



**QUANTEM**  
BULK LIQUID STORAGE & HANDLING

# Melbourne Terminal

## 2022 Safety Case

### Summary





# CONTENTS

INTRODUCTION.....	3
What is a Major Hazard Facility? .....	3
What are Scheduled Materials?.....	3
What is a Safety Case? .....	3
What is a Major Incident? .....	3
FACILITY DESCRIPTION .....	4
SAFETY CASE SUMMARY .....	5
Safety Assessment.....	5
Scheduled Materials.....	5
Potential Major Incidents.....	6
Control Measures.....	6
Safety Management System .....	7
Emergency Response .....	7
Community Response .....	7

# INTRODUCTION

This Safety Case Summary provides the community with information about the safety at the Melbourne Terminal. It includes a summary of the potential major incidents that could occur, including the hazards that could cause those incidents and the control measures that are in place to prevent or minimise the consequences of such incidents, should they occur.

## What is a Major Hazard Facility?

Major hazard facilities (MHFs) are industrial sites which store, handle or process large quantities of chemicals and dangerous goods, including petroleum products. This includes those facilities where scheduled materials are present or likely to be present in a quantity exceeding their threshold amounts specified within the Schedule.

The Melbourne Terminal has been registered as a Major Hazard Facility since 2002.

## What are Scheduled Materials?

The OH&S Regulations define what materials must be considered in the scope of the Safety Case. The scheduled materials at Melbourne are discussed in the 'Scheduled Materials' section of this document.

## What is a Safety Case?

Major Hazard Facilities are required to demonstrate their operational safety through a Safety Case developed specifically for their unique operations and situation.

The Safety Case sets out the adequacy of the site's safety management system by specifying

prevention measures, as well as strategies for reducing the effects of a major incident if one does occur.

The Safety Case must demonstrate:

- All potential major incidents are identified
- All hazard or threats that could result in a major incident are identified
- A comprehensive and systematic safety assessment has been conducted
- Control measures have been identified to eliminate or reduce the risk so far as reasonably practicable
- An emergency plan is in place to control and minimise any potential major incident
- A robust safety management system is in place

The safety case is conducted with involvement and consultation with employees and safety representatives.

## What is a Major Incident?

A major incident is an uncontrolled incident, including an emission, loss of containment, escape, fire, explosion, or release of energy that involves Schedule 14 materials and poses a serious and immediate risk to health and safety.



## FACILITY DESCRIPTION

Quantem provides bulk liquid storage solutions at strategic locations throughout Australia and New Zealand. We offer storage and handling services for a range of products including chemicals, petroleum fuels, vegetable and edible oils, base oils and bitumen.

Terminals Pty Ltd, trading as Quantem, operate the Melbourne Major Hazard Facility. The Major Hazard Facility covers 54-62 and 70-78 Mackenzie Road as highlighted in the picture below.

We do not use the products or manufacture anything from them. However, many of the products we store are used in the production of commonly used goods such as paints, plastics, lubricating oils, detergents, pharmaceuticals and building products.

Our customers include major oil and chemicals companies, as well as independent chemical and commodity traders. We are a trusted partner in our customers' supply chains, connecting our customers to their domestic and international markets.

The Melbourne facility is a chemical storage and transfer facility and commenced operations in the 1950's.

The site receives product from ships berthing at the Maribyrnong No.1 wharf via aboveground pipelines from the unloading points on the berth to the Quantem site.

Imported products are then loaded to truck for deliveries to local and regional markets.

The site also receives product by road transport for storage and later export.

Our focus is to deliver safe, reliable and efficient storage and handling services for our customers. We achieve this through our commitment towards engineering excellence, consistent operating procedures and strong operational leadership.

Quantem owns and operates the facility however the product is owned by its customers who also arrange all transport.

