

# HSSE Standard – Use of Fumigants at TasPorts Facilities

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## 1. PURPOSE

The purpose of this Health, Safety, Security and Environmental (“**HSSE**”) standard (“**Standard**”) is to define the minimum standard Tasmanian Ports Corporation Pty Ltd (“**TasPorts**”) accepts to permit the use of Fumigants for biosecurity and pre-shipment treatment of commodities, at any of TasPorts’ owned, operated or managed land and/or berths and water (“**facilities**”).

## 2. SCOPE

This Standard:

- applies to all TasPorts’ staff, contractors, customers, licensees, tenants, port users and the public (“**TasPorts’ Personnel**”) planning to undertake or undertaking Fumigation for the purposes of biosecurity and pre-shipment treatment at TasPorts’ facilities;
- forms part of the suite of documentation associated with TasPorts’ Integrated HSSE Management System and is intended to support the implementation of the TasPorts Environmental Policy [Ref.1] and the TasPorts Health and Safety Policy [Ref.2];
- prohibits in-vessel or in-transit Fumigation using methyl bromide at any TasPorts facilities at any time;
- prohibits under tarp Fumigation using methyl bromide for bulk export commodities at any TasPorts facilities at any time;
- prohibits the release of the Fumigant, methyl bromide, to atmosphere, including during venting, from any TasPorts facilities, effective from 1 October 2018; and
- mandates the use of methyl bromide recapture technology on and from 1 October 2018.

## 3. OBJECTIVES

This Standard provides a framework against which fumigation management plans (“**FMP**”) are assessed, accepted and monitored by TasPorts’ to:

- ensure TasPorts’ Personnel are not adversely impacted by Fumigants;
- promote the efficient use of Fumigants, Fumigant alternatives and recapture technology to support TasPorts’ commitment to facilitating sustainable trade for the benefit of Tasmania; and
- minimise the environmental impacts associated with the release of ozone depleting substances (“**ODS**”) such as methyl bromide.

The objectives of this Standard are to:

- prevent TasPorts’ Personnel exposure to harmful Fumigants;
- minimise Environmental Harm resulting from the release of methyl bromide, an ODS, from TasPorts facilities;
- define the arrangements for the effective management of Fumigation activities at TasPorts facilities, including:
  - identifying prohibited Fumigants;
  - issuing a ‘Permit to Fumigate or Ventilate’;
  - notifying the relevant parties outlined in the this Standard of Fumigation events;
  - establishing exclusion zones, signage and warnings;
  - establishing monitoring, records and reporting requirements
- encourage the use of alternative Fumigants; and
- promote the use of methyl bromide recapture technologies.

#### 4. FUMIGATION

**Fumigation** at TasPorts facilities occurs using a number of different Fumigants for both biosecurity and pre-shipment treatment purposes. Fumigant requirements differ depending on the type of biosecurity threat, the commodity and the country the commodity will be exported to.

Fumigants that require TasPorts approval for use at TasPorts facilities include, but are not limited to:

- methyl bromide;
- bifenthrin (MAXXTHOR-100 and Biflex Aqua);
- phosphine; and
- sulfuryl fluoride.

Export country biosecurity pre-treatment requirements are detailed in the Manual of Importing Country Requirements (“**MICoR**”) [Ref.3], or any other relevant notice issued by a regulatory authority. For example, all logs with bark exported to China require mandatory treatment prior to shipment using one of the following methods:

- methyl bromide Fumigation; or
- sulfuryl fluoride Fumigation; or
- heat treatment; or
- soaking.

Where permitted in accordance with **Section 6.3** of this Standard, Fumigation may occur at TasPorts facilities in Fumigation chambers, inspected shipping containers or inside in vessel prior to a ship’s departure or such other method approved by TasPorts in writing. **Appendix 1 – Fumigant Description**, provides a description of some of the Fumigants that require TasPorts approval for use at TasPorts facilities.

#### 5. LEGAL AND OTHER REQUIREMENTS

The laws and other requirements that may be applicable to the use of Fumigants at TasPorts facilities, include but are not limited to:

1. Legal Requirements:
  - *Biosecurity Act 2015* (Cth);
  - *Plant Quarantine Act 1994* (Tas);
  - *Export Controls Act 1982* (Cth);
  - *Export Control (Plants and Plant Products) Order 2011* (Cth);
  - *Marine Order 34 (Solid Bulk Cargoes) 2016* and Marine Notice 6/2014 ‘In-Transit Fumigation of Ship Cargoes’ (Cth) made under the *Navigation Act 2012* (Cth);
  - *Agricultural and Veterinary Chemicals Code Act 1994* (Cth);
  - *Agricultural and Veterinary Chemicals (Control of Use) Act 1995* (Tas);
  - *Veterinary Chemicals (Control of Use) Regulations 1996* (Tas);
  - *Agricultural and Veterinary Chemicals (Control of Use) (Methyl Bromide) Order 2011* (Tas);
  - *Environment Protection Policy (Air Quality) 2004* (Tas);
  - *Environmental Management and Pollution Control Act 1994* (Tas),
  - *Work Health and Safety Act 2012 (“WHS Act”)* (Tas);
  - *Work Health and Safety Regulations 2012* (Tas);
  - Code of Practice: Managing risks of hazardous chemicals in the workplace (Tas)
  - Code of Practice Managing the Work Environment and Facilities (Tas); and
  - Code of Practice Managing Risks in Stevedoring (Tas).

