



OIL SPILL DETECTION SYSTEM

AUTOMATED NETWORK OF OIL DETECTING SENSORS FOR REAL TIME SPILL MONITORING

- 🔥 Sure
- 🔥 Smart
- 🔥 Simple

The Difference Between Small Accidents & Major Disasters

- 🔥 Prevent Disasters
- 🔥 Save Time & Money
- 🔥 Reliable, Cost Effective System

APPLICATION

Monitoring and detecting oil spills as they occur in real-time accelerates response time - thus substantially reducing cleanup/remediation costs, and limiting damage to the environment. Building on 50 years of sensor/systems innovation, InterOcean has developed the optimum solution for this requirement. The *Slick Sleuth*™ Oil Spill Detection System is a highly effective, cost-saving system, which is easy to install and requires no maintenance. Because the oil detection sensor is mounted above the water, maintenance and downtime are virtually eliminated. There is no marine fouling, leaking, exposure to ships, lost moorings, or other liabilities often associated with buoys and in-water sensor packages.

SYSTEM DESCRIPTION

The remote oil spill detection system is comprised of four subsystems: optical sensor, wireless telemetry package, power supply, and base station (laptop with *Slick Sleuth*™ software). Sensor, communications, and power are compactly integrated in a single NEMA 4X enclosure, with the option to repopulate the optical sensor for independent mounting. When installed separately, the sensor resides in its own robust housing for installation nearby, under a pier for example, while the NEMA box can be installed where it receives clear sunlight and radio signal. In either configuration, the downward facing optical transmitter pulses light in a columnated beam that “excites” the water’s surface. The resulting fluorescence is detected using multiple filters. If an event is detected, a signal is transmitted to the base station laptop where the resulting alarm alerts users to the type and location of the incident- facilitating an immediate and appropriate response. InterOcean’s *Slick Sleuth*™ Software graphically pinpoints the location of the spill, and automatically denotes the type of fluid spilled by matching the frequency of the fluid detected within the known range of spectral signatures unique to differing fuels and pollutants. InterOcean has engineered this system for simplicity, consistency, efficiency, and cost savings!



Oil Sensor Integrated w/Power-Comm. Package

Oil Detection Sensor in Stand Alone Housing



Sensor Features

- Mounted ABOVE Water Level
- No Fouling, No Water, No Problem!
- 24 Hours—All Weather, Night or Daylight
- Highly Sensitive Detection of Fluorescence
- User-Selected Sampling Frequencies
- Easy to Use & Install
- Automated, Plug n’ Play, Turnkey System
- Mounts Under Pier, or Integrated in NEMA*
- 4X Box w/Power & Communications system
- ***Available in Explosion-Proof Enclosures

For Hazardous Type I Locations

Base Station

- Standard Laptop or PC
- Windows Compatible
- InterOcean’s *Slick Sleuth*™ Software
- Pinpoints Location & Type of Spill
- Graphic & Tabular Display of Status & Events
- Continuous Printout &/or Data Logging (Optional)
- Fully Automated, User Friendly
- 2-Way Radio Query/Control
- Adaptable Sampling Rates & Frequencies

Communications

- Real-Time Data Telemetry Using:
 - Non Licensed Spread Spectrum Radio
 - Or Cellular
 - Or Telephone
 - Or Satellite
- 1 –10 Mile Radio Range
- Bi-Directional Communications
- Laptop Display of Radio Diagnostics/Status

Power

- Low Power Requirements
- Automated Solar Cell Power System w/Long-Life Rechargeable Battery
- Compact & Lightweight Integrated Package
- Uninterruptable Power Supply (Optional)



InterOcean systems, inc.

WWW.INTEROCEANSYSTEMS.COM sales@interoceansystems.com
 3540 Aero Ct. San Diego, CA 92123 USA tel(858) 565 8400 fax(858)268 9695



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NETWORK ARRAY WITH BASE STATION

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The Slick Sleuth Remote Detection Stations (SS200RDS) are used with the Slick Sleuth Base Station Computer & Application Software for stand-alone network applications. This differs from the Slick Sleuth Autonomous Detection Stations (SS220ADS) where the sensors are integrated into a facility's existing central control & monitoring systems such as a PLC or SCADA.

A typical Slick Sleuth Remote Detection Station installation includes multiple Slick Sleuth Remote Detection Stations controlled by the Base Station.

The Base Station provides the following primary features:

- Controls Remote Detection Stations
- Coordinates 2-way communications between Remote Detection Stations and the Base Station
- Collects data from each Remote Detection Station and provides data logging functions
- Displays data and status of each Remote Detection Station in graphic and tabular formats
- Outputs alarm conditions to provide remote alert notifications

The Base Station consist of a dedicated computer running Slick Sleuth proprietary application software on Microsoft Windows. The Base Station communicates with each Remote Detection Station through either hardwired or wireless communication links. Communication can be through a bus-compatible serial interface such as an RS-232, RS-485 serial interface, a wireless network or through an internet connection.

Station #	Station Name	Detection Status	Date	Time	Next Sample	Reading	Detection Threshold	Sensor Status	Power Status
1	Broadway Pier	OK	04/09/2009	17:46:30	17:47:30	7000	2229	OK	OK
2	TAMT	OK	04/09/2009	17:46:30	17:47:30	7000	3000	OK	OK
3	South Bay PVR	OK	04/09/2009	17:46:30	17:47:30	7000	3000	OK	OK

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NETWORK ARRAY WITH BASE STATION

The figure below is a conceptual illustration of one possible Slick Sleuth Remote Detection Station (SS200RDS) configuration. There are numerous possible configurations. The various options and alternatives include:

- Source Power - AC Source Power, DC Plant Power, DC Solar Power
- Telemetry - Hardwire, Wi-Fi, Radio RF, Cellular GSM/GPRS
- Alarm Notification - SMS Text Messaging (Standard) and/or Other Application Specific
- Stationary / Fixed Installation or Flotation Platform Installations (Slick Guard™)

A network can be configured and deployed combining these options and alternatives.

In considering the various telemetry alternatives it is important to know: the distances between each Remote Detection Station and the Base Station, the topography of the installation site (natural or man-made obstacles and/or obstructions between the Remote Detection Stations and the Base Station), the local licensing requirements for wireless transmissions (authorized frequencies, transmission power, etc.), availability of cellular service providers and internet service providers when considering GSM/GSRP cellular communications.

