

**Level 2 Risk and Safety Management Plan
Vomar Industries Inc. (o/a Tank Traders)
285 Dissette Street
Bradford, Ontario
(Volume 1 of 2)**

prepared on behalf of:

**Vomar Industries Inc.
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La Salle, Manitoba
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by:



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on:

September 11, 2024

Stirling Engineering Inc. Reference # 23088

8.0 EMERGENCY RESPONSE AND PREPAREDNESS PLAN

Tank Traders has developed an Emergency Response and Preparedness Plan (“ERPP”) which is designed to help prevent, manage, and mitigate emergencies involving propane at the Bradford facility. It is intended to protect the public, property and environment from the consequences of a propane emergency. The ERPP has been developed to comply with applicable provisions of Ontario Regulation 211/01, the Environmental Emergency Regulations, made under the Canadian Environmental Protection Act, and CSA Z731-03 (2014) *Emergency Preparedness and Response*.

The ERPP considers two types of propane releases from the facility: onsite (generally small) releases and offsite or external releases.

Most aspects of the ERPP are associated with post-incident response and are not considered preventative. Some components of the ERPP, however, are designed to mitigate damage or prevent incident escalation. Where appropriate, these aspects of the ERPP have been factored into the quantitative risk assessment in Section 10.

8.1 Requirement for Emergency Response and Assistance Plan

Although propane may be shipped from the Tank Traders Bradford facility in quantities above the threshold limit of 3,000 L (793 USWG), as specified in Part 7 of the TDG Regulations, an Emergency Response and Assistance Plan (“ERAP”) is not required if the individual means of containment does not exceed 100 L when shipping quantities are above 3,000 L.

Tank Traders consigns propane only in small means of containment, less than 100 L, and does not require an ERAP. Propane deliveries to the facility are covered by the consignor’s ERAP.

8.2 Requirement for Environmental Emergency Plan

The bulk filling plant is required to prepare an Environmental Emergency (“E2”) Plan and file schedules with Environment Canada because the bulk storage quantity will be above the threshold of 4.5 metric tonnes.

Tank Traders has prepared the ERPP to comply with the Environment Canada requirements for an E2 Plan. Tank Traders is also developing the schedules for filing to inform Environment Canada of the ownership change for the facility.

8.3 Tank Traders Bradford Onsite Emergency Response Plan

The ERPP has been developed to provide further direction and clarification of responsibilities to the staff and management of Tank Traders for propane releases and incidents. The plan outlines how the company personnel will notify external agencies and assemble key staff to communicate, collaborate, coordinate, manage, and recover from an emergency.

The plan includes the following components:

- duties and responsibilities of personnel involved in management of an emergency;
- hazards associated with handling and use of propane;
- facility information;
- propane emergency prevention measures;

- how to initiate emergency shutdown to stop product flow and isolate power to electrical devices;
- a list of emergency equipment and resources available to during an emergency;
- evacuation procedures in case of propane leak or fire;
- review and update of the ERPP; and
- a site plan.

The ERPP describes evacuation procedures, both internal and external, and what actions are to be taken in during a propane leak or fire at, or in the vicinity of, the facility. The ERPP also includes how to stop a propane flow feeding a fire and the location of the emergency shutdown devices.

A copy of the current ERPP is provided in Appendix H.

8.3.1 Activation

In the event of a propane emergency, the plan can be activated by placing a call to “911” with the option of calling the ERAC call centre.

8.4 Emergency Planning – External

The following sections are included to address external emergency response and preparedness.

8.4.1 Names or Positions of Persons Authorized to Set Emergency Procedures In Motion

The person or persons identified in the ERPP as authorized to set emergency procedures “in motion”, and to take charge and coordinate off-site action will be established through the “Emergency Services Unified Command Structure”, as described in Table 3 – “Emergency Roles and Their Respective Responsibilities” of the ERPP in Appendix H of the RSMP.

8.4.2 Arrangements For Receiving Early Warning of Incidents, Alert and Call-Out Procedures

The Tank Traders Bradford facility is staffed continuously during regular hours of operation. Early warning of incidents during an emergency can be completed by staff or neighbors calling “911” as described in Section 8.2 of the ERPP.

8.4.3 Arrangements for Coordinating Resources Necessary to Implement the External Emergency Plan

Equipment and resources that may be used in the event of a propane emergency are kept onsite in an Emergency Response Kit. Additional equipment and resources may be obtained by activating the ERAC ERAP. Company Management may also requisition third-party resources at the request of the Technical Director. Activation of the ERPP, ERAP and the coordination of additional resources are described on pages 11-12 and 21-24 of the ERPP.

8.4.4 Arrangements for Providing Assistance With Onsite or Offsite Mitigation Actions

Equipment resources identified above, as well as designated Tank Traders personnel listed in Table 4 of the ERPP may be used to assist with onsite or offsite mitigation.

8.4.5 Arrangements for Providing the Public With Specific Information

As described in Figure 1 - “Incident Command Organizational Chart” of the ERPP, and in Table 3 – “Emergency Roles and Their Respective Responsibilities” of the ERPP, limited communication to the public may be provided by the Company Spokesperson. Additional communication may be provided as designated by the Emergency Services Unified Structure.

8.4.6 Arrangements for Provision of Information to the Emergency Services of Other Municipalities

The provision of information to other municipalities is to be coordinated by the Emergency Services Unified Command Structure, as described in Table 3 – “Emergency Roles and Their Respective Responsibilities” of the ERPP.

8.4.7 Public Notification or Alerting System

The public notification system in the ERPP consists of verbal notification. Door-to-door notification may also be used, as determined by the Emergency Services Unified Command Structure, depending on the nature and scope of the incident.

8.4.8 Off-Site Assistance Coordination with Municipal Evacuation Requirements

The provision for off-site assistance for evacuation is to be coordinated through the Technical Director as described in Table 3 – “Emergency Roles and Their Respective Responsibilities” of the ERPP, in consultation with the Emergency Services Unified Command Structure so that assistance, if required, matches the municipal evacuation plan.

8.4.9 Internal and External Evacuation Plans

Internal evacuation plans are described in Figure 3 – “Activation and Notification Flow Chart”, on page 22 of the ERPP, as well as the step-by-step procedure found on pages 23 and 24 of the ERPP.

External evacuation plans are situation specific and have not been included in the ERPP. Evacuation of external locations cannot be pre-determined, and should be assessed by the Emergency Services Unified Command Structure based on conditions at the time of the incident.

8.4.10 Reception Information, Transportation, Evacuation Facilities, and Responsibilities for Coordinating Affected People

The internal evacuation plan specifies that the Evacuation Warden is to coordinate the evacuation, on foot, to one of the two pre-designated muster locations, as described in Table 3 – “Emergency Roles and Their Respective Responsibilities” of the ERPP.

External evacuation, if recommended by the Emergency Services Unified Command Structure, the municipal Emergency Response Plan may be activated. Evacuation may include shelter in place.

8.5 First Responders

8.5.1 Municipal Fire Fighting

The fire department responsible for responding to emergencies at the Tank Traders Bradford facility is the BWG Fire and Emergency Services. It operates from one fire station, located approximately 3 km from the bulk filling plant, at:

77 Melbourne Drive
Bradford, Ontario

8.5.2 Emergency Medical Services

Emergency Medical Services (“EMS”) for the Town of Bradford West Gwillimbury is provided by BWG Fire and Emergency Services and the County of Simcoe Paramedic Services. The station closest to the Tank Traders facility is located at:

170 Artesian Industrial Parkway
Units 6 & 7
Bradford, Ontario

8.5.3 Municipal Emergency Response Plan

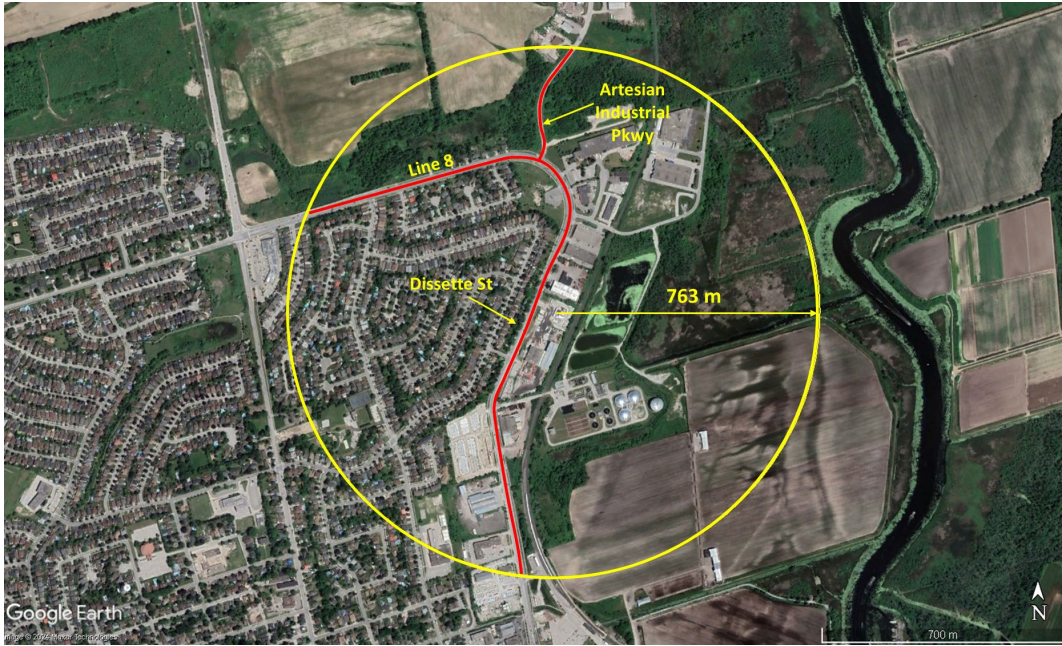
The Town of Bradford West Gwillimbury has an Emergency Response Plan as required under the *Emergency Management and Civil Protection Act, R.S.O 1990*. The plan developed by the Town of Bradford West Gwillimbury is designed to:

“provide key officials, agencies and departments with an overview of their collective and individual responsibilities during a potential, imminent or actual emergency.”