## 2. Other Requirements:

- Australian Fumigation Accreditation Scheme (“**AFAS**”);
- Managing Risks of Methyl Bromide Exposure when Unpacking Shipping Containers – Information Sheet (Safe Work Australia);
- AS 2476-2008: General fumigation procedures;
- Workplace exposure standards for airborne contaminants (Safe Work Australia); and
- TasPorts’ ‘Standard Terms and Conditions for Port Access’ (“**Port Access Terms**”).

Any person involved in any stage of a Fumigation process must comply with all applicable legal and other requirements at all times.

**Appendix 2 – Legal and Other Requirements** details how these laws and other requirements apply to the use of Fumigants at TasPorts facilities. Additional HSSE requirements may also be included in leases, licences, facility management agreements, service agreements, consultancy agreements, stevedoring arrangements and other TasPorts contracts and TasPorts’ policies and procedures.

## 6. REQUIREMENTS

### 6.1. Methyl Bromide

1. The release of methyl bromide into the atmosphere during venting is prohibited at any TasPorts facilities on and from Monday 01 October 2018.
2. On and from Monday 01 October 2018, methyl bromide recapture technology must be used during methyl bromide Fumigation and venting at any TasPorts facilities.
3. In-vessel or in-transit Fumigation using methyl bromide is prohibited at any TasPorts facilities at any time.
4. Under tarp Fumigation using methyl bromide for bulk export commodities is prohibited at any TasPorts facilities at any time.

### 6.2. Fumigation Management Plan

1. Any person performing Fumigation must submit its FMP to [fumigations@tasports.com.au](mailto:fumigations@tasports.com.au) by no later than 14-days prior to the commencement of any Fumigation unless TasPorts has accepted a FMP for multiple Fumigations under clause 6.2(4) of this Standard.
2. Fumigation must not commence unless and until TasPorts Manager Safety, or their authorised representative, has accepted the FMP<sup>1</sup>.
3. The FMP must be a standalone document and include all relevant procedures, work instructions, and other referenced supporting documents in the FMP, unless the activity or regulatory law or requirements state otherwise. TasPorts’ will review and assess the FMP and either accept the FMP or require the person performing the Fumigation to amend the FMP and resubmit it to TasPorts.
4. In some cases TasPorts may permit an accepted FMP be used for multiple Fumigations provided:
  - the FMP accepted by TasPorts is identical to the proposed Fumigation;
  - the risk assessment of Fumigation at the facility set out in the accepted FMP is identical to the risk assessment of the proposed Fumigation;
  - the prescribed practices for reducing, controlling and mitigating the risks identified in the risk assessment set out in the accepted FMP must not be affected, altered or changed by the proposed Fumigation.

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<sup>1</sup> For the avoidance of doubt, notwithstanding any review, assessment or acceptance by TasPorts of the FMP, TasPorts will not be taken to have approved of, endorsed or be responsible or liable for the FMP (or any of its contents) and the FMP is not deemed to have complied with any applicable laws.

5. If TasPorts permits an accepted FMP to be used for multiple Fumigations under paragraph 6.2(4) of this Standard, the person performing the Fumigation must submit its FMP to TasPorts for review and assessment under paragraph 6.2(3) of this Standard on an annual basis.
6. The person performing Fumigation must (and must ensure that each of their **workers**) comply with the FMP at all times.
7. The FMP must include:
  - the minimum requirements of the Australian Standard AS 2476-2008: General Fumigation procedures [Ref.13] and consider the '*Guidelines for the safe use of pesticides in non-agricultural workplaces*' [Ref.14] which establishes a best practice approach to pesticide use non-agricultural workplaces;
  - the name and contact details of the Person In Charge ("**PIC**") of the Fumigation activity;
  - the name and contact details of the company engaging the Fumigation contractor;
  - a description of the activity including the relevant commodity, Fumigant type and location;
  - the intended operating hours, including commencing Fumigation time, duration and venting times;
  - permit and licencing arrangements, including, but not limited to:
    - Commercial operator licence (business);
    - Individual certificates of competency (category 1, category 2, category 3, pest technician, methyl bromide / phosphine user);
    - a DAWR Statement of Accreditation against the requirements of the DAWR AFAS Methyl Bromide Fumigation Standard;
    - **Approved Arrangement and Approved Quarantine Place**; and
    - **Export Registered Establishment**;
  - a documented risk assessment of Fumigation at the facility. This must include identification and written assessment of HSSE risks to:
    - meet legal and other requirements;
    - protect the fumigator, local population and the environment; and
    - address potential adverse effects on the commodity to be fumigated.
 In addition, where the proposed Fumigant is methyl bromide:
    - the risk assessment must be performed in accordance with clause 1.1.1 of the *AFAS Methyl Bromide Fumigation Standard* [Ref.7]; and
    - TasPorts may request that a risk assessment workshop with relevant TasPorts Personnel is conducted to review the risk assessment, prior to TasPorts permitting the use of methyl bromide for Fumigation;
  - prescribed practices for reducing, controlling and mitigating the risks identified in the risk assessment, including but not limited to:
    - Fumigant type, quantity, dosage rates and venting concentrations;
    - notification of Fumigation activity to TasPorts Personnel;
    - controlling access / exclusion zones;
    - Fumigant impact on other port users and/or public;
    - ventilation / recapture technology;
    - waste disposal;
    - health surveillance arrangements;
    - emergency procedures and evacuation points, including communication with emergency services;
    - emergency venting and entry requirements; and
    - compliance with the requirements of state and local authorities including any notification and reporting requirements.
  - any applicable **exposure standard** limits, tolerable exposure limits ("**TELS**") and threshold limit value ("**TLV**") above which work must stop and/or corrective actions must be undertaken;
  - a description of how the applicable **exposure standard** limits, **TELS** and **TLV** will be monitored;
  - demonstrate how the **PIC** will monitor and evaluate the controls to mitigate the risks, including, for example, Fumigant monitoring records and documented visual inspections; and

