 7727-37-9]
   ACGIH: Simple asphyxiant
   OSHA: No PEL established.

Butane [CAS No. 106-97-8]
   ACGIH: 1000 ppm (STEL); (2012)
   OSHA: 800 ppm (TWA) [Vacated];

Hydrogen sulphide [CAS No. 7783-06-4]
   ACGIH: 1 ppm (TWA); 5 ppm (STEL); (2009);
   OSHA: 20 ppm (C); 50 ppm (Peak) (Maximum duration: 10 mins. once only if no other meas. exp. occurs.)
   10 ppm (TWA); 15 ppm (STEL) [Vacated];

PEL: Permissible Exposure Limit
TWA: Time-Weighted Average
STEL: Short-Term Exposure Limit
C: Ceiling

Engineering Controls: Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapour, gas, etc.) below recommended exposure limits.
PERSONAL PROTECTIVE EQUIPMENT (PPE)


Skin and Body Protection: Wear protective clothing.

Respiratory Protection: If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator that meets the requirements of CSA Standard CAN/CSA-Z94.4-11, or self-contained breathing apparatus must be used. Supplied air breathing apparatus must be used when oxygen concentrations are low or if airborne concentrations exceed the limits of the air-purifying respirators.

General Hygiene Considerations: Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Transparent.
Colour: Colourless.
Odour: Odourless.
Odour Threshold: Not available.
Physical State: Gas.
pH: Not available.
Melting Point / Freezing Point: Not available.
Initial Boiling Point: Not available.
Boiling Range: Not available.
Flash Point: < -187 °C (-304.6 °F)
Evaporation Rate: Not available.
Flammability (solid, gas): Extremely flammable gas.
Lower Flammability Limit: 5 % (Methane)
Upper Flammability Limit: 15 % (Methane)
Natural Gas (Sweet)

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Vapor Pressure: > 300 kPa at 32 °C (89.6 °F)
Vapor Density: Not available.
Relative Density: 0.720 to 0.780 (Water = 1) (Calculated)
Solubilities: Slightly soluble in water.
Partition Coefficient: n-Octanol/Water: Not available.
Auto-ignition Temperature: 450 °C (842 °F) (Propane)
Decomposition Temperature: Not available.
Viscosity: Not available.
Percent Volatile, wt. %: 100
VOC content, wt. %: Not available.
Density: Not available.
Coefficient of Water/Oil Distribution: Not available.

Section 10: STABILITY AND REACTIVITY

Reactivity: Contact with incompatible materials. Sources of ignition. Exposure to heat.
Chemical Stability: Stable under normal storage conditions.
Possibility of Hazardous Reactions: Not available.
Conditions to Avoid: Contact with incompatible materials. Sources of ignition. Exposure to heat.
Incompatible Materials: Oxidizers.
Hazardous Decomposition Products: Hazardous sulphur dioxide, and related oxides of sulphur may be generated upon combustion.

Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE

Product Toxicity
Oral: Not available.
Dermal: Not available.
Inhalation: Not available.

Component Toxicity

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No.</th>
<th>LD50 oral</th>
<th>LD50 dermal</th>
<th>LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural gas</td>
<td>8006-14-2</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Methane</td>
<td>74-82-8</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Ethane</td>
<td>74-84-0</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
</tbody>
</table>
Natural Gas (Sweet)

SAFETY DATA SHEET / MATERIAL SAFETY DATA SHEET

Date of Preparation: August 6, 2014

Propane
74-98-6
Not available. Not available. Not available.

Nitrogen
7727-37-9
Not available. Not available. Not available.

Butane
106-97-8
Not available. Not available. 658000 mg/m³ (rat); 4H 444 ppm (rat); 4H

Hydrogen sulphide
7783-06-4
Not available. Not available.

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation.


Symptoms (including delayed and immediate effects)

Inhalation: May displace oxygen and cause rapid suffocation. Central nervous system depression can occur if product is present in concentrations that will reduce the oxygen content of air below 18% (vol). Symptoms may include headache, lightheadedness, drowsiness, disorientation, vomiting and seizures. Unconsciousness and death may occur with severe oxygen deprivation. May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. This product may contain small amounts of Hydrogen sulphide. Inhalation of Hydrogen sulphide may cause loss of sense of smell, major irritation of the respiratory tract, headache, nausea, vomiting, dizziness, and fluid buildup in the lungs (pulmonary edema), which can be fatal. At 300 ppm unconsciousness may occur after 20 minutes. From 300 to 500 ppm, death can occur within 1 to 4 hours of continuous exposure. At 500 ppm the respiratory system is paralyzed, the victim collapses almost instantaneously, and death can occur after exposure of only 30 to 60 minutes. Above 500 ppm Hydrogen sulphide may cause immediate loss of consciousness; death is rapid, and possibly immediate.

Eye: Contact with rapidly expanding or liquefied gas may cause irritation and/or frostbite. The pain after contact with liquid can quickly subside. Permanent eye damage or blindness could result. May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Skin: Contact with rapidly expanding or liquefied gas may cause irritation and/or frostbite. Symptoms of frostbite include change in skin color to white or grayish-yellow. The pain after contact with liquid can quickly subside. May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: Not a normal route of exposure.

Skin Sensitization: Not available.

Respiratory Sensitization: Not available.

Medical Conditions Aggravated By Exposure: Not available.

EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)


Chronic Effects: Prolonged exposure to Natural gas can lead to hypoxia, bluish colouration to the skin, numbness, damage to the nervous system,
heart sensitization, reduced consciousness and death. Hydrogen sulphide may reduce lung function; cause neurological effects such as headaches, nausea, depression and personality changes; eye and mucous membrane irritation: damage to cardiovascular system.

Carcinogenicity: This product does not contain any carcinogens or potential carcinogens as listed by ACGIH, IARC, OSHA, or NTP.

Mutagenicity: Not available.
Reproductive Effects: Not available.
Developmental Effects
Teratogenicity: Not available.
Embryotoxicity: Not available.

Toxicologically Synergistic Materials: Not available.

---

**Section 12: ECOLOGICAL INFORMATION**

Ecotoxicity: Not available.
Persistence / Degradability: Not available.
Bioaccumulation / Accumulation: Not available.
Mobility in Environment: Not available.
Other Adverse Effects: Not available.

---

**Section 13: DISPOSAL CONSIDERATIONS**

Disposal Instructions: Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

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**Section 14: TRANSPORT INFORMATION**

U.S. Department of Transportation (DOT)
Proper Shipping Name: UN1971, NATURAL GAS, COMPRESSED, 2.1
Class: 2.1
UN Number: UN1971
Packing Group: Not applicable.
Label Code:
Section 15: REGULATORY INFORMATION

Chemical Inventories

US (TSCA)
The components of this product are in compliance with the chemical notification requirements of TSCA.

Canada (DSL)
The components of this product are in compliance with the chemical notification requirements of the NSN Regulations under CEPA, 1999.

Federal Regulations

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

WHMIS Classification:
Class A - Compressed Gas.
Class B1 - Flammable Gases.

Hazard Symbols:

United States
This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA Title III Component

<table>
<thead>
<tr>
<th>Component</th>
<th>Section 302 (EHS) TPQ (lbs.)</th>
<th>Section 304 EHS RQ (lbs.)</th>
<th>CERCLA RQ (lbs.)</th>
<th>Section 313</th>
<th>RCRA CODE</th>
<th>CAA 112 (r) TQ (lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrogen sulphide</td>
<td>500</td>
<td>100</td>
<td>100</td>
<td>313</td>
<td>U135</td>
<td>10000</td>
</tr>
</tbody>
</table>
Natural Gas (Sweet)

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State Regulations
Massachusetts
US Massachusetts Commonwealth’s Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No.</th>
<th>RTK List</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural gas</td>
<td>8006-14-2</td>
<td>Listed.</td>
</tr>
<tr>
<td>Methane</td>
<td>74-82-8</td>
<td>Listed.</td>
</tr>
<tr>
<td>Ethane</td>
<td>74-84-0</td>
<td>Listed.</td>
</tr>
<tr>
<td>Carbon dioxide</td>
<td>124-38-9</td>
<td>Listed.</td>
</tr>
<tr>
<td>Propane</td>
<td>74-98-6</td>
<td>Listed.</td>
</tr>
<tr>
<td>Nitrogen</td>
<td>7727-37-9</td>
<td>Listed.</td>
</tr>
<tr>
<td>Butane</td>
<td>106-97-8</td>
<td>Listed.</td>
</tr>
<tr>
<td>Hydrogen sulphide</td>
<td>7783-06-4</td>
<td>E</td>
</tr>
<tr>
<td>Benzene</td>
<td>71-43-2</td>
<td>E</td>
</tr>
</tbody>
</table>

Note: E = Extraordinarily Hazardous Substance

New Jersey
US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No.</th>
<th>RTK List</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methane</td>
<td>74-82-8</td>
<td>SHHS</td>
</tr>
<tr>
<td>Ethane</td>
<td>74-84-0</td>
<td>SHHS</td>
</tr>
<tr>
<td>Carbon dioxide</td>
<td>124-38-9</td>
<td>Listed.</td>
</tr>
<tr>
<td>Propane</td>
<td>74-98-6</td>
<td>SHHS</td>
</tr>
<tr>
<td>Nitrogen</td>
<td>7727-37-9</td>
<td>Listed.</td>
</tr>
<tr>
<td>Butane</td>
<td>106-97-8</td>
<td>SHHS</td>
</tr>
<tr>
<td>Hydrogen sulphide</td>
<td>7783-06-4</td>
<td>SHHS</td>
</tr>
</tbody>
</table>

Note: SHHS = Special Health Hazard Substance

Pennsylvania
US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No.</th>
<th>RTK List</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural gas</td>
<td>8006-14-2</td>
<td>Listed.</td>
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<tr>
<td>Methane</td>
<td>74-82-8</td>
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<tr>
<td>Hydrogen sulphide</td>
<td>7783-06-4</td>
<td>E</td>
</tr>
</tbody>
</table>

Note: E = Environmental Hazard
California

California Prop 65: WARNING: This product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

<table>
<thead>
<tr>
<th>Component</th>
<th>Type of Toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene</td>
<td>cancer; developmental, male</td>
</tr>
<tr>
<td>Toluene</td>
<td>developmental; female</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>cancer</td>
</tr>
</tbody>
</table>

Section 16: OTHER INFORMATION

Disclaimer: The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user’s responsibility to satisfy oneself as to the suitability and completeness of this information for his own particular use.

Date of Preparation of SDS: August 6, 2014
SDS Expiry Date (Canada): August 5, 2017
Version: 2.1
GHS SDS Prepared by: Deerfoot Consulting Inc.
Phone: (403) 720-3700