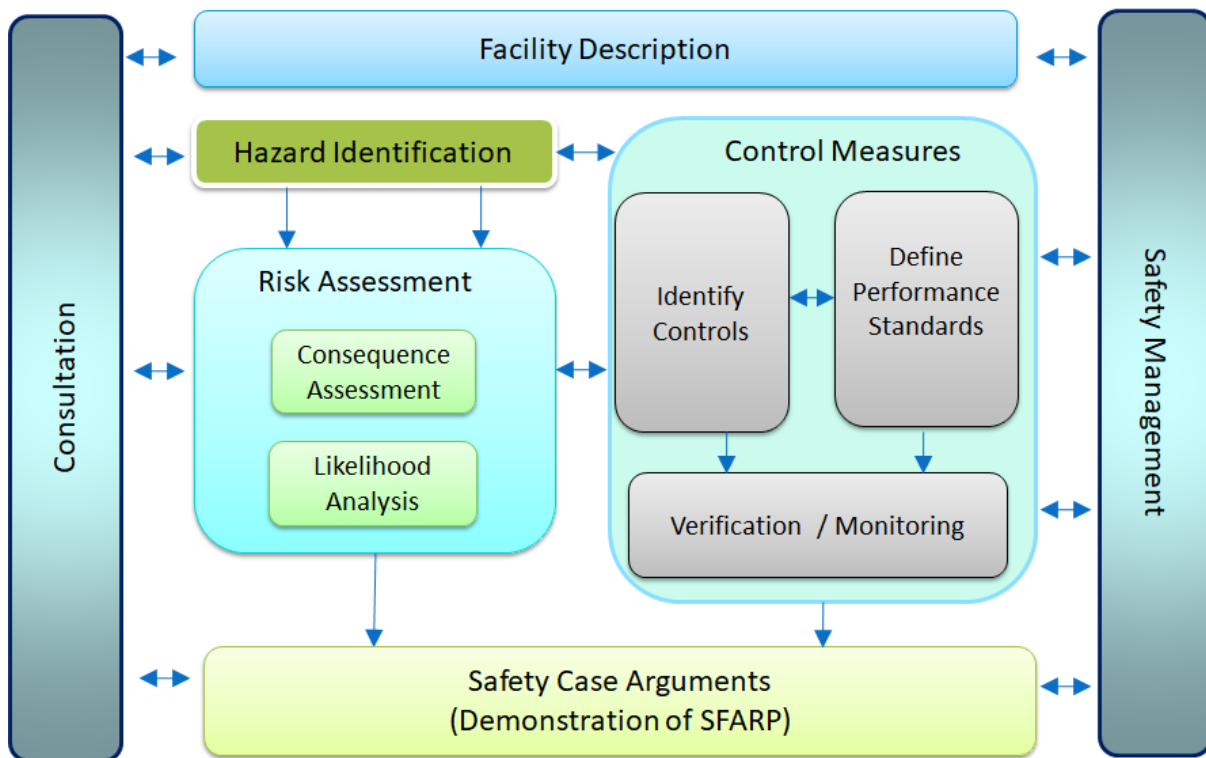
The health and safety of the community and our workforce is our highest priority.



# SAFETY CASE SUMMARY

The Melbourne Safety Case demonstrates that Quantem's systems and procedures are effective and safe and reliable operations are maintained. This in turn ensures that we protect our people and assets, the environment and the community. The Safety Case describes the potential incidents and demonstrates how they occur and how they are controlled.

A summary of the Safety Case is provided in the diagram below.



## Safety Assessment

The core of the Safety Case is a systematic and comprehensive safety assessment. The safety assessment involves identifying all potential major incidents, involving scheduled chemicals, which pose a serious and immediate risk to health and safety if not effectively controlled.

The safety case then seeks to analyse those incidents such that there is a detailed understanding of how they occur (hazards) and the risk to health and safety from those potential incidents in terms of likelihood and consequence.

This process also involves identifying the control measures that are already in place to eliminate or reduce the risk of each major incident occurring, as well as identify additional controls that could further reduce the risk so far as reasonably practicable.

Our goal was to seek control in depth (multiple barriers) as well as assess and ensure the robustness of the identified controls.

This process was carried out with the involvement of operators, health and safety representatives, engineers and managers.

## Scheduled Materials

The Melbourne Terminal handles a number of materials that are classified as scheduled materials under the OHS Regulations.