- a site plan, map or sketch to help illustrate the activity location and dimensions, risk area, buffer and exclusion zones, proximity to other port users, the public and any other sensitive receptors, the location of control equipment and devices to mitigate and monitor the uncontrolled release of the Fumigant, including security and warnings.

### 6.3. Permit to Fumigate or Ventilate

1. Fumigation or ventilation on TasPorts facilities must occur in accordance with the TasPorts HSE Flowchart - Permit to Fumigate or Ventilate [Ref.15] ("**Flowchart**"). The Flowchart is included as **Appendix 3 – Flowchart – Permit to Fumigate or Ventilate**, and illustrates the steps required to be followed to issue a 'Permit to Fumigate or Ventilate'.
2. The nominated **PIC** of the Fumigation must complete the applicable 'Permit to Fumigate or Ventilate' and submit to the relevant port and to those checked in Section 8 'Notifications' of the applicable 'Permit to Fumigate or Ventilate' as follows:

Applicable Locations	Nominated Email Address:
Bell Bay, Burnie, Devonport, Stanley, Strahan:	<a href="mailto:northernports@tasports.com.au">northernports@tasports.com.au</a>
Hobart	<a href="mailto:operationsadmin@tasports.com.au">operationsadmin@tasports.com.au</a>
King Island and Flinders Island:	<a href="mailto:islandports@tasports.com.au">islandports@tasports.com.au</a>
BCET Woodchip Facility	<a href="mailto:Scott.Bloom@tasports.com.au">Scott.Bloom@tasports.com.au</a>
All port waters or berths	<a href="mailto:harbourmaster@tasports.com.au">harbourmaster@tasports.com.au</a>
All locations (cc all correspondence to:)	<a href="mailto:fumigations@tasports.com.au">fumigations@tasports.com.au</a>

3. Fumigation or ventilation on landsides must not occur until a TasPorts Permit to Fumigate or Ventilate (Landsides) [Ref.16], has been issued by the relevant Port Operations/Site Coordinator.
4. Fumigation or ventilation in vessel must not occur until a TasPorts Permit to Fumigate or Ventilate (in Vessel) [Ref.17] has been issued by the relevant TasPorts Port Operations/Site Coordinator.
5. Once issued the applicable 'Permit to Fumigate or Ventilate' maybe valid for up to 14 days. If the duration of the issued 'Permit to Fumigate or Ventilate' is greater than one (1) day, then the 'Daily Fumigation or Ventilation Checklist [Ref.18] must be completed by the Fumigation contractor and made available to TasPorts upon request.
6. In accordance with the requirements of Marine Order 34 (Solid bulk cargoes) 2016 [Ref.19], in vessel and in-transit Fumigation must not occur until a 'Notice of intention to conduct in-transit Fumigation' has been made to the Australian Maritime Safety Authority ("**AMSA**") and the Australian Pesticides & Veterinary Medicines ("**APVMA**"). Notification should occur as soon as possible, but not later than 72-hours before the vessel arrives in the port where Fumigation will occur. The Vessel Master is responsible for the notification. A copy of the notification must be made available to TasPorts prior to TasPorts issuing a TasPorts Permit to Fumigate or Ventilate (In Vessel) [Ref.17].
7. Fumigation using more than 50kg of methyl bromide is prohibited, unless authorised by a permit issued by **DPIPWE** [Ref.5 and Ref.6]. Permit applicants must show that the planned Fumigation activity can be undertaken safely.
8. The Fumigation contractor must obtain written landowner consent from TasPorts prior to making an application for a 'Permit to allow the use of Methyl bromide in quantities greater than 50 kilograms' at TasPorts facilities.

#### 6.4. Notifications

1. Once a TasPorts 'Permit to Fumigate or Ventilate' [Ref.16 or 17] has been issued, the relevant Port Operations Supervisor/Site Coordinator must update the relevant Port 'Port Permit to Work Log' in TasPorts' systems.
2. Only the TasPorts General Manager Corporate Affairs, or their authorised representative, is approved to make written notification to potentially affected sectors of the community (e.g. Department of Health and Human Services, local council and emergency services).

