

NEW UNDERGROUND PETROLEUM STORAGE SYSTEMS REGULATIONS

INFORMATION SESSIONS

CONTENTS

- Background to development of the Regulations
- Regulations – section by section
- Questions



Environmental Management and Pollution Control Act 1994 (EMPCA)

Intent - prevention and management of environmental harm

Underlying principal re liability

Legislative framework in Tasmania –there are a number of pieces of legislation aimed at reducing the risk of environmental harm

EMPCA is the major piece of environmental legislation

EMPCA has the intent of prevention and management of environmental harm

The underlying principle re liability is “*polluter pays*” ...although EMPCA allows for transference of liability where this is explicit in a contract of sale.

The power to require action is vested in the Board of the Environment Protection Authority (or EPA) and the Director of the EPA. Where these actions do not occur there is the power to apply penalties.

Sitting under EMPCA we have Regulations to provide detail on specific environmental issues – in this case to prevent site contamination from UPSS

There are also links to the planning system – where redevelopment of a potentially contaminated site is proposed (includes those that stored petroleum) there may be requirement to carry out a site assessment

To summarise

If you are operating or own a site with tanks – need to comply with the UPSS regulations and if you have a leak the provisions of EMPCA will become relevant

If selling a site with underground tanks consider your ongoing liability if the tanks are later found to have leaked. Consider a clause re clarification of liability

If purchasing a site consider whether you may become liable for cleanup and

If redeveloping consider whether Council may request a site assessment and factor this in as soon as possible.

Reduce potential harm to human health and the environment, protect water resources

Examples:

- Risk to human health due to vapours
- Risk to human health due to contact with soil
- Risk to the environment and human health where groundwater is affected

It is recognized nationally and internationally that leaking UST's have the potential to contaminate soil and groundwater leading to:

- risk to human health due to vapours, volatiles from fuel contaminated groundwater and soil may accumulate in buildings, especially basements and in other underground areas such as utility pits and can lead to ill health and explosive risks.

- risk to human health due to contact with soil eg a site in Tasmania with a leaking tank where hydrocarbons moved through groundwater to a nearby beach and came to the surface. This caused severe skin irritation for a child playing in the area as well as odour complaints.

- risk to the environment/health where Groundwater is affected eg of this -a site with a leaking tank is located near a school that used groundwater for watering the playing fields. The leak in the tank is only identified when thick layer of free phase product is discovered in a groundwater monitoring bore. The relatively early detection enabled the school bore to be shut down before further spread of the contamination occurred.

The need to protect groundwater from contamination is an increasingly important issue. There are >8000 bores supplying water for irrigation, town water, domestic use, stock watering and commercial purposes. There are indications the need to use this resource is increasing.

Other States in Australia have also recognised the need to ensure good management of UST's and these regulations bring Tasmania into line with NSW in particular – Vic, WA and Qld have slightly different approaches with the same aim.

Reference Group

Issues and Options paper, May 2008

Draft Regulations and Regulatory Impact Statement, August 2009

To ensure that everyone who needs to comply with the Regulations had a chance to comment & suggest improvements or raise issues – the following consultation occurred over the past 3 years:

Reference group – was set up early in the process – with representatives from industry bodies (Tasmanian Auto Chamber of Commerce, Australian Institute of Petroleum), owners and operators of sites with tanks, State and Local Government (particularly those involved in water resources and management of dangerous goods) and environmental consultants.

Issues and Options Paper - EPA Division canvassed a range of possible approaches for reducing the risk associated with leaking tanks & the best way to ensure tank owners act consistently (eg regulations, guidelines, insurance).

Document was released for public comment for 5 weeks - advertised in three papers and posted to stakeholders. The 14 responses were considered – the majority resulted in changes to the proposed approach. A response paper was placed on the EPA Division website.

Regulatory Impact Statement (RIS) looks at costs and benefits of proposed legislation and alternative options so that the option with greatest net benefit or least net cost to the community is identified. A RIS was required by Treasury.