The plan allows for a centralized, controlled and coordinated response to emergencies in the Town, and may be implemented in whole or in part, as the situation warrants.

The Community Emergency Management Coordinator (“CEMC”) is responsible for the maintenance, updating and distribution of the plan. Both the CEMC and the Emergency Management Program Committee (“EMPC”) review the plan on an annual basis in an effort to keep it up to date.

Hazard Distance = 763 m



(Google Earth, imagery 2022)

GPS co-ordinates:

615,476 m Easting and 4,886,733 m Northing, Zone 17T

Municipalities within the Hazard Distance:

Town of Bradford West Gwillimbury (Lower Tier)
County of Simcoe (Upper Tier)

Municipal Clerks:

Tara Reynolds, Clerk
Town of Bradford West Gwillimbury
100 Dissette Street, Unit 7 & 8
Bradford, Ontario
L3Z 2A7

Mark Aitken, Chief Administrative Officer
County of Simcoe
1110 Highway 26
Midhurst, Ontario
L9X 1N6

Facility Municipal Address:

285 Dissette Street
Bradford, Ontario

Facility Legal Description:

Part of Lot 17, Concession 7
Town of Bradford West Gwillimbury
County of Simcoe

Largest Vessel Setback From Property Lines



(Google Earth, imagery 2022)



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PROJECT: Level 2 Risk and Safety Management Plan, Vomar Industries Inc. (o/a Tank Traders), 285 Dissette Street, Bradford, Ontario		TITLE: Supplementary Drawing for TSSA Advisory FS-162-09	
PROJECT No: 23088	REV: 00	DRAWN BY: RD	SHEET 1 OF 1
DATE: September 10, 2024	SCALE: N.T.S.	DWG No: 23088-SK-003	

**Emergency Response and Preparedness Plan
Vomar Industries Inc (o/a Tank Traders)
285 Dissette Street
Bradford, Ontario**

Prepared by:

**Vomar Industries Inc.
54 Rue Principale
La Salle, Manitoba
R0G 0A2**

Last Updated on:
September 11, 2024

List of Revisions

Date	Revision	Authorized Reviser	Authorization
July 9, 2024	<ul style="list-style-type: none">• Issued for Vomar review	Robert Wilson (Stirling Engineering Inc.) Authorized by Lindi Rasmussen	
September 11, 2024	<ul style="list-style-type: none">• Issued with RSMP	Robert Wilson (Stirling Engineering Inc.) Authorized by Lindi Rasmussen	

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1.0 INTRODUCTION

The health and safety of its employees, the public, and protection of the environment are integral to the Vomar Industries Inc. o/a Tank Traders (“Tank Traders”). To protect these interests, Tank Traders has developed this Emergency Response and Preparedness Plan (“ERPP”).

1.1 Purpose

This ERPP is designed to help prevent, manage, and mitigate emergencies involving propane at the Tank Traders Bradford facility. It is intended to protect the public, property and environment from the consequences of a propane emergency. This ERPP has been developed to comply with applicable provisions of several provincial and federal statutes.

1.1.1 Ontario Regulation 211/01

This document has been developed primarily to comply with the applicable provisions of *Ontario Regulation 211/01* under the *Technical Standards and Safety Act* pertaining to Risk and Safety Management Plans (“RSMP”). *Ontario Regulation 211/01, “Propane Storage and Handling”* requires all propane retail outlets, filling plants, cardlock/keylock, private outlets, and container refill centres to develop and submit an Emergency Response and Preparedness Plan as part of a Risk and Safety Management Plan. This ERPP has been developed to meet the applicable provisions of *Ontario Regulation 211/01* for RSMPs.

1.1.2 Environmental Emergency Regulations

Under the *Environmental Emergency Regulations* of the *Canadian Environmental Protection Act, 1999*, propane installations having an individual storage container system equal to or greater than 4.5 metric tonnes (approximately 2,345 United States Water Gallons (“USWG”)) must prepare an Environmental Emergency (“E2”) Plan and submit the required Schedules to Environment Canada.

This ERPP has also been prepared to comply with the applicable provisions of the *Environmental Emergency Regulations* under the *Canadian Environmental Protection Act* pertaining to Environmental Emergency Plans for propane emergencies.

1.1.3 CSA-Z731-03 (R2014): Emergency Preparedness and Response

Tank Traders has further designed this ERPP to meet applicable clauses of the voluntary standard, *CSA-Z731-03 (R2014) Emergency Preparedness and Response*. The standard is directed towards the development of tools and systems to support emergency preparedness and response in industry. This ERPP meets the applicable clauses set out by *CSA-Z731-03 (R2014)* for “Emergency Response Plans”.

1.2 Scope and Limitations

This ERPP has been developed for propane emergencies only, including fires at Tank Traders Bradford’s bulk propane plant facility at 285 Dissette Street. Coverage includes the general public surrounding the facility that may be affected by the consequences of a propane emergency occurring at the facility. This document is designed to address propane emergencies such as propane releases and onsite fires. Although this ERPP has been developed for propane

emergencies, it provides no guarantee for the successful mitigation of all propane emergencies at the Tank Traders Bradford facility.

1.3 Review and Update of the ERPP

This ERPP shall be updated as required to provide current propane emergency mitigation measures and to take into account any changes at the facility. Only a Program Coordinator listed in the table below may make changes to this ERPP.

Table 1: Authorized Person as Program Coordinator

Position	Name
President	Patrick Badiou
Director of Manufacturing	Lindi Rasmussen
Health & Safety Coordinator	Jason Brown
Production Manager	Robert Bagnell

Review of this ERPP will be performed at least annually, and subject to the following:

1. the company staffing structure changes;
2. there is a change or modification to the propane distribution systems;
3. following any activation of the ERPP; and
4. upon demand from the local Fire Department.

1.4 Distribution and Location of the ERPP

This ERPP has been distributed to internal and external parties listed in Table 2. When updated, any changes to the ERPP must be forwarded to the persons or organizations authorized to have a copy. This ERPP is site specific to the Tank Traders Bradford facility and its location(s) at the facility is included in Table 2. Employees taking on roles in this ERPP acknowledge receipt and understanding of all sections of the ERPP and are aware of its onsite location(s) by signing the Distribution Form.

Table 2: Distributed Copies of the ERPP and their Locations

ERPP Copies	Location/Person	Contact
electronic	BWG Fire and Emergency Services 77 Melbourne Drive Bradford, Ontario	Brent Thomas Fire Chief (905) 775-5366 x 4101 bthomas@townofbwg.com
electronic	Tank Traders Bradford Facility 285 Dissette Street Bradford, Ontario	Robert Bagnell (866) 553-2131 ext. 324 mbagnell@tanktraders.com
electronic	Tank Traders Head Office 54 Rue Principale La Salle, Manitoba	Lindi Rasmussen (866) 553-2131 ext. 160 lasmussen@tanktraders.com

