



# Sludge Blanket Detection

## Fixed Point Detection of Sludge/Water Interface

APPLICATION NOTE

### MONITORING TECHNIQUE

Infrared Light Attenuation

### BENEFITS

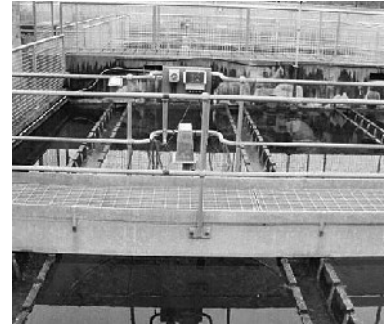
Pollution Prevention  
High Blanket Warning  
Controlled Auto-Desludging

### PRODUCT

8100 Monitor  
8200 Monitor  
Soli-Tech 20 Sensor  
Infrared Sensors

### ASSOCIATED MEASUREMENTS

Sludge Blanket Monitoring  
Sludge Density

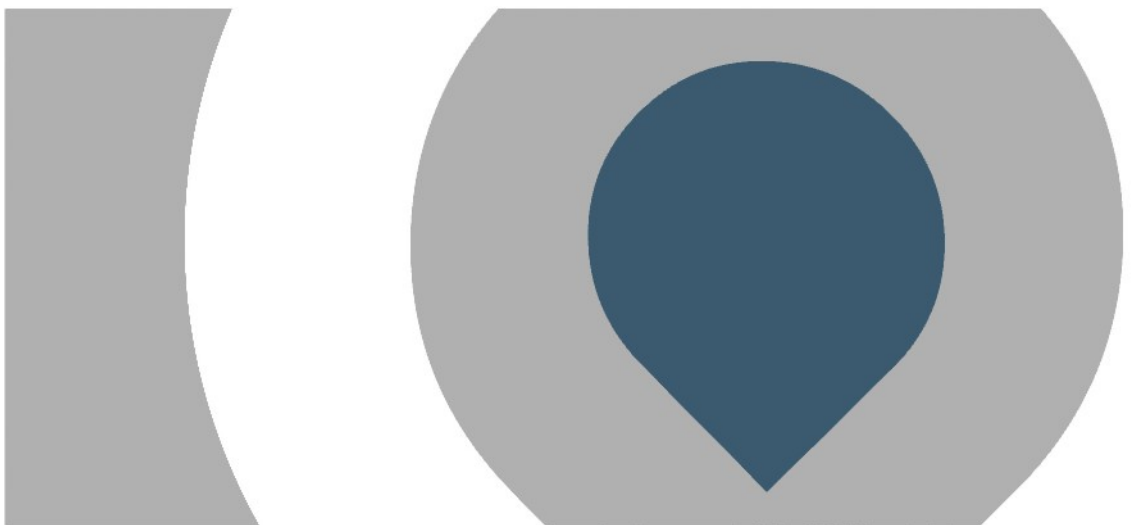


A common requirement in the operation of sewage, wastewater and water treatment works is to find the location of the interface between the high solids region of a settlement tank, picket fence thickener or clarifier and the relatively lower solids region above.

Detecting the presence of the Sludge Blanket at a fixed level is one of the simplest ways of carrying out this control measurement. The sensor is installed at a certain height and when the sludge blanket reaches it, an alarm is raised. The alarm can be used to start or stop a pump, change the position of a bell mouth, divert flow or call an operator to the site to investigate the problem.

Use of a dual channel system allows the user to have a two stage control process, which can for example control a pump at the first level and call out an engineer at a higher level.

An instrument measuring 24 hours a day has great advantages over manually taken measurements when an incident occurs or when the site operator has sufficient time. The instrument will react whenever a problem occurs, during the night, at weekends and when the operator is occupied with other tasks.



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### Pre-Purchase Considerations

To ensure reliable operation of a Sludge Blanket Detector care must be taken to ensure that the correct sensing technique and range sensor is selected. Individual product datasheets and your local Partech Sales Engineer will help with this selection.

The principle areas to consider are; type of solids or process, thickness of the sludge, clarity of the supernatant and the definition of the interface.

The size and shape of the particles in the blanket will affect the measurement being made. For infrared sensors a thick blanket will need a narrow sensor gap while a thin blanket will need a wider gap. Particle size will also have an affect on the sensor selection.

Another process parameter to consider is the settling characteristics of the sludge. If the interface that is produced is very well defined with thick sludge and clear supernatant the measurement is relatively straight forward. However when the interface becomes diffused then much greater care is required with the selection of the measuring device.

In addition to these process considerations, the physical features of the tank and site must be taken into account. The size and shape of the tank, the presence of rotating bridges, scum boards and scrapers, will all affect the product selection.

In general on a circular tank the Sludge Blanket Monitor should be located half to two-thirds of the way from the centre to the outside of the tank. On half bridge scrapers where the bridge and scraper rotate together round the tank the sensor should be on the leading edge, ahead of disturbance caused by the scraper. Once the instrument has been installed, the signal must be transmitted to the control system. A rotating bridge can cause problems if there are insufficient slip rings to allow hard wiring. If this is the case, then Partech can offer low power radio telemetry options.

### Operational Considerations

Once the system is up and running it is important that the sensor is kept clean. The infrared sensors will need routine cleaning, typically every fortnight. This is a very quick and simple process and will easily be accommodated in any good housekeeping procedure.

### Partech's Experience

Partech have been designing, promoting and maintaining Sludge Blanket Detectors for over 40 years. This experience combined with a product range that includes portable, fixed point and continuous monitors using Infrared and Sonar technologies makes us the leading supplier in this field.

We are happy to review your application in detail and will conduct a full site survey to ensure that you can purchase the correct instrument, first time. Please call us so that we can help.



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