#### 6.5. Security and Warnings

1. A "risk area" exclusion zone must be set up with a minimum **6m** clearance around the defined "risk area" (unless a more stringent zone has been mandated by law or by the scale of the operation), in which no unprotected persons may enter.
2. A "buffer zone" must be set up with a minimum **25m** clearance around the defined "risk area" (unless a more stringent zone has been mandated by law or by the scale of the operation). The buffer zone must:
  - be adequately sign-posted; and
  - restrict access to the public and other port users.
3. The "risk area" exclusion zone must be signposted and physically barricaded using at a minimum, warning signage, bollards and flagging.
4. Before the application of the Fumigant, the fumigator in charge of the Fumigation must affix warning signs to the perimeter of the "risk area" and each means of access to the risk area, as detailed in the Australian Standard AS 2476 General Fumigation procedures [Ref.12]. This warning sign must comply with the requirements of section 2.7.1 of the Australian Standard AS 2476 General Fumigation procedures (as amended/updated from time to time). Currently, the warning sign must:
  - be in the form set out in **Appendix 4 – Fumigation Warning Notice** of this Standard with a white background;
  - include the words: "DANGER KEEP OUT FUMIGATION BY (name of fumigant)", in capital letters;
  - the words must not be less than 10cm high;
  - be in contrasting colour to the white background; and
  - clearly show the emergency contact and telephone number of the fumigator in charge or the firm.

#### 6.6. Fumigation and Ventilation

1. Prior to Monday 01 October 2018, on landsides methyl bromide Fumigation and ventilation must only occur after 4pm but before 8am, unless recapture equipment is utilised.
2. On and from Monday 01 October 2018, methyl bromide Fumigation and ventilation must only occur in accordance with this Standard, the issued "Permit to Fumigate or Ventilate" and the TasPorts accepted FMP.
3. At all times, the weather forecast must be monitored to:
  - predict adverse weather conditions during Fumigation and ventilation;
  - assist in planning Fumigation and ventilation activities; and
  - determine monitoring locations.

#### 6.7. Records

1. Fumigation records must be emailed, no later than 14 days following completion of the Fumigation event, to [fumigations@tasports.com.au](mailto:fumigations@tasports.com.au) and will include, where applicable to the Fumigant, those records specified under the Australian Standard AS 2476-2008 - General fumigation procedures [Ref.13], including, but not limited to:
  - Volume of container fumigated;

- Fumigant used;
  - Quantity of Fumigant used;
  - Fumigant concentration;
  - Monitoring records;
  - Fumigation commencement time;
  - Top-up quantities and times (where appropriate);
  - Date and time of clearance of the Fumigation enclosures; and
  - Measured concentration at clearance.
2. Fumigant quantities used will be tracked in the TasPorts Register - Fumigant Usage at TasPorts Facilities [Ref.20].
  3. Monitoring records must be maintained and made available to TasPorts upon request.

### 6.8. Monitoring and Evaluation

1. The effectiveness of implemented mitigation measures and controls must be monitored through periodic and documented audits and inspections.
2. Any Fumigation monitoring program must be developed in accordance with industry standards, for example AFAS.
3. All instruments used for measuring and monitoring Fumigant concentrations must be fit for the purpose, in good working order and calibrated on a regular basis according to manufacturer's instructions.
4. At all times the applicable Fumigation **exposure standard** limits, TELs and/or TLV must be monitored during Fumigation and ventilation in accordance with industry standards and as documented in the TasPorts accepted FMP. For example during methyl bromide Fumigation and ventilation, a TLV of 5 parts per million ("ppm") must not be exceeded at or outside of the boundary to the "risk area" i.e. at 6m.

### 6.9. Event & Action Management

1. All HSE hazards or incidents relating to the use of Fumigants must be reported to the relevant TasPorts Operations Supervisor. Such hazards or incidents may include, but are not limited to:
  - uncontrolled release of Fumigants;
  - unauthorised entry into established exclusion zones;
  - Fumigant overdosing of commodities;
  - exceeding the monitoring criteria set for the exclusion zone boundary;
  - insufficient implementation of Fumigant mitigation measures and controls identified in this Standard;
  - reports of suspected Fumigant poisoning; and
  - complaints regarding use of Fumigants.
2. Corrective and preventative actions arising from environmental hazards, incidents and/or monitoring programs will be tracked in the TasPorts' Incident Management System (IMS).