2.0 DEFINITIONS AND ABBREVIATIONS

- **Accidental Release:** Unplanned discharge, emission, explosion, outgassing or other escape of propane.
- **ASME:** American Society of Mechanical Engineers
- **BLEVE:** boiling liquid expanding vapour explosion
- **CANUTEC:** Canadian Transport Emergency Centre of the Department of Transport
- **CPA:** Canadian Propane Association
- **CSA:** Canadian Standards Association
- **Emergency Response Personnel:** All parties described herein under “Roles and Responsibilities” and any other personnel who may be appointed by authorities to participate in emergency response actions.
- **EMS:** emergency medical services
- **ERPP:** Emergency Response and Preparedness Plan
- **LEL:** lower explosive limit
- **LFL:** lower flammable limit
- **LPG:** Liquefied Petroleum Gas
- **Major Release:** Any sustained accidental release characterized by the rapid uncontrolled release of propane (e.g. a line break). These releases are characterized by the formation of fog and loud noises and may pose a threat to public safety. Sources for these releases include, but are not limited to, failed valves, fittings, piping.
- **Minor Release:** May be defined as a slow controlled release of propane (e.g. an improperly closed valve). These releases are characterized by a persistent smell of mercaptan, observation of frost patches forming on equipment, or a “hissing” noise. Finding the source may require the use of a leak detection fluid or gas detector. These releases are not considered to be propane emergencies if mitigated within 24 hours.
- **Muster Area:** Designated assembly point during a propane emergency evacuation.
- **Propane Emergency:** Any emergency involving propane related hazards covered by this ERPP, including fires.
- **RSMP:** Risk and Safety Management Plan, under *Ontario Regulation 211/01*
- **SAC:** Spills Action Centre
- **SDS:** safety data sheet
- **TDG:** Transportation of Dangerous Goods
- **TSSA:** Technical Standards and Safety Authority
- **UFL:** upper flammable limit
- **USWG:** United States Water Gallon, a measure of volume
- **VCE:** Vapour Cloud Explosion

3.0 ROLES AND RESPONSIBILITIES

This ERPP specifies the scope of the participants' activities before and during a propane emergency. Their roles and responsibilities are defined in this section, which details what onsite actions are expected of them. An organization chart has been provided below to facilitate decision making and condenses the information provided by this section.

The following organization chart displays the command structure which is the system designed for the response to a propane emergency at the Tank Traders Bradford facility. The Technical Director and Operations Lead will be under the direction of one or more parties within the external Emergency Services Unified Command Structure.

Figure 1: Incident Command Organization Chart

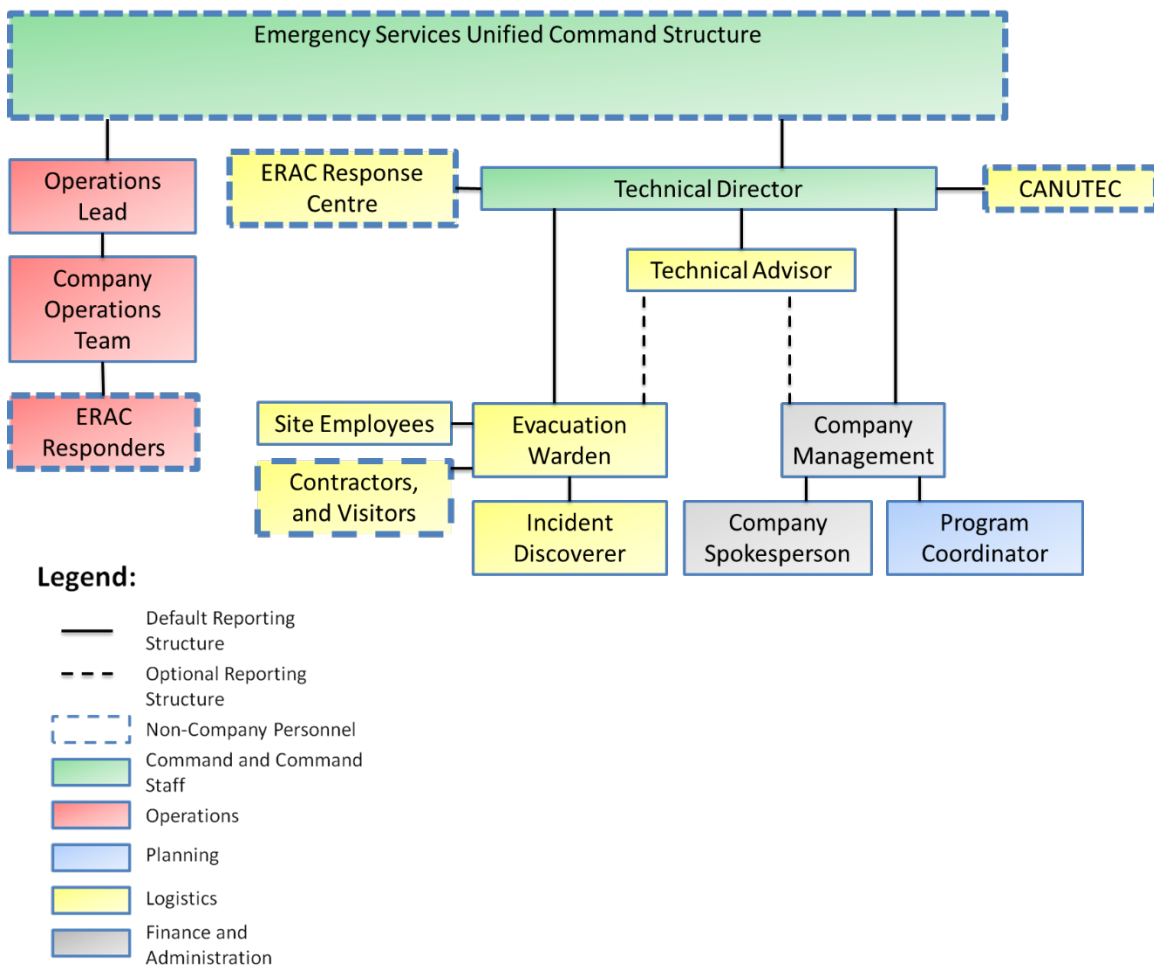


Table 3: Emergency Roles and Their Respective Responsibilities

Position	Preparedness	Response
Emergency Services Unified Command Structure	<ul style="list-style-type: none"> • As required 	<ul style="list-style-type: none"> • As required
Tank Traders Company Spokesperson	<ul style="list-style-type: none"> • Know Tank Traders policies and mandate. • Know Tank Traders products and services. • Complete media training. 	<ul style="list-style-type: none"> • Report to the Company Management. • Act as media spokesperson • Receive public inquiries and concerns and communicate information to the public. • Provide the media and public with details related to the propane emergency. • Issue public statements on behalf of Tank Traders. • Communicate the end of the propane emergency to the public as directed by the Emergency Services Unified Command Structure. • Simplify technical information when addressing the general public.

<p>Program Coordinator</p>	<ul style="list-style-type: none"> • Develop and maintain this ERPP. • Consult with local representatives (internal and external) from various technical backgrounds (fire, municipal emergency authority, CPA) in developing the ERPP. • Be the only authorized person to make changes to the ERPP and ensure that all copies are current. • Ensure all employees and personnel in the ERPP are familiar with the Plan and their expected roles. • Responsible for the distribution and tracking of the ERPP and forwarding any Plan updates to Plan holders as required. • Maintain and retain all records associated with this ERPP. • Verify and update internal and external emergency contacts as necessary. • Verify the inventory of emergency equipment and resources onsite against the list provided in this ERPP. • Inspect the emergency equipment and resources. 	<ul style="list-style-type: none"> • Report to the Company Management as required.
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<p>Technical Director</p>	<ul style="list-style-type: none"> • Have a current copy of this ERPP. • Be competent with this ERPP. • Be capable of mobilization and departure for a propane emergency within 1 hour, if practical, of being notified of such an emergency. 	<ul style="list-style-type: none"> • Report to the Emergency Services Unified Command Structure. • Direct the Technical Advisor. • Be capable of providing a continuous response on a 24-hour day basis. • Travel to the location of the propane emergency if not already at site. • Serve as a liaison between the Emergency Services Unified Command Structure, Technical Advisor and Company Management. • Arrange requests for additional resources with the Emergency Services Unified Command Structure as needed. • Consult with the Emergency Services Unified Command Structure and provide advice regarding risks and appropriate steps to be taken at the emergency site to preserve public safety (i.e. advise on evacuation distances, if necessary). • Ensure that further transportation of LPG from the propane emergency site is done in a safe and legal manner. • Attend regular meetings with the Emergency Services Unified Command Structure and other Directors as scheduled by the Emergency Services Unified Command Structure. • Attend the debriefing meetings.
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<p>Technical Advisor</p>	<ul style="list-style-type: none"> • Have a current copy of this ERPP. • Be competent with this ERPP. • Provide technical support to the Program Coordinator for the selection of emergency equipment. 	<ul style="list-style-type: none"> • Report to the Technical Director. • Follow the instructions of the Technical Director. • Debrief and obtain any information from the person who initially discovered the emergency. • Assure the Emergency Services Unified Command Structure that the company is prepared to provide assistance with the propane emergency. • Assure the Emergency Services Unified Command Structure of their technical expertise in propane and familiarity with company equipment and procedures.
<p>Company Management</p>	<ul style="list-style-type: none"> • Designate the following roles to employees of the company: <ul style="list-style-type: none"> ○ Program Coordinator; ○ Technical Director; ○ Technical Advisor; ○ Operations Lead; ○ Company Operations Team; ○ Company Spokesperson; and ○ Evacuation Warden. • Provide appropriate training to all employees taking on the roles listed above. 	<ul style="list-style-type: none"> • Report to the Technical Advisor. • Approve public statements issued to the public by the Company Spokesperson on behalf of Tank Traders. • Advise the Technical Advisor if capable and requested to do so. • Approve any funds needed for propane emergency operations as requested by the company's Finance Personnel