These include specifically listed chemicals:

- Methane or Natural gas
- Petroleum and Related Vapour Cloud Forming Substances

There are also a range of materials falling under the category of flammable liquids which meet the criteria for Class 3 Packaging Group II and III. These include chemicals such as Pyrolysis Gasoline, Ethanol, Acetone and other solvents.

## Potential Major Incidents

The potential major incidents that have been identified for the terminal are associated with liquid hydrocarbon release and escalation through fire and/or explosion.

The infrastructure considered includes the tank farm, wharf facilities, truck loading gantries, pipelines, pumps and emission control equipment.

Most hydrocarbon releases do not ignite, however personnel close to site may be exposed to the health impacts of the release. Controls are in place to prevent or mitigate escalation.

The safety assessment has shown that for most major incidents the impact is expected to be contained within the terminal boundary. However, some high consequence events have the potential for offsite impacts. No toxic, fire or explosion events were identified that impact residential areas.

Events with offsite impacts have a very low probability of occurring. The risk of these incidents occurring is controlled so far as reasonably practicable by comprehensive systems and procedures.

## Major Incident Hazards

Typical hazards leading to a Major Incident include, but are not limited to:

- Overfill
- Over-pressure / Under-pressure
- High / Low temperature
- Corrosion / Erosion

- Hydraulic hammer / Mechanical failure / Structural failure / Impact
- Opening to atmosphere / Leak
- External threats/loading (wind, lightning etc)

## Control Measures

In the safety assessment we identify all controls that have the potential to prevent and mitigate the risks associated with a potential major incident.

The control measures in place to protect against a major incident include:

- Safety protective systems (pressure relief, level devices)
- Asset integrity inspections
- Permit to Work system
- Operational procedures
- Management of change process

Control measures also include controls to mitigate the escalation of a major incident. These include:

- Ignition controls
- Emergency shutdown systems
- Fire and gas detection
- Fire protection systems
- Personal protective equipment
- Emergency response plan



For the protective measures in place performance requirements and associated performance standards were set. These define the requirements for controls to be effective and allow monitoring of the effectiveness of those controls

## Safety Management System

Quantem operates an integrated Health, Safety and Environment Management System (HSEQMS) that includes a description of the health and safety requirements that apply across the Terminal.

The (HSEQMS) clearly defines the activities required to ensure safe operation including, but not limited to:

- Establishing accountability and responsibility
- Establishing procedures for the management of hazards
- Control of work procedures
- Ensuring that procedures are in place to manage activities safely
- Ensuring personnel are competent
- Change management
- Design, management, inspection and verification of control measures
- The role of workers and consultation.

The management system is subject to an ongoing review process to ensure rigorous control is maintained and to drive continuous improvement.

## Emergency Response

A comprehensive Emergency Response Plan (ERP) has been developed for the Melbourne Terminal and this has been reviewed with the Fire Rescue Victoria (FRV) as the designated control agency.

The plan comprises actions and guidelines to enable Quantem to:

- Utilise available resources (including personnel and equipment) to bring an emergency under control as quickly as possible
- Support any response in the field, providing operational assistance and advice
- Facilitate appropriate notifications and communications with relevant key stakeholders (internal and external)
- Co-ordinate sourcing and deployment of additional resources as required

- Undertake recovery activities

Training exercises, both desktop and simulations of various incident scenarios are also undertaken on a regular basis to ensure readiness. This involves site personnel and emergency services.

A site emergency alarm system is installed to warn personnel of a potential incident so that hazardous areas are evacuated promptly to reduce the risk of harm to personnel. In the unlikely event of an incident impacting beyond the site boundary the neighbouring industries will be notified by phone or via the Port Emergency communication system.

In the event of a major incident the emergency shutdown system is initiated. This isolates storage tanks and shuts down power to non-essential equipment. This is to mitigate the consequence of a potential major incident.

The site also has an extensive fire protection system to protect and combat fire in any area of the facility.