Document released for 5 weeks - owners and operators of sites were contacted through lists of licensed sites obtained from Workplace Standards Tasmania. Advertisements went into three papers. 25 responses were received & response document is on web

BACKGROUND – COSTS AND BENEFITS

Cost to industry - \$5.5 to 7.3 million for first 5 years

- installation of mandatory equipment
- loss monitoring
- groundwater wells where required
- soil sampling and assessment where needed

Single site: \$750 to \$1,350 for first year

Benefits to Industry - \$19.1 million for first 5 years

- cleanup if a leak occurs
- value of lost fuel
- replacement of water supply
- reduction in land value of site and neighboring sites

Costs and benefits to community and Government

New Underground Petroleum Storage Systems Regulations – Information Sessions 2010

5

To prepare the Regulatory Impact Statement a detailed analysis was made of the requirements in the Regulations & costs and benefits of these requirements on industry, Government and the community.

1st heading - Costs to Industry as a whole for the first five years - included in assessment was (see dot points)

When looked at for a single site the baseline additional running costs for a year were calculated. This includes loss monitoring & record keeping only. The majority of sites won't require works additional to this.

2nd heading - Benefits are clearly greater than the costs.

Benefits are based on avoided costs (see dot points).

Assumptions were made based on number of sites with leaking tanks reported to the EPA Division, interstate estimates of numbers of tanks leaking at any time, and average cleanup costs when a tank leaks.

3rd heading - these are discussed in the RIS but a dollar value was not calculated. Many have already been mentioned & benefits obviously include protection of the environment, human health and resources such as groundwater and clean land.

REGULATIONS - TALK OUTLINE

- Define terms
- Summary of responsibilities
- Summary of main requirements in regulations
- Guidelines
- Exemptions
- Questions

This section of the talk focuses on enquiries received since the regulations commenced.

Not all requirements or all aspects of the requirements are covered – still need to consult regulations for the full details.

NOTE: the regulations relate to the environmental aspects of underground storage systems. Workplace Standards Tasmania still regulates the safety aspects of the storage systems.

DEFINITIONS

Petroleum includes - waste oil, high ethanol fuels, heating oil and biofuels.

System operator - manages the day-to-day operations of the storage system or where there is no person who manages the day-to-day operations of the storage system, an infrastructure owner of the storage system.

Infrastructure owner - is a person who is the sole or joint owner of the storage system. A landowner may be the infrastructure owner by virtue of the storage system being a fixture on land.

Landowner - is an owner of a parcel of land on which the storage system is situated and includes a person who has, in the exercise of a right under a mortgage, charge or other encumbrance, taken possession of the parcel of land; and has the power to sell or otherwise dispose of the parcel of land.

Abandoned Storage System – not in use on 31 March 2010.

In addition to diesel and petrol, “petroleum” includes - waste oil, high ethanol fuels, heating oil and biofuels.

The inclusion of high ethanol and biofuels is because they are becoming more common and they can still cause environmental damage (eg ethanol dissolves readily in water and can travel further in groundwater than normal petrol).

Each requirement in the regulation has been allocated to either a systems operator, infrastructure owner or landowner. This was done so that people know which requirements in regulations are their responsibility.

People may be all three.

Abandoned Storage System – not in use on 31 March 2010. Only requirement in the regulations that relate to abandoned storage systems are decommissioning requirements. Note: Workplace Standards may have additional requirements for these storage systems.

SUMMARY OF RESPONSIBILITIES

System operator's responsibilities:

- loss monitoring;
- monitoring groundwater monitoring wells.

Infrastructure Owner's responsibilities:

- ensure storage system compatible with petroleum stored;
- install mandatory equipment for new systems or when tank replaced;
- undertake loss verification if a potential loss is detected;
- install groundwater monitoring wells in a Groundwater Protection Zones;
- undertake environmental site assessment if contamination present;
- decommission storage system, including obtaining environmental assessment report.

Landowner's responsibilities:

- register UPSS.

Record Keeping

New Underground Petroleum Storage Systems Regulations – Information Sessions 2010

This summary of responsibilities is taken from the brochure that was circulated with the invitation to this information session. Copy of brochure is available on the EPA Division web site.