<p>Evacuation Warden</p>	<ul style="list-style-type: none"> • Have a current copy of this ERPP and know its contents. • Maintain facility sign-in/sign-out sheet. • Know the location of the Muster Areas. • Understand the criteria for Muster Area selection during an emergency. 	<ul style="list-style-type: none"> • Receive notification of a propane emergency from the person discovering it. • Check the wind direction and accordingly select the appropriate Muster Area from the defined locations. • Put on the white helmet and reflective vest and collect the Evacuation Kit. • Issue a call for evacuation, and communicate Muster Area selection to onsite personnel. • Obtain the sign-in/sign-out sheet and employee list. • Proceed to the chosen Muster Area with the Evacuation Kit and designate an individual to call 911. • Verify attendance against the facility sign-in/sign-out sheet and employee list to ensure all personnel have collected in the Muster Area. • Report incident to Company Management and HSE. • Report results of attendance and the evacuation status to the Technical Advisor. • Records key incident milestones.
<p>Employees, Contractors and Visitors</p>	<ul style="list-style-type: none"> • Be familiar with the evacuation areas, and evacuation procedure outlined in this ERPP. 	<ul style="list-style-type: none"> • Receive the call for evacuation from the Evacuation Warden. • Follow the evacuation procedure outlined in this ERPP.
<p>Operations Lead</p>	<ul style="list-style-type: none"> • Know the command structure as presented in this ERPP. • Be competent on the use of all emergency response equipment and emergency response procedures. • Be aware of the locations of emergency equipment onsite. 	<ul style="list-style-type: none"> • Report to the Emergency Services Unified Command Structure. • Act as liaison between Emergency Services Unified Command Structure and the Company Operations Team. • Direct mitigation actions of Company Operations Team as instructed by the Emergency Services Unified Command Structure. • Assist Company Operations Team with mitigation actions. • Request permission from Company Management to obtain additional resources that require additional funding.

Company Operations Team	<ul style="list-style-type: none">• Know the command structure as presented in this ERPP.• Be competent on the use of all emergency response equipment and emergency response procedures.• Be aware of the locations of emergency equipment onsite.	<ul style="list-style-type: none">• Follow instructions of Operations Lead.• Perform mitigation actions (e.g. emergency transfers, fixing releases) as instructed.
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3.1 Emergency Contacts

Lists for internal and external emergency contacts have been compiled and provided in the following two tables:

Table 4: Internal Emergency Contacts at Tank Traders Bradford Facility

ERPP Role	Name	Contact Information
Program Coordinator Technical Director Company Management Company Spokesperson	Lindi Rasmussen	Home Phone:
		Work Phone: (866) 553-2131 x 160
		Cell Phone: [REDACTED]
		Email: lrasmussen@tanktraders.com
Program Coordinator Technical Director Company Management Company Spokesperson	Patrick Badiou	Home Phone:
		Work Phone:
		Cell Phone: [REDACTED]
		Email: pbadiou@tanktraders.com
Program Coordinator	Jason Brown	Home Phone:
		Work Phone: (866) 553-2131 x 161
		Cell Phone:
Program Coordinator Technical Director Technical Advisor Evacuation Warden	Robert Bagnell	Email: jbrown@tanktraders.com
		Home Phone:
		Work Phone: (866) 553-2131 x 324
		Cell Phone: [REDACTED]
Technical Director Technical Advisor Evacuation Warden Operations Lead	David Mika	Email: mbagnell@tanktraders.com
		Home Phone:
		Work Phone: (866) 553-2131 x 323
		Cell Phone: [REDACTED]
Employees, Contractors and Visitors	Employees, Contractors and Visitors	Email: dmika@tanktraders.com
		Home Phone:
		Work Phone:
		Cell Phone:
		Email:

Table 5: External Emergency Contacts

Organization	Description of Resource	Contact Information
Fire, Medical, Police	Emergency Services	9-1-1
TSSA	Regulatory Body - Fuel Safety	1 (877) 682-8772
CANUTEC	Canadian Transport Emergency Centre	(613) 996-6666
Spills Action Centre	Ontario Ministry of the Environment and Climate Change - Spill Reporting	1 (800) 268-6060
Ontario Ministry of Labour	Health & Safety Contact Centre	1 (877) 202-0008
WSIB	Workplace Safety and Insurance Board	1 (800) 387-0750

Regulatory reporting requirements include:

- for all spills or major releases of propane that are sustained for 10 minutes or more, or could pose a danger to public safety, the Spills Action Centre (“SAC”) must be notified; reporting to SAC meets the reporting requirements for both the Ontario Ministry of the Environment and for the Technical Standards and Safety Authority (“TSSA”);
- reporting an emergency involving dangerous goods to the police will satisfy immediate reporting requirements for Transport Canada; however, any accidental release from a cylinder containing a dangerous good which has suffered a catastrophic failure must also be reported to CANUTEC;
- any incident that causes critical injury or death must be reported immediately to the Ministry of Labour; written notice must also be provided within 48 hours; and
- any workplace injury must be reported to the WSIB within 3 days of incidence.

4.0 TECHNICAL INFORMATION

4.1 **Hazard Identification**

Propane is a flammable gas that is stored and handled in compressed liquid form. Propane is not considered a toxic substance and impacts to the environment are limited to the hazards identified in the following subsections.

4.1.1 Compressed Gas

Propane is stored in its liquid form and can expand 270 times its size when converted to the gas phase. The proper shipping name of propane is Liquefied Petroleum Gas (“LPG”) and the Transportation of Dangerous Goods (“TDG”) placard for LPG in large means of containment is illustrated below in Figure 2. The placard shows that LPG is a Class 2 flammable gas with a UN (United Nations) Number of 1075.

Figure 2: TDG Placard for Liquefied Petroleum Gas (LPG)



4.1.2 Flammable

Propane is regarded as a fire hazard since it can flash at temperatures as low as -104°C (-155.2°F), with an ignition source. At ambient conditions, the lower and upper flammable limits (LFL and UFL) of propane are 2.1% and 9.5%, respectively.

4.1.3 Frost Bite

Due to the significant drop in temperature when expanding from liquid to vapour phase, propane can cause frostbite on contact with skin and is capable of causing severe damage on contact with the eyes.

4.1.4 Asphyxiant

In the gas form, propane can act as an asphyxiant by displacing oxygen but otherwise is non-corrosive, non-toxic and non-irritating to the eyes. Propane vapours are also heavier than air and will seek low lying areas.

For additional physical and chemical characteristics of propane, consult the safety data sheet (“SDS”) provided in Appendix A.

Typical hazards at a propane facility may pose a threat to public safety, property and the environment. Such events can occur due to human activities (i.e. operator/driver error) or equipment failure and those addressed by this ERPP have been identified as follows:

- accidental releases of propane; and
- fires.

A reasonable worst case scenario for a propane facility would consist of a fire at a bulk tank leading to a boiling liquid expanding vapour explosion (“BLEVE”). Such an event includes rupture of the pressure vessel, resulting in an explosion with a shockwave that can propel tank fragments.

4.1.5 Vapour Cloud Regime

The environmental emergency that would impact offsite property, and is more likely to occur than a BLEVE to occur would be a liquid propane release between 0.25” and 1” equivalent, leading to a Vapour Cloud Explosion (“VCE”), a jet fire and then possibly a BLEVE. It should be noted that this environmental emergency has been calculated to have a probability of less than 1 in 100,000 years.

A VCE can affect a large area surrounding a propane release. The following addresses the size of a vapour cloud. For the purposes of consequence analysis, the regime of a vapour cloud is considered to be the duration and dimensions of a vapour cloud. Potential for ignition of the vapour cloud in this analysis is considered to be within the region of the vapour cloud that has a concentration greater than or equal to half of the lower explosive limit (“LEL”) of propane, approximately 1.05% by volume. A conservative estimate of the possible flash fire region can be considered using the same half LEL concentration.

The regime of a vapour cloud release is controlled by several factors. The most important factors are:

- leak size;
- initial bulk tank contents;
- terrain roughness; and
- weather conditions.

The difference between vapour cloud duration and dimensions can be large depending on the above factors. Examples of variations in the regime are described below were calculated using EFFECTS software.

The calculated vapour cloud dimensions for an initially 55% full bulk tank from a 0.25” diameter leak are approximately 5 m in length (downwind distance from release point) by 2 m in width (crosswind) distance from release point). Increasing the size of the leak to 3” will increase the dimensions to approximately 490 m in length and 320 m in width.

The calculated propane release duration time for an initially 55% full bulk tank from a 0.25” diameter leak is approximately 66 hours under winter conditions. Increasing the initial fill percentage to 85% with the same 0.25” diameter leak will increase the release duration to approximately 96 hours. Increasing the size of the leak to 3” will reduce the release time to approximately 30 min from an initially 55% full tank and under winter conditions.