## 7. DEFINITIONS AND ABBREVIATIONS

AA	Approved Arrangements
AFAS	Australian Fumigation Accreditation Scheme
AMSA	Australian Maritime Safety Authority
Approved Arrangements	<p>An <b>Approved Arrangement</b> is defined in Part 2, section 10 of the <i>Biosecurity Act 2015</i> (Cth) to mean an arrangement for which an approval is in force under paragraph 406(1) of the <i>Biosecurity Act 2015</i> (Cth).</p> <p>These arrangements allow operators to manage biosecurity risks and/or perform the documentary assessment of goods in accordance with departmental requirements, using their own premises, facilities, equipment and people, and without constant supervision by the department and with occasional compliance monitoring or auditing.</p>
Approved Quarantine Place	<p>An <b>Approved Quarantine Place</b> is a place or part of a place that has been approved by Biosecurity Tasmania as meeting certain standards so that items may be stored there pending clearance inspection by Biosecurity Tasmania prior to exporting or importing.</p>
APVMA	Australian Pesticides & Veterinary Medicines Authority
AQP	Approved Quarantine Place
CUE	Critical Use Exemptions
DAWR	Department of Agriculture and Water Resources
DPIPWE	Department of Primary industries, Parks, Water and Environment
Environmental Harm	<p><b>Environmental harm</b> is defined in section 5(1) of the <i>Environmental Management and Pollution Control Act 1994</i> (Tas) to mean:</p> <p>any adverse effect on the environment (of whatever degree or duration) and includes an environmental nuisance</p>
Environmental Nuisance	<p><b>Environmental nuisance</b> is defined in section 3 of the <i>Environmental Management and Pollution Control Act 1994</i> (Tas) to mean:</p> <p>(a) the emission, discharge, depositing or disturbance of a pollutant that unreasonably interferes with, or is likely to unreasonably interfere with, a person's enjoyment of the environment; and</p> <p>(b) any emission, discharge, depositing or disturbance specified in an environment protection policy to be an environmental nuisance.</p>
Exposure standard	<p><b>Exposure standard</b> is defined in section 2 of the Safe Work Australia 'Workplace Exposure Standards for Airborne Contaminates' to mean an exposure standard in the Workplace Exposure Standard for Airborne Contaminants in Appendix A. An exposure standard listed in Appendix A represents the airborne concentration of a particular substance or mixture that must not be exceeded. The exposure standard can be of three forms:</p> <p>(a) 8-hour time-weighted average,</p> <p>(b) peak limitation, and</p> <p>(c) short term exposure limit.</p>



	<p>Peak limitation means a maximum or peak airborne concentration of a substance determined over the shortest analytically practicable period of time which does not exceed 15 minutes.</p> <p>Short term exposure limit (STEL) means the time-weighted average maximum airborne concentration of a substance calculated over a 15 minute period.</p> <p>8-hour Time-weighted average (TWA) means the maximum average airborne concentration of a substance when calculated over an eight-hour working day, for a five-day working week.</p>
FMP	<b>Fumigation Management Plan</b>
Fumigant	<p><b>Fumigant</b> is defined in section 1.4.3 of Australian Standard, AS 2476 General fumigation procedures to mean:</p> <p><i>'A toxic chemical which at a particular temperature and pressure can exist in a gaseous state in sufficient concentration and for sufficient time to be lethal to pests or disease organisms.'</i></p>
Fumigation	<p><b>Fumigation</b> is defined in section 1.4.4 of Australian Standard, AS 2476 General fumigation procedures to mean:</p> <p>The application of a fumigant to a fumigant enclosure for the eradication of pests.</p>
HSSE	Health, Safety, Security and Environment
IMDG	International Maritime Dangerous Goods
IMS	Incident Management System
MICoR	Manual of Importing Country Requirements
Montreal Protocol	Montreal Protocol on Substances that Deplete the Ozone Layer
ODS	Ozone Depleting Substance
PIC	<b>Person in Charge</b>
Port Access Terms	TasPorts' 'Standard Terms and Conditions for Port Access'
ppm	Parts per million
Registered Establishment	<p>An export registered establishment is defined in Part I Section 3 of the <i>Export Control Act 1982</i> (Cth) and means an establishment that is registered under the regulations.</p> <p>Note: As the term establishment includes premises, what is registered under the regulations may be premises</p>
Site	Any <b>site</b> owned, operated, managed or controlled by TasPorts.
TasPorts	Tasmanian Ports Corporation Pty Ltd
Threshold Limit Value	<p><b>Threshold Limit Value</b> is defined in AFAS Methyl Bromide Fumigation Standard [Ref.7], Appendix 15 – Glossary of Terms to mean:</p> <p><i>'the maximum concentration of fumigant that a worker can be repeatedly exposed to in the workplace without harmful effects.'</i></p> <p>This figure is based on an 8-hour day, 40-hour working week and for methyl bromide is currently 5ppm in Australia.</p>

TEL	Tolerable Exposure Limits
TLV	Threshold Limit Value
WHS Act	<i>Work Health and Safety Act 2012</i> (Tas)
Worker	<p>Meaning of <b>Worker</b> is defined in Part 1, Division 3, section 7 of the <i>Work Health and Safety Act 2012</i>, to mean:</p> <p>A person is a worker if the person carries out work in any capacity for a person conducting a business or undertaking, including work as –</p> <p>(a) an employee; or</p> <p>(b) a contractor or subcontractor; or</p> <p>(c) an employee of a contractor or subcontractor; or</p> <p>(d) an employee of a labour hire company who has been assigned to work in the person's business or undertaking; or</p> <p>(e) an outworker; or</p> <p>(f) an apprentice or trainee; or</p> <p>(g) a student gaining work experience; or</p> <p>(h) a volunteer; or</p> <p>(i) a person of a prescribed class.</p>

