

4 9.0122
D
DETERMINATION

5 10.811
E
EVALUATION

20 40.078
T
TRANSPORTATION

5 10.811
E
EXPLANATION

3 6.941
C
CHARACTERISATION

20 40.078
T
TRANSFORMATION

5 10.811
E
EXPERIMENTATION

4 9.0122
D
DEDICATION

TANK LEAK DETECTION SERVICES

DETECTING TANK SYSTEM LEAKS

19

39.098

PROTECT

S

SOLUTION

COMMERCIAL AND

ENVIRONMENTAL INTERESTS

5

10.811

E

EXPLANATION

Confidence in the integrity of your storage tank system is critical to your operation from both a commercial and an environmental standpoint. The SGS-MTC leak detection service gives you that confidence.

Above ground storage tanks are a key part of any distribution operation. From a commercial perspective, product leakage results in a direct loss of revenue. From an environmental viewpoint, product leakage can lead to contamination of the soil and watercourses resulting in punitive action from regulators and negative publicity. Whilst there are a number of techniques available in the market place for qualitatively 'identifying' leaks, tank entry has often been seen as the only real choice.

SGS, working in conjunction with Mass Technology Corporation (MTC), is now able to offer a quantitative tank leak detection system which does not require tank entry, thereby dramatically reducing costs. The system has also been subject to independent third party evaluation.

Used as an ad-hoc service to confirm a suspect tank, or as part of your Risk Based Maintenance programme, this leak detection system provides you with the information necessary to efficiently and effectively manage your assets.

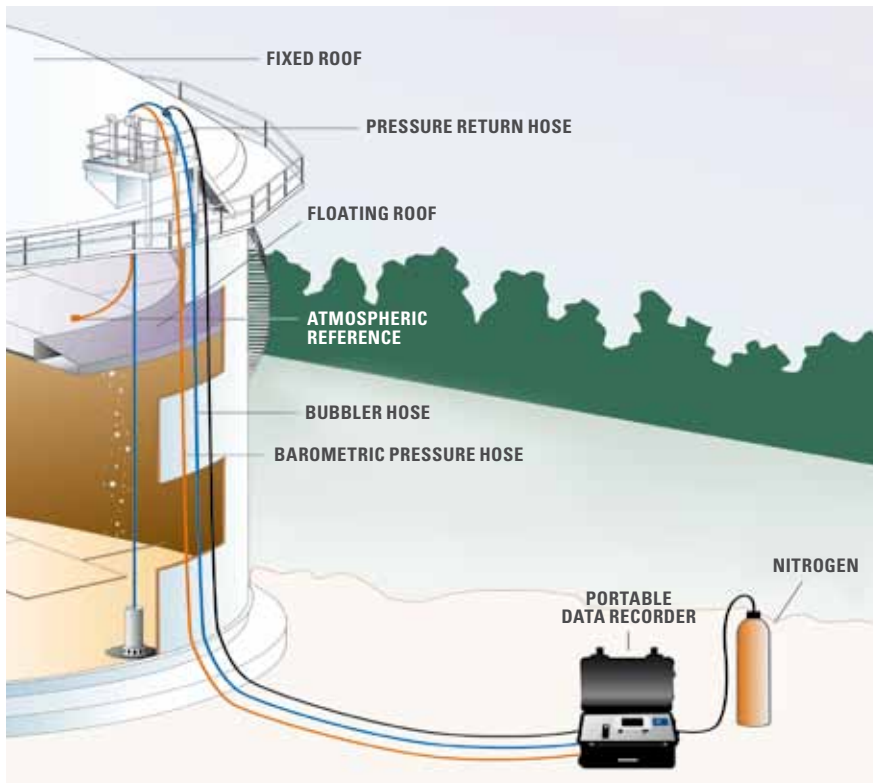
The SGS-MTC tank leak detection system monitors the mass of liquid in the tank over a period of time in order to identify the presence and magnitude of any leakage. Liquid mass is derived from the head pressure at the bottom of the tank. This is measured using a differential pressure transmitter, which



is located along with the PLC outside of the tank. The pressure head at the base of the tank is transferred to the transmitter using a nitrogen bubbler system. Because the system monitors the pressure developed by the column of liquid, the effect of temperature on the liquid is compensated for. However, temperature effects on the tank shell do still impact on the measurement process and it is through extensive testing and data evaluation that this, and other effects, have been accounted for. Test durations are dependant upon the size of

the tank being tested and vary from 2 up to 5 days for the largest tanks.

The sensitivity of the system is impressive, detecting level changes of the order of 0.004mm per hour. This equates to a leakage rate of less than 3 litres per hour from a 30 metre diameter tank, a value that has been independently verified by a third party in the US.



Used as part of a Risk Based Maintenance programme, this system has the potential to defer the need for hazardous and costly entry into a tank for inspection purposes. Currently, after a specific period of time, a tank will be taken out of service, cleaned and then inspected for potential leak sources. In many instances no such sources are found, yet significant costs have been incurred and people exposed to potential hazards. The SGS-MTC system replaces automatic tank entry with a periodic 'health check'. Tank entry is only triggered when a health check identifies that the tank is leaking, thereby eliminating unnecessary spend and allowing the maintenance budget to be focused where it is actually needed.

In cases where a leak has been observed, but the offending tank cannot be identified, this system enables the operator to find the leaking tank without having to take them all out of service to do so. Unnecessary expense is eliminated and the risk to personnel is minimised as only leaking tanks will be entered.

Advantages

- Accuracy unaffected by fluid temperature changes
- Minimal tank preparation
- No tank stabilisation time
- Prompt, conclusive and quantitative results
- No capital investment by tank owner
- Not affected by water at tank bottom or product stratification
- Not influenced by roof or tank bottom structure
- Tests any viscous fluid at routine operating conditions and capacity

Can be used to

- Supplement alternative inspection plans for API 653
- Evaluate tank bottom integrity after internal inspections
- Perform periodic tank bottom assessments in accordance with API 653
- Classify and prioritise tanks for future repairs
- Document tank bottom integrity in conjunction with a hydrostatic test
- Determine the existence of a suspected leak
- Comply with or supplement company policies for leak detection programmes

WHY SGS?

SGS is the world's leading inspection, verification, testing and certification company. Recognised as the global benchmark for quality and integrity, we employ over 64 000 people and operate a network of more than 1 250 offices and laboratories around the world. We are constantly looking beyond customers' and society's expectations in order to deliver market leading services wherever they are needed.

We provide innovative services and solutions for every part of the oil, gas and chemicals industry. Our global network of offices and laboratories and our dedicated team allow us to respond to your needs, when and where they occur. Our reputation for independence, excellence and innovation have established us as the market leaders in providing services that improve efficiency, reduce risk and deliver competitive advantage for you.

FOR MORE INFORMATION ABOUT LEAK DETECTION SERVICES FROM SGS, CONTACT US AT OGC@SGS.COM OR VISIT WWW.SGS.COM/OGC

WWW.SGS.COM