
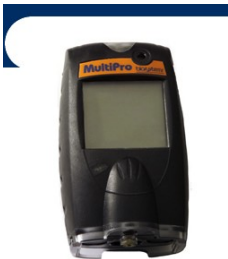





## ATTENTION!

- |                             |                             |                       |
|-----------------------------|-----------------------------|-----------------------|
| * Safety / Terminal Manager | * Plant / Operation Manager | * Project Manager     |
| * Process / Depot Engineer  | * Environmental Engineer    | * Engineering Manager |

## Hydrocarbon Leak Monitoring in UPSS (0-100 % LEL)

| Flammable (100% LEL)                                   | Ground Water Contamination                               | Soil Contamination   |
|--|--|--|
| Production / Processing Plants                         | Storage Tanks, Fuel handling                             | Fuel Blending Plants                                       |
| Transportation of I                                    | Dispensing Terminals, handling                           | Meet OH&S / EPA guidelines                                 |
| Ethanol: LEL 3.3%, UEL: 19%,<br>Flash Point 16.6 Deg C | Skin, eye, respiratory track irritation,<br>heart damage | May cause central nervous system<br>depression - Flammable |

|   |  |
|---|--|
| <p><b>Petroleum Hydrocarbon Sensor/Transmitter:</b></p> <ul style="list-style-type: none"> <li>• Continuous monitoring of Hydro-carbon in 0-100 % LEL</li> <li>• Hazardous area certified Zone-1Ex-Proof</li> <li>• Catalytic combustion S.S sensor</li> <li>• 4-20 mA analogue output for PLC, SCADA, PolyGard Gas Controller</li> <li>• For monitoring in ambient air, ground water contamination / soil contamination to meet EPA guidelines</li> </ul>                                      |   |
| <p><b>Multi Gas Monitor ToxiPro (confined space):</b></p> <ul style="list-style-type: none"> <li>• Portable multi gas alarm for confined space application</li> <li>• Gases: LEL, O2, Duo-Tox (CO, H2S)</li> <li>• Smart, pre-calibrated plug-in and play sensors</li> <li>• One button operation and auto-cal</li> <li>• Warning, danger, STEL &amp; TWA Alarms</li> <li>• Options: Alkaline or Li-Ion batteries, slip on pump, confined space kit, data-logging, vibrating alarm</li> </ul>   |  |
| <p><b>Cannonball3 Continuous Sample Draw Type:</b></p> <ul style="list-style-type: none"> <li>• Gases: Hydrocarbon (LEL or PPM), O2, CO, H2S, SO2, Cl2, NH3, ClO2</li> <li>• Built-in strong sample draw pump</li> <li>• Remote sampling probe with 3 M tubing (quick connect)</li> <li>• Option Alkaline battery (24 hours) or rechargeable NiMH (16 hours)</li> <li>• Back-lit graphic display</li> <li>• Excellent for Inert Atmospheres with dilution monitoring using dual pump</li> </ul> |  |

|   |   |
|---|---|
| <p><b>ToxiVision Single Gas Smart Detector:</b></p> <ul style="list-style-type: none"> <li>• For gases like Ethanol, Hydrocarbon (LEL %) and toxic / oxygen deficiency</li> <li>• Built in rugged alarm and vibrating alarm</li> <li>• Plug-in, play, smart toxic sensors</li> <li>• One button operation, back-lit, loud alarm</li> <li>• Choice of Alkaline or Re-chargeable batteries</li> </ul>     |    |
| <p><b>Stand Alone Gas Alarm/Control Modules:</b></p> <ul style="list-style-type: none"> <li>• Integral Gas Sensors (Remote Gas Sensors), DIN Rail mounting</li> <li>• Gases: Ethanol, Hydrocarbon and Toxic Gases</li> <li>• Integral display , keypad</li> <li>• 4-20 mA Ouput, 4 +1 relays</li> <li>• Stand alone operation for fan logic control or alarms or shutting off solenid valves</li> </ul> |  |

## FAX RESPONSE SHEET ( FAX NO. 02 9869 1342 )

Or e-mail: [gasalarm@alvi.com.au](mailto:gasalarm@alvi.com.au) or phone 02-9869 1342

**PLEASE SEND ME DETAILS ON:**

- Single Gas Portable Gas Instrument for % LEL, % Vol , Natural Gas, Combustible Gases, Toxic Gases (Specify -----), Oxygen Deficiency
- Portable Multi Gas Alarm for confined space application (Please specific the gas types: -----  
-----)
- Fixed Gas Sensor/Transmitters with 4-20 mA outputs, Flammable, Toxic (Hazardous areas or safe areas)
- Gas Alarm Controllers: 1 – 24 channel (upto 96 channel with Digital Controllers)
- **OTHER PRODUCTS:**
  - Portable Laboratory / Field Instrument for pH, Cond, dissolved oxygen
  - Laboratory analyser for pH, Cond., DO
  - Process analyser for pH, Cond, DO
  - Signal converters / isolators
  - Temperature transmitters
  - 4-20 mA loop Indicator (Ex certified)

**NAME:**.....

**DEPARTMENT:**.....

**COMPANY:**.....

**ADDRESS:**.....

**SUBURB:**.....

**STATE:**..... **POST CODE:**.....

**PHONE:**..... **FAX:**.....

**E-MAIL:**.....**INDUSTRY TYPE:**.....

### Monitoring for Vapors in the Soil (US-EPA)

..1.1How does the leak detection method work?

