

Leak detection systems

All sites with an active underground petroleum storage system (UPSS) must have loss monitoring and leak detection systems in place.

Why have leak detection?

A leak detection system acts as a backup in case the loss monitoring system fails to detect a leak from the UPSS.

Go to the [Guidelines for Implementing the POEO \(UPSS\) Regulation](#) for more information on alternative leak detection systems.

Types of leak detection systems

1. Groundwater monitoring wells

The preferred leak detection system is a network of wells around the UPSS.

A **duly qualified person** should assess the site and establish the number and positioning of the wells to maximize the likelihood of intercepting fuel which has leaked into groundwater.

As a minimum, there should be one well up-gradient of the UPSS and two wells down gradient.

The wells must be tested at least every six months for evidence of fuel contamination. Any odour or sheen observed in the well would likely indicate the presence of fuel in the groundwater under your site (see image 2).

The results of groundwater monitoring should be recorded in the Fuel System Operation Plan (FSOP) and kept for at least seven years after the date the tests occurred.

2. Alternative leak detection systems

Where groundwater monitoring wells are not suitable, an alternative system can be used providing it has been designed and installed by a **duly qualified person**.

For example, for a fuel tank located in an intertidal zone, it may be recommended that visual inspections of the shoreline be undertaken at specific times as an alternative to installing monitoring wells.

The results of any alternative leak detection testing according to the procedure specified by the duly qualified person must be recorded in the FSOP and kept for at least seven years after the date of the tests.

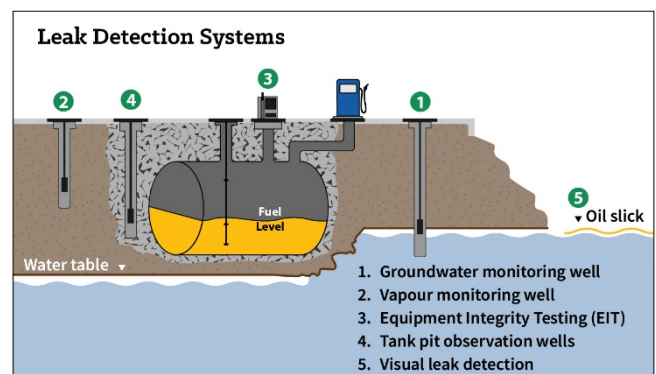


Image 1: schematic of GMWs as a leak detection system

What the law requires regarding a leak detection system

Your UPSS cannot be used unless a leak detection system is in place.

The leak detection system must be designed by a duly qualified person and comply with section 4.5.7 of the *Australian Standard – The design, installation and operation of underground petroleum storage systems (AS4897-2008)* and the Protection of the Environment Operations (Underground Petroleum Storage System) Regulation (the Regulation) Part 3 and clause 20.

What to do if the specified testing procedure identifies the presence of hydrocarbons?

If there is evidence of fuel (odours, discolouration or sheen on top of the water) you should immediately engage a duly qualified person to investigate and determine the nature and extent of the contamination.

Notify the appropriate regulatory authority (ARA) immediately and follow up this notification using a leak notification form within seven days of the leak being detected.

You may also need to implement your incident management procedure that sets out the procedures to be followed in dealing with any leaks or spills of petroleum. This procedure must be included in the FSOP for the site.

Who is a duly qualified person?

A 'duly qualified person' is a person who has competence and experience in relation to the activity that is recognised in the relevant industry, or by a peak body in the relevant industry, as appropriate for that activity.

The site operator will need to be confident that the person engaged to undertake a specific activity such as installing wells meets this criterion.

General enquiries:

Your local council. To establish which council your site is in visit: [My local council | Office of Local Government](#).

To report an incident - Environment Line: phone 131 555 (or from outside NSW phone (02) 9995 5555)

Email: UPSSREG@environment.nsw.gov.au

For information on underground petroleum storage systems (UPSS) visit <https://www.epa.nsw.gov.au/your-environment/contaminated-land/upss>



Image 2: groundwater monitoring showing fuel contamination in the groundwater

Photos

Image 1: schematic of GMWs as a leak detection system; Photo: EPA supplied

Image 2: groundwater monitoring showing fuel contamination in the groundwater; Photo: EPA supplied

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