The vapour cloud size dimensions are the steady state dimensions that are reached after approximately one to five minutes, depending on the regime of the cloud. Steady state conditions are reached when the dispersion of the cloud is in equilibrium with the amount of propane flowing through the leak. Because the amount of propane flowing through the leak is only marginally affected by the initial percentage fill of the bulk tank, the steady state dimensions of the vapour cloud are not considered to be affected by the contents of the bulk tank. The duration is the only factor that is considerably affected by the contents of the bulk tank.

The terrain roughness can be described by roughness factors of “R1”, “R2”, and “R3”. Open areas correspond to a relatively low degree of surface roughness, characterized as a factor of “R1”. Areas consisting of brush and shrubs correspond to a relatively moderate degree of surface roughness, characterized as a factor of “R2”. Larger treed areas or buildings correspond to a relatively high degree of surface roughness, characterized as a factor of “R3”. The difference between a roughness factor of R1 and R3 can change the vapour cloud dimensions of a 2” diameter leak from 190 m in length and 43 m in width, to 108 m in length and 39 m in width. An increase in roughness increases the dispersion of the vapour cloud, decreasing its overall dimensions.

Two weather conditions were considered to affect the dimensions of a vapour cloud during a release; the temperature and wind conditions. An increase in temperature will increase dispersion, decreasing the size of the vapour cloud; however, this effect is minimal. An increase in wind will increase dispersion and has a much greater effect of decreasing the size of the vapour cloud. Temperature conditions are described in degrees Celsius and wind conditions are described using Pasquill atmospheric stability classes. The “Pasquill Atmospheric Stability Class” system uses letters to denote the stability of the atmosphere. The letters “A” through “F” are used with “A” being very unstable and “F” being stable. Calculated vapour cloud dimensions between weather conditions of atmospheric stability of F and a temperature of -10°C, and atmospheric stability of D and a temperature of 23°C can range from 490 m in length and 320 m in width to 300 m in length and 75 m in width.

Table 6 is given as a reference tool to determine the duration, length, and width of a cloud. Variables considered include:

- leak sizes of 0.25”, 1”, 2” and 3”;
- initial bulk tank content percentages of 55%, 70% and 85%;
- terrain roughness factors of R1, R2, and R3;
- winter conditions of atmospheric stability of F and a temperature of -10°C, and summer conditions of atmospheric stability of D and a temperature of 23°C

It should be noted that vapour cloud dimensions are independent of the initial fill percentage.

Appendix C gives a simplified version of this table using the most conservative terrain roughness factor which is suitable for quick reference.

Table 6: Full Vapour Cloud Regime Chart – 60,000 USWG Bulk Storage Tank

		Leak Size (Approximate Diameter)								
		0.25"		1"		2"		3"		
		Weather Condition								
Initial Bulk Tank Contents (%fill)		Winter (-10°C)	Summer (23°C)	Winter (-10°C)	Summer (23°C)	Winter (-10°C)	Summer (23°C)	Winter (-10°C)	Summer (23°C)	
55%	Duration (hrs)	66.3	66.0	4.3	4.2	1.2	1.2	0.5	0.5	
	R1	Length	5.6	15.3	105.4	86.5	281.8	187.9	489.4	296.4
		Width	2.0	1.9	56.0	16.7	172.6	43.0	315.2	75.0
	R2	Length	10.4	12.1	78.4	63.0	202.1	137.7	348.6	217.3
		Width	4.6	2.0	53.0	15.4	148.6	38.0	268.0	66.0
	R3	Length	8.6	8.1	57.3	48.4	150.7	107.8	264.6	171.7
		Width	5.6	2.4	51.0	15.7	138.0	39.0	241.0	66.0
70%	Duration (hrs)	78.0	72.0	5.0	4.6	1.3	1.3	0.6	0.5	
	R1	Length	5.6	15.3	105.4	86.5	281.8	187.9	489.4	296.4
		Width	2.0	1.9	56.0	16.7	172.6	43.0	315.2	75.0
	R2	Length	10.4	12.1	78.4	63.0	202.1	137.7	348.6	217.3
		Width	4.6	2.0	53.0	15.4	148.6	38.0	268.0	66.0
	R3	Length	8.6	8.1	57.3	48.4	150.7	107.8	264.6	171.7
		Width	5.6	2.4	51.0	15.7	138.0	39.0	241.0	66.0
85%	Duration (hrs)	96.3	78.2	6.0	5.0	1.8	1.2	0.6	0.6	
	R1	Length	5.6	15.3	105.4	86.5	281.8	187.9	489.4	296.4
		Width	2.0	1.9	56.0	16.7	172.6	43.0	315.2	75.0
	R2	Length	10.4	12.1	78.4	63.0	202.1	137.7	348.6	217.3
		Width	4.6	2.0	53.0	15.4	148.6	38.0	268.0	66.0
	R3	Length	8.6	8.1	57.3	48.4	150.7	107.8	264.6	171.7
		Width	5.6	2.4	51.0	15.7	138.0	39.0	241.0	66.0

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How to use this table:

There are four variables to select on this table: leak size, weather condition, initial bulk tank contents, and terrain roughness. These variables will determine the calculated leak duration, vapour cloud length, and vapour cloud width. An example is shown for the use of this table with the factors of a 1", winter release, initially 70% full bulk tank, and a terrain roughness of 2.

5.0 FACILITY INFORMATION

The Tank Traders Bradford facility is located at 285 Dissette Street in Bradford, Ontario, and has a total fixed storage capacity of 62,000 USWG of propane which is used for cylinder reclaiming operations. The maximum expected quantity of propane at the Tank Traders Bradford facility at any time during a calendar year is 467,040 USWG. The largest propane bulk tank at the facility has a storage capacity of 60,000 USWG.

A site plan has been included in Appendix B. This document includes the tank and storage locations as well as locations of access and egress routes to the facility, emergency equipment, emergency shutdown buttons, fire routes and onsite fire suppression equipment. Also included in Appendix B is an overhead view of the facility. This diagram illustrates the primary and secondary muster areas.

5.1 Emergency Shutdown Equipment

In the event of an emergency, emergency shutoff buttons can be used to stop the flow of propane. Power can also be isolated from the breaker panel located onsite. The location of the emergency stops and breaker panel at the facility are shown in the site plan provided in Appendix B.

5.2 Emergency Equipment and Resources

In the event of a propane emergency, an evacuation of the premises will be initiated, and the Evacuation Warden shall bring the “Evacuation Kit” to the selected Muster Area. This Evacuation Kit shall contain:

- up to date employee list with contact numbers;
- copies of this ERPP;
- white-hard hat;
- reflective vest; and
- charged cellular phone.

5.3 Communication System

Tank Traders has developed two primary communication systems for use in response to a propane emergency. The first is a verbal onsite notification system that sends the call for evacuation from the facility. The second system, consisting of cell phones, is used by emergency response personnel to maintain contact with each other while dealing with the emergency.

5.3.1 Evacuation Notification

The onsite notification system is comprised of an air horn activated by the Evacuation Warden. When activated, the auditory signal indicates an evacuation order to all onsite personnel.

5.3.2 Communication During Emergency

For communications with other required company personnel who are offsite at the time of the propane emergency, telephone landlines or cellular phones may be used for establishing emergency communication. The cell phone numbers, home phone numbers, and email addresses of necessary company personnel are provided in Section 3.1.

5.4 Muster Areas

Two muster areas where employees will evacuate in event of an emergency have been identified in this plan. Unless circumstances dictate otherwise, personnel should evacuate to the primary muster area. It is primarily the responsibility of the Evacuation Warden to decide which muster area is appropriate. The locations of the muster areas are as follows:

- primary muster area: southwest corner of 285 Dissette Street property; and
- secondary muster area: intersection of Dissette Street and Industrial Road.

Muster areas are also identified on the overhead view of the facility which can be found in Appendix B.

6.0 EMERGENCY PREPAREDNESS

6.1 Propane Emergency Prevention

Propane emergency prevention and overall safety is primarily achieved through facility design and construction, and compliance with applicable standards. The use and handling of propane, and procedures followed for the receipt of propane at the facility are according to the requirements of Canadian Standards Association (“CSA”) B149.2-20 *Propane storage and handling code*, as adopted by TSSA on February 8, 2021. In addition, the bulk propane tank at the Tank Traders Bradford facility is designed and built according to the American Society of Mechanical Engineers Boiler and Pressure Vessel Code: Section VIII, Division 1.

Tank Traders also protects against propane emergencies or their escalation through the following measures:

- Preventative maintenance checks and programs;
- Operating procedures and maintenance of facility documentation;
- Selection of the proper mode of transport and transportation equipment suitable for the tasks or loads;
- Developing, maintaining and implementing Tank Traders Health and Safety policies
- Operator competence and training; and
- Processes and procedures to ensure that changes in design, service or staff are managed to minimize impacts on operations.