## Community Response

Sirens at the Terminal are sounded to alert on-site personnel only. In the event of a major incident with offsite impact, emergency services have the responsibility of informing impact communities and neighbours.

If necessary, the police will use the electronic media, including major radio stations 3AW (693AM), ABC (774AM) and local community radio station Stereo 974 (97.4 FM) to broadcast information to the community.

If the wider community needs to respond to an incident relating to odours, low levels of chemicals and smoke, people should stay indoors with windows and doors shut and air conditioners off to prevent entry into the property.

If an evacuation is required Victoria Policy will notify and coordinate with the local community directly.

Both Melbourne City Council and Maribyrnong City councils would be kept informed of such incidents and can provide information.



# APPENDIX A LICENCE TO OPERATE





# Licence to operate a Major Hazard Facility

Occupational Health and Safety Act 2004  
Occupational Health and Safety Regulations 2017

This Licence is issued to the operator

Terminals Pty Ltd  
Level 1  
379 Collins St.,  
MELBOURNE VIC 3000  
  
ACN: 000 348 407


and authorises the facility:

54-60 & 70-78 Mackenzie Rd.,  
WEST MELBOURNE  
VIC 3003

to operate as a Major Hazard Facility.

Licence Number	Date Granted	Effective Date	Expiry Date
MHL 021/07	8 August 2023	19 September 2023	18 September 2028

Conditions and Schedule 14 materials associated with this licence are detailed in subsequent page(s).

Rob Kelly 

Deputy Commander, Field Operations,  
WorkSafe Victoria

15 September 2023

## Licence to operate a Major Hazard Facility

### Conditions:

The Chief Executive Officer and/or the most senior officer of Quantem (Terminals Pty Ltd) that is resident in Victoria must attend periodic Compliance Meetings with WorkSafe's Major Hazard Facility Licence Delegate (Delegate).

The first Compliance Meeting must occur on or before 1 February 2024, with subsequent meetings to be held periodically, as directed by the Delegate.

At the Compliance Meetings, representatives of Quantem must provide a presentation to WorkSafe that demonstrates to the satisfaction of the Delegate, that Quantem is continuing to safely and competently operate the Facility.

Examples of the matters that should be addressed by Quantem in the Compliance Meeting, include providing evidence that:

- a) performance reporting processes are providing Quantem senior management with insight into the effectiveness of the MHF's Safety Management System (SMS) and risk control measures adopted;
- b) performance monitoring and auditing of the MHF's SMS (to verify the effectiveness of all aspects of the SMS) is being used to improve all aspects of the SMS continually; and
- c) action is being taken by Quantem to address gaps identified between the actual performance of the SMS, and the expected performance standard.

The delegate may specify additional matters to be addressed.

Rob Kelly



Deputy Commander, Field Operations,  
WorkSafe Victoria

15 September 2023

## Licence to operate a Major Hazard Facility


The Schedule 14 materials present or likely to be present at the facility are listed in tables 1 and 2 below

Extracted from Table 1 of Schedule 14, *Occupation Health and Safety Regulations 2017*

ITEM	MATERIAL	CAS or UN No. Included UNDER NAME
35	METHANE or NATURAL GAS, including biogas upgraded to the equivalent quality of natural gas	CAS No. 74-82-8

Extracted from Table 2 of Schedule 14, *Occupation Health and Safety Regulations 2017*

ITEM	MATERIAL DESCRIPTION
13	Flammable liquids, hazard categories 2 or 3 that, once ignited, sustain combustion

Rob Kelly 

Deputy Commander, Field Operations,  
WorkSafe Victoria

15 September 2023

## MORE INFORMATION

This brochure represents a summary of the Safety Case for the Melbourne Terminal. If you would like further information, then please contact Terminals:

**Melbourne Terminal Manager**

Quantem  
54-62 Mackenzie Road, West Melbourne  
Tel: (03) 8387 1900

**Or**  
**Head Office**

Tel: (03) 9604 2900

More information regarding the requirements for Major Hazard Facilities is available from the Worksafe Victoria Website [www.worksafe.vic.gov.au](http://www.worksafe.vic.gov.au).