This method samples vapors in the soil gas surrounding the UST. Leaked petroleum produces vapors that can be detected in the soil gas. The regulations describe several requirements for using this leak detection method. For example, this method requires using porous soils in the backfill and locating the monitoring devices in these porous soils near the UST system.

Features of vapor monitoring systems are:

- Vapor monitoring senses or measures "fumes" from leaked product in the soil around the tank to determine if the tank is leaking.
- Fully automated vapor monitoring systems have permanently installed equipment to continuously or periodically gather and analyze vapor samples and respond to a release with a visual or audible alarm.
- Manually operated vapor monitoring systems range from equipment that immediately analyzes a gathered vapor sample to devices that gather a sample that must be sent to a laboratory for analysis. Monitoring results from manual systems are generally less accurate than those from automated systems. Manual systems must be used at least once a month to monitor a site.
- All vapor monitoring devices should be periodically calibrated according to the manufacturer's instructions to ensure that they are properly responding.
- Before installation, a site assessment is necessary to determine the soil type, groundwater depth and flow direction, and the general geology of the site. This can only be done by a trained professional.
- The number of wells and their placement is very important. Only an experienced contractor can properly design and construct an effective monitoring well system. Vapor monitoring requires the installation of monitoring wells within the tank backfill. A minimum of two wells is recommended for a single tank excavation. Three or more wells are recommended for an excavation with two or more tanks. Some state and local agencies have developed regulations for monitoring well placement.

..1.2What are the regulatory requirements?

- The UST backfill must be sand, gravel or another material that will allow the vapors to easily move to the monitor.
- The backfill should be clean enough that previous contamination does not interfere with the detection of a current leak.
- The substance stored in the UST must vaporize easily so that the vapor monitor can detect a release.
- High ground water, excessive rain, or other sources of moisture must not interfere with the operation of vapor monitoring for more than 30 consecutive days.
- Monitoring wells must be secured and clearly marked.

..1.3Will it work at your site?

Before installing a vapor monitoring system, a site assessment must be done to determine whether vapor monitoring is appropriate at the site. A site assessment usually includes at least a determination of the groundwater level, background contamination, stored product type, and soil type. This assessment can only be done by a trained professional.

..1.4Will you be in compliance?

When installed and operated according to the manufacturer's instructions, vapor monitoring meets the federal leak detection requirements for new and existing USTs. Operation of a vapor monitoring system at least once each month fulfills the requirements for the life of the tank. Vapor monitoring can also be installed to detect leaks from piping.

## 1. Monitoring for Liquids on the Groundwater

..1.5How does the leak detection method work?

This method monitors the groundwater table near an UST for the presence of released free product on the water table. Monitoring wells near the UST are checked frequently to see if petroleum can be detected. The regulations describe several requirements for the use of this method. For example, this method cannot be used if the water table is more than 20 feet below the surface of the ground.

Features of groundwater monitoring are:

- Groundwater monitoring involves the use of permanent monitoring wells placed close to the UST. The wells are checked at least monthly for the presence of product that has leaked from the UST and is floating on the groundwater surface.
- The two main components of a groundwater monitoring system are the monitoring well (typically a well of 2-4 inches in diameter) and the monitoring device.
- Detection devices may be permanently installed in the well for automatic, continuous measurements for leaked product.
- Detection devices are also available in manual form. Manual devices range from a bailer (used to collect a liquid sample for visual inspection) to a device that can be inserted into the well to electronically indicate the presence of leaked product. Manual devices must be operated at least once a month.
- Before installation, a site assessment is necessary to determine the soil type, groundwater depth and flow direction, and the general geology of the site. This assessment can only be done by a trained professional.
- The number of wells and their placement is very important. Only an experienced contractor can properly design and construct an effective monitoring well system. A minimum of two wells is recommended for a single tank excavation. Three or more wells are recommended for an excavation with two or more tanks. Some state and local agencies have developed regulations for monitoring well placement.

#### ..1.6What are the regulatory requirements?

- Groundwater monitoring can only be used if the stored substance does not easily mix with water and floats on top of water.
- If groundwater monitoring is to be the sole method of leak detection, the groundwater must not be more than 20 feet below the surface, and the soil between the well and the UST must be sand, gravel or other coarse materials.
- Monitoring wells must be properly designed and sealed to keep them from becoming contaminated from outside sources. The wells must also be clearly marked and secured.
- Wells should be placed in the UST backfill so that they can detect a leak as quickly as possible.
- Product detection devices must be able to detect one-eighth inch or less of leaked product on top of the groundwater.

#### ..1.7Will it work at your site?

In general, groundwater monitoring works best at UST sites where:

- Monitoring wells are installed in the tank backfill; and
- There are no previous releases of product that would falsely indicate a current release.

A professionally conducted site assessment is critical for determining these site-specific conditions.

#### ..1.8Will you be in compliance?

When installed and operated according to the manufacturer's instructions, a groundwater monitoring system meets the federal leak detection requirements for new and existing USTs. Operation of a groundwater monitoring system at least once each month fulfills the requirements for the life of a tank. Groundwater monitoring can also be used to detect leaks in piping.