The elements above are described and documented in The Employee Policy and Procedure Manual.

6.2 Training

Employees at the Tank Traders Bradford facility required to handle propane have received accredited training through the Canadian Propane Association (“CPA”).

7.0 PUBLIC AWARENESS AND EDUCATION

The properties that may be affected by an offsite emergency are identified in Table 7 below:

Table 7: Affected Public Contact Information

Name of Resident / Company	Address	Telephone Number
Utilicon Engineered Precast Structures	285 Dissette Street	(905) 778-8400
Bradford & District Produce Ltd	355 Dissette Street	(905) 775-9633
Learning House Inc.	389 Dissette Street	(905) 775-0707
Murat Home Renovation	302 Britannia Avenue	(647) 223-5380
Residential	248 – 350 Britannia Avenue	N/A
Residential	160 Lee Avenue	N/A
Residential	161 Lee Avenue	N/A
Residential	168 Lee Avenue	N/A
Residential	175 Lee Avenue	N/A
Residential	177 Lee Avenue	N/A
Residential	180 Lee Avenue	N/A
Residential	182 Lee Avenue	N/A

Propane hazards have been communicated to the BWG Fire and Emergency Services. Additional information is available to the public in an SDS for propane attached in Appendix A, as well as through the publication of this ERPP on the TSSA website at:

<https://www.tssa.org/Modules/document/document.aspx?param=6AMOOHnLoaJj51A5Hs1Q9MSQ1AeQuAleQuAl>

As a member of the CPA, Tank Traders is knowledgeable of the public safety campaign undertaken by the association. The following website provides information on propane safety:

<http://www.propane.ca/en/about-propane/safety>

In the event of an emergency, the designated Company Spokesperson will facilitate initial and subsequent communications with the public and the media under the direction of the Emergency Services Unified Command Structure.

Though the publication of this ERPP, community members most likely to be affected by an emergency have been provided with important contact information that includes key personnel at Tank Traders Bradford and government/municipal organizations.

Notification of the end of an emergency to all those affected is the responsibility of the Company Spokesperson. The Company Spokesperson will proceed with announcing the end of an emergency when indicated to do so by the Emergency Services Unified Command Structure. Communication of such information is to be done by means of telephone or media.

8.0 EMERGENCY RESPONSE PROCEDURES

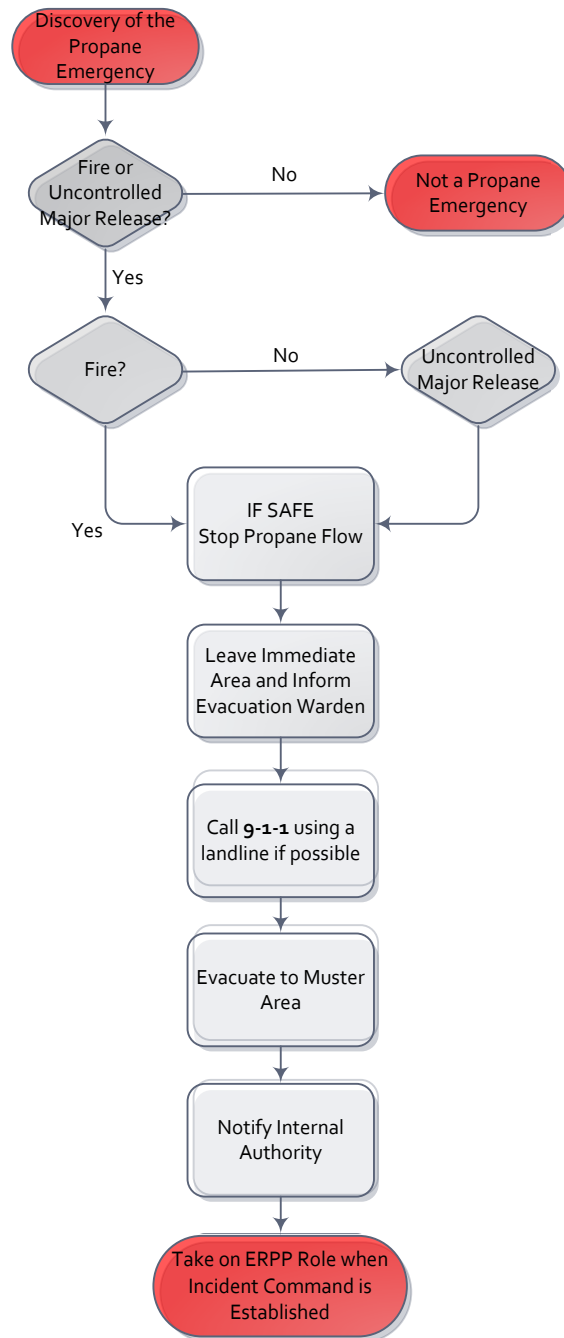
8.1 Activation of the ERPP and Notification of the Emergency

In the event of a propane emergency, 911 will have been called unless there is a minor release. The ERPP should be activated by an employee at the Tank Traders Bradford facility. This employee is designated by the Evacuation Warden to activate the ERPP. Upon activation of the plan and after successfully evacuating, the designated employee should ensure that the proper authorities have been promptly notified. Contact information has been provided in Table 5. Examples of regulatory reporting requirements have also been provided in Section 3.1.

8.2 Onsite Activation and Notification Procedures

An activation and notification flowchart has been provided below in Figure 3. The flow chart shows steps to take before and after activating the emergency plans. The flow chart summarizes actions to take from the beginning of a propane emergency until the Incident Command Structure is established.

Figure 3: Activation and Notification Flow Chart



The following is a generalized outline of activation, notification and emergency procedures to follow during a propane emergency.

Step 1 - Identify the situation

- For a frost bite, stop any activity being performed and seek first aid immediately.
- For a propane emergency, such as a fire or an accidental release, follow the steps below:

Step 2 - **IF** it is possible to stop flow of product while evacuating

- Stop product flow **IF SAFE** to do so by either:
 - Activating one of the emergency shut-off buttons;
 - Pressing the emergency stop button on the query system;
 - Shutting off the pump by cutting the power supply;
 - Relieving the pressure in the pneumatic system;
- Do **NOT** attempt to put out even a small propane-fed fire unless you are able to cut off the supply of gas to the flame.

Step 3 - Leave the immediate area

- Inform Evacuation Warden of location of fire or release
- Initiate the Evacuation Procedure
- Isolate area for at least 100 m in all directions
- Restrict access to isolated area

Step 4 - Call 9-1-1 using a landline if possible to speed up the dispatch of emergency resources

- Have emergency information ready:
 - Nature of emergency (fire or release);
 - Facility location;
 - Building name and address;
 - Call-back number;
 - Location of fire or release;
 - Duration of the fire or release; and
 - Any other relevant information

Step 5 - Proceed to designated Muster Area

- IF in doubt of Muster Area location, look for the Evacuation Warden identifiable through the “white” hat and reflective vest.
- DO NOT start any vehicle - Walk, DO NOT run to Muster Area

Step 6 - Notify Internal Authority

- Call 24-hour number: **1 (888) 226-8832**
- Notify Technical Director/Advisor and/or Company Management.

Step 7 - Take on ERPP role when the Incident Command Structure is established

8.3 Onsite Evacuation Procedure

Evacuation to a safe area is necessary to protect employees in case of an emergency. Tank Traders has developed a system to communicate the requirement for evacuation to all employees onsite. Employees are to evacuate to one of two muster areas, where they will be counted and given direction on how to proceed. The following instructions describe the evacuation procedures set out by Tank Traders for employees, contractors and visitors:

1. Obey the call for evacuation;
2. Follow instructions of the Evacuation Warden;
3. Proceed to the designated Muster Area. If in doubt of Muster Area location, look for the Evacuation Warden identifiable through the “white” hat and reflective vest then proceed to their location.
4. During evacuation personnel shall:
 - a. NOT stop for valuables;
 - b. shut off electrical appliances and fuel-fired equipment;
 - c. leave lights on;
 - d. close doors and windows;
 - e. WALK, never run while evacuating;
 - f. evacuate via the shortest and safest route;
 - g. remain in the Muster Area until instructed otherwise by the Evacuation Warden;
 - h. assist the Evacuation Warden with the head count;
 - i. give any information about the propane emergency or about persons who might still be in the facility to the Evacuation Warden or Emergency Services Unified Command Structure; and
 - j. NOT re-enter the facility for any reason until told to do so by the Emergency Services Unified Command Structure or Evacuation Warden.

8.4 Offsite Evacuation Procedure

Members of the public that may be affected by a propane emergency are advised to wait for further instruction from municipal authorities and the Emergency Services Unified Command Structure.

9.0 RECOVERY

After a propane emergency, the following recovery procedure is to be followed:

- Adequately ventilate all areas that may have accumulated any gas to safe levels of propane concentration in air of less than the lower flammable limit (LFL) of propane, 2.1%.
- Dispose of debris.
- Although propane is not considered to be an environmental hazard, spills and leaks of other hydrocarbon fuels stored at the Tank Traders Bradford facility must be cleaned up after an emergency.