## 8. REFERENCES

1. TasPorts. Environmental Policy, Tasmanian Ports Corporation, Tasmania.
2. TasPorts. Health and Safety Policy, Tasmanian Ports Corporation, Tasmania.
3. DAWR, Manual of Importing Country Requirements (MICoR, Viewed online on 13 June 2018 at <<http://www.agriculture.gov.au/export/micor>>.
4. TasPorts. Biosecurity Operations Manual, Tasmanian Ports Corporation, Tasmania (COR-ENV-007-MAN-001) (TRIM No. DOC/18/18931).
5. DPIPWE, 2014, AGVET Chemical Information Sheet – Permit to allow the use of Methyl bromide in quantities greater than 50 kilograms, Department of Primary Industries, Parks, Water and Environment, Biosecurity Tasmania, May 2014.
6. Tasmanian Government, 2011, Agricultural and Veterinary Chemicals (Control of Use) (Methyl Bromide) Order 2011 (Tas), Viewed online on 14 June 2018 at <<https://www.legislation.tas.gov.au/view/html/inforce/2011-09-14/sr-2011-091>>.
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8. Safe Work Australia, 2011, Code of Practice Managing the Work Environment and Facilities Safe Work Australia, December 2011 [ISBN 978-0-642-33295-0].
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16. TasPorts. Permit to Fumigate or Ventilate (Landsides), Tasmanian Ports Corporation, Tasmania (COR-ENV-004-FOR-002) (TRIM No. DOC/18/24525).
17. TasPorts. Permit to Fumigate or Ventilate (In Vessel), Tasmanian Ports Corporation, Tasmania (COR-ENV-004-FOR-003) (TRIM No. DOC/18/24526).
18. TasPorts. Daily Fumigation or Ventilation Checklist, Tasmanian Ports Corporation, Tasmania (COR-ENV-004-FOR-004) (TRIM No. DOC/18/28906).
19. AMSA, 2016, Marine Order 34 (Solid bulk cargoes) 2016, Viewed online on 14 June 2018 at <<https://www.amsa.gov.au/vessels-operators/regulations-and-standards-vessels>>.
20. TasPorts. Register - Fumigant Usage at TasPorts Facilities, Tasmanian Ports Corporation, Tasmania (COR-ENV-004-REG-001) (TRIM No. DOC/18/24698).

## APPENDIX 1 – FUMIGANT DESCRIPTION

### **Methyl Bromide**

Methyl bromide is an ozone depleting gas used all over the world as a broad-spectrum Fumigant to eradicate pests in a wide range of commodities. Australia is a party to the Montreal Protocol on substances that deplete the ozone layer (“**Montreal Protocol**”). The Montreal Protocol is an international treaty designed to protect the ozone layer by phasing out the production of ozone depleting substances. Australia acceded to the Vienna Convention for the Protection of the Ozone Layer in 1987 and ratified the Montreal Protocol originally in 1989, and then again for each of the five amendments agreed between 1990 and 1999. Consequently, the use of methyl bromide has been prohibited in Australia, except for use as a biosecurity and pre-shipment treatment, approved feedstock application or where there is an approved critical use exemption (“**CUE**”).

At TasPorts facilities, Methyl bromide has been used as a biosecurity measure to treat imported commodities where directed by Biosecurity Tasmania. As such, some commodities exported from TasPorts facilities require methyl bromide fumigation. This includes logs with bark on exported to China. Since commencement of containerised export logs with bark on in Hobart in October 2017, and Bell Bay in January 2018, the use of methyl bromide at our ports by our customers has increased significantly.

As part of the methyl bromide Fumigation process, venting of the contained Fumigant occurs resulting in the release of methyl bromide to the atmosphere. Methyl bromide is toxic, is an ozone depleting substance and can be harmful to human health (particularly when Fumigations are conducted in close proximity to TasPorts Personnel).

### **Bifenthrin**

The active ingredient in Bifenthrin is a synthetic pyrethroid insecticide and is applied inside the vessel for the treatment of woodchips prior to export. The commercial products typically used at TasPorts facilities include MAXXTHOR-100 and Biflex Aqua.

### **Phosphine**

Phosphine gas is currently used as a ‘trial’ replacement to methyl bromide treatment of woodchips. Aluminium phosphide is a form of phosphine. Aluminium phosphide is a colourless solid, generally sold as a grey-green-yellow powder. Aluminium phosphide tablets are generally applied inside vessels and release toxic phosphine gas when they contact moisture (either in air or fluids). Aluminium phosphide is effective, cheap and easily applied. However, consideration must be given to the associated hazards from inhalation of toxic gas and explosion.

### **Sulfuryl Fluoride**

Sulfuryl fluoride is a relatively new Fumigant chemical to the fumigation industry that has been introduced to replace methyl bromide. Its use has increased as a replacement for methyl bromide and as an alternative to the use of phosphine. Sulfuryl fluoride is usually marketed under a series of different brand names by different competing companies including: Vikane; Profume; Zythor and Masterfume.

## APPENDIX 2 – LEGAL AND OTHER REQUIREMENTS

Some of the relevant legal and other requirements that may be applicable to the use of fumigants on TasPorts' facilities are outlined below. These requirements are not exhaustive and are provided for information purposes only.

### Biosecurity and Plant Quarantine

The *Biosecurity Act 2015* (Cth) is administered by the Commonwealth 'Department of Agriculture and Water Resources' ("**DAWR**") and prescribes (among other things) the management of biosecurity risks in relation to:

- goods that are brought into Australian territory from outside Australian territory (Chapter 3);
- aircraft and vessels that enter Australian territory from outside Australian territory, including by controlling the places where they can land or be moored and their movement while they are in Australian territory (Chapter 4); and
- diseases or pests that may be in or on goods or premises in Australian territory (Chapter 6).

The *Biosecurity Act 2015* (Cth) also provides for arrangements to be approved authorising and requiring biosecurity industry participants to carry out biosecurity activities to manage biosecurity risks associated with goods, premises or other things for the purposes of this Act (Chapter 5).