These responsibilities are summarised in the following slides.

Record keeping – all of these people need to keep records relating to the environmental management of their site. Full list is in the regulations.

REGISTERING STORAGE SYSTEMS

Landowner must register underground storage systems by 30 September 2010.

Form available on website or from EPA Division.

Need to supply information on systems operators, infrastructure owners, landowners and storage system details.

Keep data up to date, supply information when details change.

Notifications also required when contamination is detected.

LOSS MONITORING

From 31 March 2011, all UPSS must be monitored for fuel losses.

Small storage systems

- Manual tank gauging - six monthly.

Inventory Control – fuel in tank yesterday + deliveries – sales/use = fuel in tank today (dip reading).

All other storage systems:

- Monitoring must detect a leak of 0.76L/hr (18L per day) or more.
- Generally statistical inventory reconciliation analysis (SIRA).
- Send inventory data monthly to external company, data analysed and report supplied stating whether there has been a loss or not.
- Cost = \$25 per tank per month.

Loss monitoring is the main requirement for systems operators.

From 31 March 2011, all UPSS must be monitored for fuel losses.

Small storage system = a storage system that has a capacity of less than 5 500 litres and that is the only storage system situated on a parcel of land.

- Manual tank gauging - six monthly.

Manual tank gauging = measure level in tank, then leave for at least 36 hours with no petroleum added or removed, then measure again. If difference is greater than 2% of tank capacity then leak and must be investigated.

All other storage systems:

- Monitoring must detect a leak of 0.76L/hr (18L per day) or more.
- This is not an allowable level of loss but it is the industry and government standard set for SIRA methods. 0.76L/hr = US EPA 0.2gall/hr
- Generally statistical inventory reconciliation analysis (SIRA) used.
- SIRA statistically analyses inventory data to determine whether a loss has occurred.
- Inventory control – fuel in tank yesterday + deliveries – sales/use = fuel in tank today (dip reading).
- Typically inventory data sent each month to external company, they analyse data and send a report stating whether there has been a loss or not.
- One company quoted cost = \$25 per tank per month (extra \$3 per tank per month if data sent in on paper).

LOSS MONITORING – ALL OTHER STORAGE SYSTEMS CONT.

- Companies that offer this service –
 - Ask your fuel distributor
 - TACC
 - Service Station Association – Business Partners – Environmental Consultants
 - Search under “statistical inventory reconciliation” within Australia on the internet.
- Still do own daily inventory control to detect major systems failure.

Double walled tanks – monitor interstitial space six monthly.

- Finding companies that do SIRA – EPA Division doesn't endorse companies
 - Ask your fuel distributor – they sometimes have a deal with a certain SIRA provider and can get a cheaper rate.
 - Tasmanian Automobile Chamber of Commerce (TACC).
 - Service Station Association website – Business Partners – Environmental Consultants.
 - Search under “statistical inventory reconciliation” within Australia on the internet.

Check they use SIRA method accredited to meet US EPA standards for detection of 0.76L/hr.

Still do own daily inventory control to detect major systems failure. If there is a major failure need to detect this straight away, not wait for a month.

Double walled tanks – tank with inner and outer wall with water or vacuum between them, if leak in either can tell; monitor interstitial space six monthly; if leak to the environment then do environmental site assessment.

VERIFICATION OF LOSS

Loss detected by SIRA, check whether discrepancy due to dispenser error, incorrect dips etc or potentially a loss to the environment.

Environmental site assessment must be conducted if:

- loss detected by SIRA confirmed; or
- loss to the environment detected by manual tank gauging or interstitial monitoring.

Loss detected by SIRA, systems operator has 14 days to check whether discrepancy due to dispenser error, incorrect dips etc or potentially a loss to the environment.

If leak still likely, infrastructure owner notified and must investigate.

If loss detected by SIRA is confirmed or a loss to the environment is detected during manual tank gauging or interstitial monitoring then an environmental site assessment must be conducted.

ABANDONED SYSTEMS

Decommissioning

If an abandoned storage system is to be decommissioned it must be permanently decommissioned in the same manner as an active storage system.