9.1 Compensation

CPA member and non-member parties who participated in response to the Tank Traders Bradford propane emergency shall be compensated appropriately.

10.0 APPENDICES

Emergency Response and Preparedness Plan (ERPP)
Vomar Industries Inc (o/a Tank Traders)
Bradford, Ontario

Appendix A

Propane SDS

Section 1: IDENTIFICATION

Product Name: Propane

Synonyms: Propane HD-5; Propane Odorized; Propane Non-Odorized.

Product Use: Industrial applications.

Restrictions on Use: Not available.

Manufacturer/Supplier: Plains Midstream Canada ULC, and Affiliates
Suite 1400, 607 – 8th Avenue SW
Calgary, Alberta
T2P 0A7

Phone Number: 1-866-875-2554

Emergency Phone: USA - CHEMTREC 1-800-424-9300 / CANADA - CANUTEC 1-888-CAN-UTEC (226-8832), 613-996-6666 or *666 on a cellular phone

Date of Preparation of SDS: April 11, 2016

Section 2: HAZARD(S) IDENTIFICATION

GHS INFORMATION

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

LABEL ELEMENTS

Hazard

Pictogram(s):



Signal Word: Danger

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.

This material is considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200). This material is considered hazardous by the Hazardous Products Regulations.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Ingredient(s)	Common name / Synonyms	CAS No.	% vol./vol.
Propane	Not available.	74-98-6	90 - 100
Ethane	Not available.	74-84-0	1 - 5
1-Propene	Propylene	115-07-1	1 - 10
Butane	Not available.	106-97-8	0.25 - 2.5
Methane	Not available.	74-82-8	0 - 0.5

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. May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

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 immediately (show the label or SDS where possible).

Note to Physicians: Symptoms may not appear immediately.

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. 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 leak 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 EXTINGUCTION

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. 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.

Section 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures: As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions. Keep unauthorized personnel away. Stay upwind. Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks). Keep out of low areas. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). All equipment used when handling the product must be grounded.

Personal Precautions: Do not touch or walk through spilled material. Use personal protection recommended in Section 8.

Environmental Precautions: Not normally required.

Methods for Containment: Stop leak if you can do it without risk. If possible, turn leaking containers so that gas escapes rather than liquid. Use water spray

to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material. Do not direct water at spill or source of leak.

Methods for Clean-Up: Prevent spreading of vapors through sewers, ventilation systems and confined areas. Isolate area until gas has dispersed. CAUTION: When in contact with refrigerated/cryogenic liquids, many materials become brittle and are likely to break without warning.

Other Information: See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Handling:

Keep away from heat, sparks, open flames, and hot surfaces. – No smoking. Pressurized container: Do not pierce or burn, even after use. See Section 8 for information on Personal Protective Equipment.

Storage:

Store in a well-ventilated place. Protect from sunlight. Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Component

Propane [CAS No. 74-98-6]

ACGIH: Asphyxia

OSHA: 1000 ppm (TWA), 1800 mg/m³ (TWA);

Ethane [CAS No. 74-84-0]

ACGIH: Asphyxia

OSHA: No PEL established.

Propylene [CAS No. 115-07-1]

ACGIH: 500 ppm (TWA); A4 (2005)

OSHA: No PEL established.

Butane [CAS No. 106-97-8]

ACGIH: 1000 ppm (TWA); (2012)

OSHA: 800 ppm (TWA) [Vacated];

Methane [CAS No. 74-82-8]

ACGIH: Asphyxia

OSHA: No PEL established.

PEL: Permissible Exposure Limit

TWA: Time-Weighted Average

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)



- Eye/Face Protection:** Safety glasses are required. Use equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3-92 and OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.
- Hand Protection:** Wear protective gloves. Wear cold insulating gloves. Consult manufacturer specifications for further information.
- 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.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Liquefied gas.
Colour:	Colourless.
Odour:	Odourless, unless odourized with ethyl mercaptan (skunky odour).
Odour Threshold:	Not available.
Physical State:	Gas.
pH:	Not available.
Melting Point / Freezing Point:	-185.6 °C (-302 °F)
Initial Boiling Point:	-42.2 °C (-44 °F)
Boiling Point:	-42 °C (-43.6 °F)
Flash Point:	-104.4 °C (-155.9 °F) (Closed Cup)
Evaporation Rate:	Not available.
Flammability (solid, gas):	Extremely flammable gas.
Lower Flammability Limit:	2.1 %
Upper Flammability Limit:	9.5 %



SAFETY DATA SHEET

Propane

Date of Preparation: April 11, 2016

Vapor Pressure: 192 psig at 37.8 °C (100 °F)

Vapor Density: 1.52 to 1.6 (Air = 1)

Relative Density: 0.51 to 0.59 (Water = 1)

Solubilities: Insoluble in water.

Partition Coefficient: n-Octanol/Water: Not available.

Auto-ignition Temperature: 449.9 °C (841.82 °F)

Decomposition Temperature: Not available.

Viscosity: Not available.

Percent Volatile, wt. %: Not available.

VOC content, wt. %: Not available.

Density: 0.5035 g/cm³

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: Strong acids. Strong bases. Oxidizers. Oxides of nitrogen. Chlorine. Halogens.

Hazardous Decomposition Products: Not available.

Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE

Product Toxicity

Oral: Not available.

Dermal: Not available.

Inhalation: Not available.

Component Toxicity

Component	CAS No.	LD ₅₀ oral	LD ₅₀ dermal	LC ₅₀
Propane	74-98-6	Not available.	Not available.	Not available.
Ethane	74-84-0	Not available.	Not available.	Not available.
Propylene	115-07-1	Not available.	Not available.	86000 mg/m ³ (rat); 4H
Butane	106-97-8	Not available.	Not available.	658000 mg/m ³ (rat); 4H



SAFETY DATA SHEET

Propane

Date of Preparation: April 11, 2016

Methane 74-82-8 Not available. Not available. Not available.

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

Target Organs: Skin. Eyes. Respiratory system. Blood. Cardiovascular system.
Liver. Kidneys. Nervous system.

Symptoms (including delayed and immediate effects)

Inhalation: May displace oxygen and cause rapid suffocation. May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

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)

Target Organs: Skin. Eyes. Respiratory system. Blood. Cardiovascular system. Liver. Kidneys. Nervous system.

Chronic Effects: Not available.

Carcinogenicity: Product is not classified as a carcinogen. See Component Carcinogenicity table below for information on individual components.

Component Carcinogenicity

Component	ACGIH	IARC	NTP	OSHA	Prop 65
Propylene	A4	Group 3	Not listed.	Not listed.	Not listed.

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.

Section 14: TRANSPORT INFORMATION

U.S. Department of Transportation (DOT)

Proper Shipping Name: UN1075, PETROLEUM GASES, LIQUEFIED, 2.1
Class: 2.1
UN Number: UN1075
Packing Group: Not applicable.
Label Code:



Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name: UN1075, PETROLEUM GASES, LIQUEFIED, 2.1
Class: 2.1
UN Number: UN1075
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.



SAFETY DATA SHEET

Propane
Date of Preparation: April 11, 2016

Federal Regulations

United States

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

SARA Title III

Component	Section 302 (EHS) TPQ (lbs.)	Section 304 EHS RQ (lbs.)	CERCLA RQ (lbs.)	Section 313	RCRA CODE	CAA 112(r) TQ (lbs.)
Propane	Not listed.	Not listed.	Not listed.	Not listed.	Not listed.	10000
Ethane	Not listed.	Not listed.	Not listed.	Not listed.	Not listed.	10000
Propylene	Not listed.	Not listed.	Not listed.	313	Not listed.	10000
Butane	Not listed.	Not listed.	Not listed.	Not listed.	Not listed.	10000
Methane	Not listed.	Not listed.	Not listed.	Not listed.	Not listed.	10000

State Regulations

Massachusetts

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

Component	CAS No.	RTK List
Propane	74-98-6	Listed.
Ethane	74-84-0	Listed.
Propylene	115-07-1	Listed.
Butane	106-97-8	Listed.
Methane	74-82-8	Listed.

New Jersey

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

Component	CAS No.	RTK List
Propane	74-98-6	SHHS
Ethane	74-84-0	SHHS
Propylene	115-07-1	SHHS
Butane	106-97-8	SHHS
Methane	74-82-8	SHHS

Note: SHHS = Special Health Hazard Substance

Pennsylvania

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

Component	CAS No.	RTK List
Propane	74-98-6	Listed.
Ethane	74-84-0	Listed.
Propylene	115-07-1	E
Butane	106-97-8	Listed.
Methane	74-82-8	Listed.

Note: E = Environmental Hazard



SAFETY DATA SHEET

Propane
Date of Preparation: April 11, 2016

California

California Prop 65: This product does not contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

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 their own particular use.