Under section 70 the *Plant Quarantine Act 1994* (Tas), Biosecurity Tasmania will designate sites as an 'Approved Quarantine Place' ("**AQP**"). An AQP is a place or part of a place that has been approved by Biosecurity Tasmania as meeting certain standards so that items may be stored there pending clearance inspection by Biosecurity Tasmania prior to exporting or importing.

### Export Controls Act 1982

The *Export Controls Act 1982* (Cth) and *Export Control (Plants and Plant Products) Order 2011* (Cth) prescribe requirements for the export of agricultural products, including logs. All premises, including fishing vessels where goods prescribed in the legislation are prepared for export must be registered to undertake those operations by the department under the *Export Control (Prescribed Goods—General) Order 2005* (Cth). Preparation for export includes:

- processing, packing or storage of goods
- treatment of goods
- handling or loading of goods.

The purpose of the *Export Control (Plants and Plant Products) Order 2011 (Order)* (Cth) is to regulate the export of prescribed plants and plant products, (including logs, for which a phytosanitary or any other certificate is required by declaring those goods to be prescribed goods under the Act and specifying the conditions and restrictions for their export.

The TasPorts Biosecurity Operations Manual [Ref.4] outlines how TasPorts manages biosecurity and quarantine matters at the following ports: Hobart, Bell Bay, Burnie, King Island and Flinders Islands in accordance with state and federal legislation.

### Marine Orders and Notices

Requirements for in-transit Fumigations on ships are specified in the International Maritime Dangerous Goods ("**IMDG**") Code, published by the International Maritime Organisation. *Marine Order 34 Solid Bulk Cargoes 2016* (Cth) made under the *Navigation Act 2012* (Cth), incorporates the requirements of the IMDG Code by requiring that if the master of a vessel intends to arrange for Fumigation of any cargo hold when the vessel is in a port, the master must, within 72-hours before arriving in the port, give notification to "AMSA.

Marine Notice 6/2014 'In-Transit Fumigation of Ship Cargoes' recommends that persons contemplating in-transit Fumigation of cargoes in Australian jurisdictions involve AMSA and the APVMA in this process. The notice states that any person or organisation contemplating conducting in-transit Fumigation of cargo must obtain a written permit from APVMA prior to any in-transit Fumigation taking place.

### **Agricultural and Veterinary Chemicals**

The *Agricultural and Veterinary Chemicals Code Act 1994* (Cth) and associated regulations regulate up to the point of sale, listed scheduled chemicals, including Fumigants such as methyl bromide.

The *Agricultural and Veterinary Chemicals (Control of Use) Act 1995* (Tas) and *Veterinary Chemicals (Control of Use) Regulations 1996* (Tas) control the use of agricultural and veterinary chemicals including Fumigants such as methyl bromide. The *Agricultural and Veterinary Chemicals (Control of Use) (Methyl Bromide) Order 2011* (Tas) [Ref.6] mandates that a permit is required for the handling or use of a methyl bromide Fumigant in a quantity exceeding 50 kilograms. In addition, all large-scale Fumigation using methyl bromide is prohibited, unless authorised by a permit issued by the 'Department of Primary Industries, Parks, Water and Environment' ("**DPIPWE**").

### **Australian Fumigation Accreditation Scheme**

To manage the high biosecurity risk posed by ineffective Fumigation treatments performed offshore, DAWR administers the AFAS. AFAS is a:

- management system run by overseas government agencies participating in the AFAS to ensure continued compliance of fumigators with the treatment requirements;
- training and accreditation system for fumigators and regulatory officers; and
- registration system for fumigation companies.

In Tasmania, Biosecurity Tasmania, under the *Agricultural and Veterinary Chemicals (Control of Use) Act 1995* (Tas), fumigation contractors must hold:

- Commercial operator licence (business); and
- Individual certificates of competency (category 1, category 2, category 3, pest technician, methyl bromide / phosgene user).

In addition, methyl bromide Fumigation must occur in accordance with the AFAS Methyl Bromide Fumigation Standard [Ref.7] and all operators using methyl bromide must hold a DAWR Statement of Accreditation.

### **Environment Protection Policy (Air Quality) 2004**

The *Environment Protection Policy (Air Quality) 2004* (Tas) states that diffuse sources of air pollution, including those that may cause Environmental Harm or nuisance, should be managed using best practice environmental management so as to:

- minimise emissions; and
- manage those emissions that are unavoidable in a manner that minimises impacts on health, safety or amenity.

### **Work Health and Safety Act 2012**

The *Work Health and Safety Act 2012 (WHS Act)* (Tas) provides a framework to protect the health, safety and welfare of all workers at work and of other people who might be affected by the work. The following approved code of practices under section 274 of the WHS Act provide guidance on and include provisions for the management of health impacts associated with the use of Fumigants in the workplace:

- Code of Practice Managing the Work Environment and Facilities [Ref.8]; and
- Code of Practice Managing Risks in Stevedoring [Ref.9].

