



## **Ionics Agar Environmental Ltd.**

### **LEAKWISE® OIL ON WATER MONITORING SYSTEMS**

#### **APPLICATION NOTE #1**

#### **ABOVE GROUND OIL STORAGE TANKS**

Users: Oil Refineries, Oil Terminals, Power Utilities, Petrochemical Industries

#### **Leak/Spill Detection in a Dyke's Sump of an Oil Storage Tank**

Drainage canals around tanks' dykes are used for collecting oil and/or stormwater which may carry oil sheens (resulting from leaking pipes, valves, pumps etc.) into collecting sumps, separators or interceptors. These sumps, which can be wet or dry, need to be continuously monitored for the following reasons:

- a. Environmental Regulations.
- b. Fire Fighting Safety Regulations.
- c. Day & Night Overflow Detection.
- d. Identification of Leaking Tanks and Equipment.

A Leakwise® ID-223 oil sheen detector, which can be installed in wet and dry sumps, is used for setting off an alarm in the event of oil detection in sumps around the tanks.

#### **Reduction of Water Treatment Costs**

Due to various environmental regulations, tank farms have to treat stormwater before discharge into the sea, river or public drainage system. An ID-223 oil sheen detector installed in the collecting sump will continuously monitor its water outlet. If water is detected, it can be diverted into retention tanks or directly discharged into the sea, a river, or public drainage. If oily water is detected, an alarm will be set off and the ID-223 oil sheen detector will shut the water outlet valve. The oily water could then be manually or automatically diverted into an API separator or any other oily water treatment system. This operation will reduce the load from the treatment system and cut treatment costs.



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#### **Monitoring & Control of Oil/Water Separators**

In some tank farms, water is collected from the tank area and sent to a local separator or interceptor where oil is separated by gravity and water is discharged directly into the sea, a river, or public drainage. In other locations, water from the tank area has to be treated in an API separator.

An ID-223 oil sheen detector installed at the separator/interceptor outlet will continuously monitor the discharged water and ensure that the separation is running smoothly, without any upsets.

An ID-225 oil layer thickness monitor installed in the separator/interceptor will continuously monitor the thickness of the accumulated oil layer and control a skimming pump or "inform" the operator when to skim and thus bring substantial saving in the treatment costs.

#### **Leak Detection from bottom of Tanks by Groundwater Monitoring**

Even sophisticated tank gauging systems are not capable of monitoring small leaks of oil from the bottoms of tanks. This unnoticed oil creates a major fire and explosion hazard as well as groundwater contamination. Groundwater monitoring can in many cases be the only method of detecting leaks from the bottoms of tanks.

An ID-221 oil sheen detector installed in monitoring wells around the tank will give an "early warning" on hydrocarbon seepage into the groundwater.

If groundwater remediation is done, an ID-225 oil layer thickness monitor can continuously monitor the amount of oil and improve the remediation process.

#### **Monitoring Water Drainage from Floating Roofs**

(See application note #2)

An ID-223 oil sheen detector can be installed at the outlet of the floating roof water drainage flexible pipe. This detector can be used to;

- a. Detect leaks due to pinholes/cracks in water drainage flexible pipe.
- b. Detect spills due to oil run over the floating roof.
- c. Detect clogs in water drainage flexible pipe.