Date of Preparation of SDS: April 11, 2016

Version: 2.1

GHS SDS Prepared by: Deerfoot Consulting Inc.

Phone: (403) 720-3700

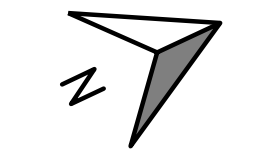
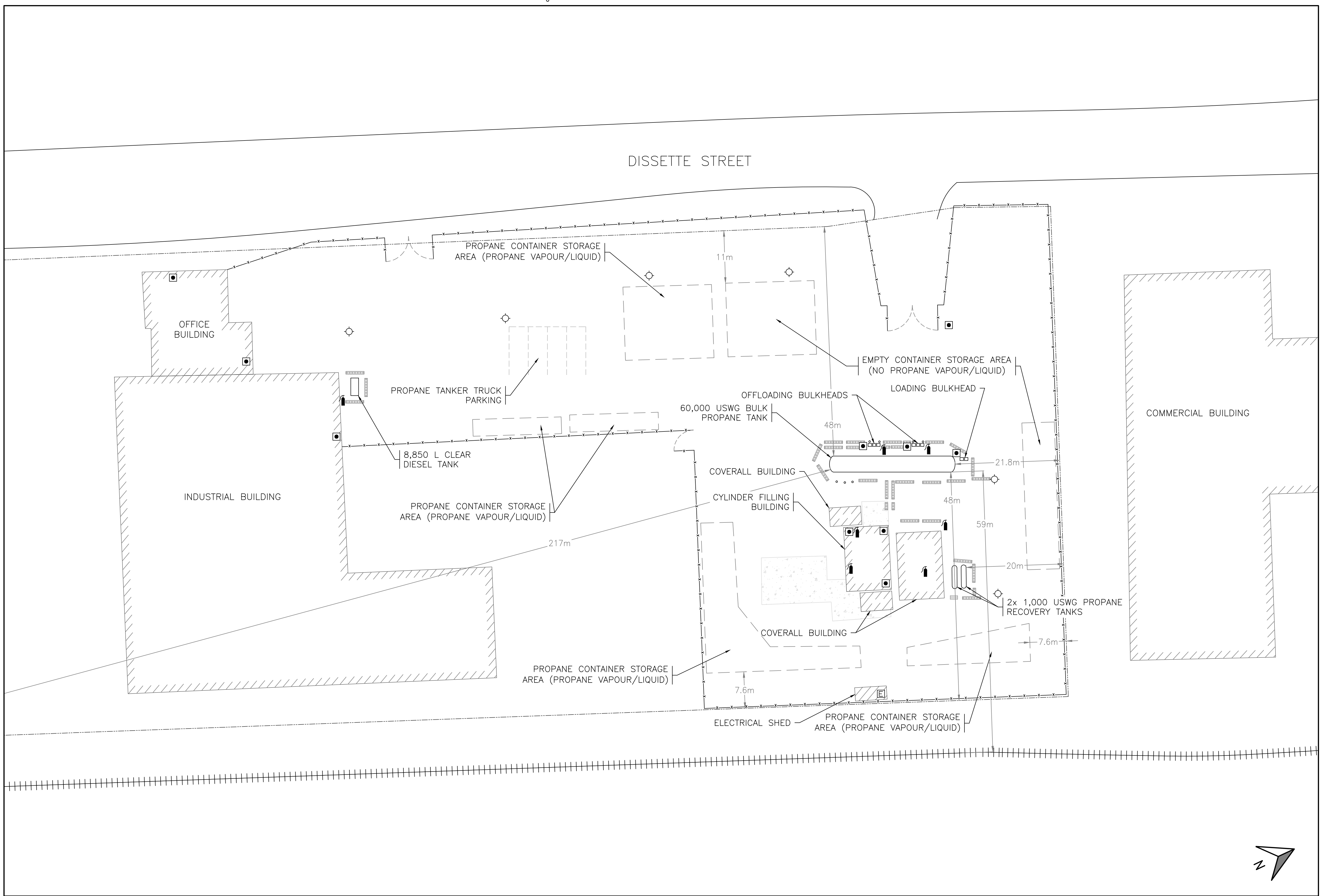
Emergency Response and Preparedness Plan (ERPP)
Vomar Industries Inc (o/a Tank Traders)
Bradford, Ontario

Appendix B

Site Plan

	BUILDING/STRUCTURE
	PROPANE TRANSFER BULKHEAD
	CONCRETE BLOCK
	CONCRETE BOLLARD
	CONCRETE PAD
	EDGE OF PAVEMENT
	ELECTRICAL DISCONNECT
	EMERGENCY SHUTDOWN BUTTON
	FENCE
	FIRE EXTINGUISHER
	JERSEY BARRIER
	LIGHT STANDARD
	PROPANE CONTAINER STORAGE AREA
	PROPERTY BOUNDARY
	RAILWAY TRACK
	SWING GATE
	PROPANE TANKER TRUCK PARKING

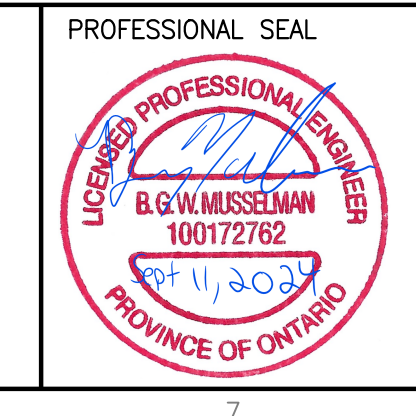
LEGEND



SITE PLAN

DATE	No.	REVISION	DATE	No.	REVISION
SEP 05/24	0	ISSUED FOR RSMP			

NOTE
 THIS DRAWING IS DIAGRAMMATIC IN NATURE AND INTENDED TO SHOW ONLY SITE FEATURES ASSOCIATED WITH PROPANE SAFETY. CONTRACTORS TO VERIFY ALL DIMENSIONS.
 NOT FOR CONSTRUCTION



PROJECT MGR: **R. WILSON**
 DESIGNED: **B. MUSELMAN**
 DRAWN: **B. MUSELMAN**
 CHECKED: **R. WILSON**
 APPROVED: **B. MUSELMAN**
 SHEET SIZE: **ARCH D**
 SCALE: **1:400**
 UNITS: **METRIC**

PROJECT **LEVEL 2 RISK AND SAFETY MANAGEMENT PLAN**
VOMAR INDUSTRIES INC.
 BRADFORD, ONTARIO

DRAWING TITLE **BULK FILLING PLANT: SITE PLAN**
 DRAWING NUMBER **23088-SK-001**
 SHEET NUMBER **1 OF 1**



Emergency Response and Preparedness Plan (ERPP)
Vomar Industries Inc (o/a Tank Traders)
Bradford, Ontario

Muster Areas



Emergency Response and Preparedness Plan (ERPP)
Vomar Industries Inc (o/a Tank Traders)
Bradford, Ontario

Appendix C

Quick Reference Chart for Vapour Cloud Regime

		Leak Size (Approximate Diameter)							
		0.25"		1"		2"		3"	
		Weather Condition							
		Winter (-10°C)	Summer (23°C)	Winter (-10°C)	Summer (23°C)	Winter (-10°C)	Summer (23°C)	Winter (-10°C)	Summer (23°C)
Duration (hrs)	55% Initial Fill	66.3	66.0	4.3	4.2	1.2	1.2	0.5	0.5
	70% Initial Fill	78.0	72.0	5.0	4.6	1.3	1.3	0.6	0.5
	85% Initial Fill	96.3	78.2	6.0	5.0	1.8	1.2	0.6	0.6
Vapour Cloud Dimensions (m)	Length	5.6	15.3	105.4	86.5	281.8	187.9	489.4	296.4
	Width	2.0	1.9	56.0	16.7	172.6	43.0	315.2	75.0

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Instructions for how to use this table: There are three variables to select on this table: leak size, weather condition, and initial bulk tank contents. These variables will determine the calculated leak duration, vapour cloud length, and vapour cloud width. An example is shown for the use of this table with the factors of a 1", winter release, and initially 70% full bulk tank:

		Leak Size (Approximate Diameter)							
		0.25"		1"		2"		3"	
		Weather Condition							
		Winter (-10°C)	Summer (23°C)	Winter (-10°C)	Summer (23°C)	Winter (-10°C)	Summer (23°C)	Winter (-10°C)	Summer (23°C)
Duration (hrs)	55% Initial Fill	66.3	66.0	4.3	4.2	1.2	1.2	0.5	0.5
	70% Initial Fill	78.0	72.0	5.0	4.6	1.3	1.3	0.6	0.5
	85% Initial Fill	96.3	78.2	6.0	5.0	1.8	1.2	0.6	0.6
Vapour Cloud Dimensions (m)	Length	5.6	15.3	105.4	86.5	281.8	187.9	489.4	296.4
	Width	2.0	1.9	56.0	16.7	172.6	43.0	315.2	75.0

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