Re-use

Before an abandoned system is reused it must be:

- shown to be sound; and
- registered.

Abandoned systems = systems not in use on 31 March 2010.

Decommissioning

There are no requirements to decommission abandoned storage systems by a set date in the regulations. However, if the decision is made to decommission an abandoned storage system (eg part of a sale of property or redevelopment if required by Council) the storage system must be permanently decommissioned in the same manner as an active storage system (see next slide).

Re-use

Before an abandoned system is reused:

- it must be tested to check the system is sound; and
- the system must be registered.

CESSATION OF USE

Storage system not used for 2 months must be decommissioned so tanks not forgotten and contamination not left in ground.

Temporary decommissioning

- Maximum of 12 months.
- Comply with Australian Standard.
- Must be shown to be sound before reuse.

Permanent decommissioning

- Must be removed in accordance with Australian Standard.
- Can only be left in the ground if removal poses a serious risk to infrastructure or people's safety.
- Soil and groundwater must be assessed for petroleum contamination.
- An assessment report must conclude whether the site is a contaminated site.

If a storage system is not used for 2 months it must be decommissioned. This limit is 4 months if storage system is being repaired or replaced, if it is not being used because a loss is being investigated or an environmental site assessment is being conducted.

Decommissioning is necessary so that tanks are not forgotten and left in the ground which can pose an explosion risk and if contamination is left in the ground there is the potential that it will leach into groundwater and/or result in vapours in buildings etc.

Temporary decommissioning -

- For maximum of 12 months. For situations where selling property etc.
- Must comply with the Australian standard and other requirements. Requirements include removing of fuel, if the tank is in groundwater and could float then it needs to be filled with water.
- If want to reuse must check system is sound.

Permanent decommissioning –

- System must be removed in accordance with Australian Standard.
- System can only be left in the ground if removal will pose a serious risk to infrastructure or people's safety.
- Soil and groundwater in the vicinity of the system must be assessed to determine whether it is contaminated by petroleum.
- Needs to be conducted by someone with expertise in contaminated sites.
- An assessment report must be obtained that details the results of the assessment and whether the site is a contaminated site.

GROUNDWATER MONITORING WELLS

- Loss monitoring may only detect a loss of over 18 litres of fuel per day (over 6500L per year).
- Can significantly impact groundwater quality and users of groundwater.
- To protect sensitive areas of groundwater (e.g. where groundwater is used for drinking water) Groundwater Protection Zones will be declared.
- If storage system in zone, infrastructure owner must install wells within two years.
- First zones will be declared within next 12 months.
- Wells must be monitored for contamination every 6 months.



US EPA

New Underground Petroleum Storage Systems Regulations – Information Sessions 2010

15

- Groundwater monitoring wells (GMW) required because loss monitoring may not detect a loss of 18 litres of fuel per day (over 6500L per year).
- Loss of this magnitude can significantly impact groundwater quality and users of groundwater. The photo shows contaminated groundwater which has so much fuel in it that it is brown and pure fuel is floating on the surface (yellow colour).
- To protect sensitive areas of groundwater (e.g. where groundwater is used for drinking water) Groundwater Protection Zones will be declared over small areas of the state.
- An example of a zone could be an area centred on a bore that is used for town drinking water supplies and cover an area with a radius of a few kilometres. If a UPSS is within this zone then an infrastructure owner of the UPSS must install wells within two years of the zone being declared.
- First zones will be declared within the next 12 months.
- Wells must be monitored for contamination every 6 months.

USE, REPAIR AND REPLACEMENT

- All storage systems must be compatible with the product they contain.
- New and replaced storage systems must contain mandatory equipment.
- If tank is replaced whole system must be replaced.
- If storage system, fill point or piping is removed to be replaced, excavation must be scrutinised for contamination.
- If contamination is present an environment site assessment must be conducted.
- Whenever repair or replacement occurs, system must be proved to be sound before use.