### **Port Access Terms**

TasPorts' '*Standard Terms and Conditions for Port Access*' ("**Port Access Terms**") [Ref.10] specify HSSE requirements that apply to all persons that use and access a port owned by TasPorts. The Port Access Terms require all port users to (among other things):

- comply with all applicable laws, including environmental laws and directions given by TasPorts;
- not cause or permit any contamination;

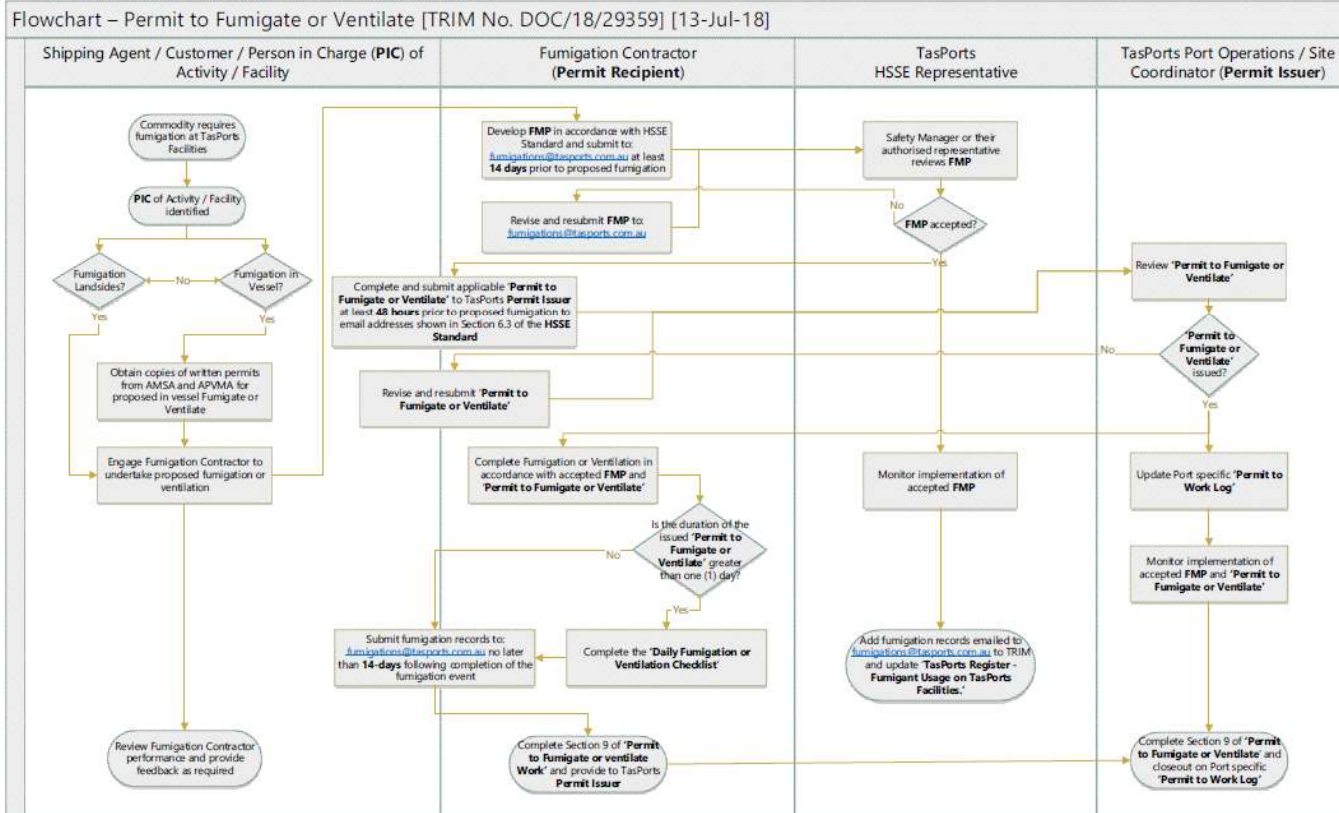
- not, without TasPorts' prior written consent, use or allow the facility, or any Port waters to be used for the use, transfer, handling, movement, carriage, placement or storage of any hazardous, dangerous, flammable, explosive, noxious, damaging, toxic, corrosive, irritating, offensive, radioactive, oxidising, poisonous or infectious substances; and
- immediately notify TasPorts on becoming aware of any contamination or potential breach of obligations under the Port Access Term or pursuant to the *Environmental Management and Pollution Control Act 1994* (Tas), *Pollution of Waters by Oil and Noxious Substances Act 1987* (Tas) or any environmental laws or requirements.

### APPENDIX 3 – FLOWCHART – PERMIT TO FUMIGATE OR VENTILATE

#### Flowchart – Permit to Fumigate or Ventilate

The following flowchart has been developed to support implementation of the following documents and sets out actions for each party involved in Fumigation activities at TasPorts facilities:

- HSSE Standard – Use of Fumigants at TasPorts Facilities (TRIM NO.: DOC/18/24521)
- Form - Permit to Fumigate or Ventilate (Landsides) (TRIM No.: DOC/18/24525)
- Form - Permit to Fumigate or Ventilate (In Vessel) (TRIM No.: DOC/18/24526)
- Form - Daily Fumigation or Ventilation Checklist (TRIM No.: DOC/18/28906)





## APPENDIX 4 – FUMIGATION WARNING NOTICE



'Toxic gas' symbol shall be in accordance with AS 1216.

'Flammable gas' symbol, if applicable, shall be in accordance with AS 1216.

Layout and 'Danger' symbol shall be in accordance with AS 1319.