NSW EPA

- All storage systems must be compatible with the product they contain.
- High ethanol fuel may not be compatible with some fibreglass tanks.
- New and replaced storage systems must contain mandatory equipment (e.g. double-walled tanks and lines, dispenser sump, fill point spill containment as shown in photo) – complete list of mandatory equipment contained in regulations.
- If a tank is to be replaced the whole system must be replaced.
- If storage system, fill point or piping is removed to be replaced, the excavation must be scrutinised for contamination.
- If contamination is present an environment site assessment must be conducted.
- Whenever repair or replacement occurs, system must be proved to be sound before use.

ENVIRONMENTAL SITE ASSESSMENT

An environmental site assessment must be conducted if:

- Contamination observed in an excavation;
- Fuel lost to the environment; or
- Petroleum detected in a groundwater monitoring well.

An environmental site assessment must define:

- the extent and level of contamination;
- the level of risk to human health and the environment;
- whether remediation of the contamination is necessary.

An environmental site assessment report must be provided to the Director EPA.

While an environmental site assessment is being carried out, potential purchasers must be notified of the contamination.

An environmental site assessment must be conducted if:

- Contamination is observed in an excavation when a storage system, piping or fill point are removed for repair;
- Fuel has been lost to the environment (as detected during loss monitoring); or
- Petroleum is detected in a groundwater monitoring well.

An environmental site assessment must define:

- the extent and level of contamination;
- the level of risk to human health and the environment associated with the contamination;
- whether remediation of the contamination is necessary.

A report on the environmental site assessment must be provided to the Director EPA.

While an environmental site assessment is being carried out, potential purchasers must be notified of the contamination so that they are aware of the issues.

GUIDELINES AND EXEMPTIONS

Guidelines

- Guidelines can be issued by EPA Board.
- Available on website.

Exemptions

- Regulations allow people to apply for exemptions from any of the requirements.
- Supply as much information as possible as to why the exemption should be granted and if possible provide alternatives that produce the same environmental outcome.
- A fee is charged for assessing the exemption request.

Guidelines

- Guidelines can be issued by the EPA Board to provide greater detail as to how certain actions must be carried out (eg sampling of the soil and groundwater to see if contamination remains on site after decommissioning) and how information must be presented (eg decommissioning assessment report)
- Will be issued over time.
- Industry input will be sought for technical aspects of the guidelines.
- Available on website.

Exemptions

- The regulations allow people to apply for exemptions from any of the requirements in the regulations as it is recognised that there are situations where the requirements may not be appropriate.
- The intent of exemptions is not to give people approval to not comply with the regulations but rather to allow them to propose alternatives or options that will ultimately have the same environmental outcomes as was intended in the regulations.
- If you apply for an exemption supply as much information as possible as to why the exemption should be granted and if possible provide alternatives that produce the same environmental outcome.
- A fee is charged for assessing the exemption request, so the more information supplied the quicker the assessment is likely to be.

ADDITIONAL INFORMATION

Web page – www.environment.tas.gov.au/upss

Under *Information for Owners and Operators* there are or will be links to:

- Brochure
- Forms
- Guidelines
- Information bulletins

Web page – www.environment.tas.gov.au/upss

Under *Information for Owners and Operators* there are or will be links to:

- The brochure
- Forms – which need to be used to provide the Director EPA with information
- Guidelines – as discussed
- Information bulletins – these are intended to give general information on aspects of the regulations (eg the information that was given today on SIRA loss monitoring will be put into an information bulletin).

QUESTION TIME

SUMMARY OF RESPONSIBILITIES

System operator's responsibilities:

- loss monitoring;
- monitoring groundwater monitoring wells.

Infrastructure Owner's responsibilities:

- ensure storage system compatible with petroleum stored;
- install mandatory equipment for new systems or when tank replaced;
- undertake loss verification if a potential loss is detected;
- install groundwater monitoring wells in a Groundwater Protection Zones;
- undertake environmental site assessment if contamination present;
- decommission storage system, including obtaining environmental assessment report.

Landowner's responsibilities:

- register UPSS.

Contacts:

Kylie Bull and Liz Canning

Phone : 6233 6518

Web : www.environment.tas.gov.au/upss

Email : upss@environment.tas.gov.au