

WAPUG CONFERENCE 1988 - BOURNEMOUTH

Proposed Paper on
Accuracy of Sewer Flow Verification Surveys

Sewer Flow Monitoring Surveys are an important element in the rehabilitation procedure and vital in relation to WASSP model verification.

Improvements and developments to the sewerage network, sometimes involving great capital expense, are based on the WASSP model prediction. These predictions are dependent on the accuracy with which the WASSP model hydraulically represents the operational sewerage network, hence dependant to a great extent on the accuracy of the flow verification survey.

This paper aims to discuss the accuracy of flow verification surveys, placing particular emphasis on the equipment and its limitations, and the methodology in its use. The paper will further propose modifications to operational on-site procedure which will improve the quality and accuracy of the all important recorded data.

DISCUSSION NOTES

Technical Session 2
Paper 2.3 Discussion

T.Silkstone ; Bournemouth

How do monitors respond to heavy surcharge ?

K.McGregor ; Hydroscon Ltd

A standard monitor will record up to a maximum of 2m surcharge. If the logger-box is submerged, then as well as possibly damaging the logger, the atmospheric pressure reference point will be lost and there will therefore be no depth reading.

T.Silkstone

You are only measuring flow-components, i.e. velocity and depth. Is there a need for more accuracy ?

K.McGregor

Certainly more accurate instrumentation will be required. The equipment must be maintenance-free, have no drift and be independent of suspended solids.

D.Beale ; Howard Humphries

How accurate is the single-point measurement compared to the average of the velocity-profile across the pipe ? Does the ratio of point : mean vary in different sections ?

K.McGregor

There is a lot of evidence to prove that in "good" locations, monitors will read to within 4-6% irrespective of section. I must emphasise that "good" locations only are used.

C. Jefferies ; Dundee College of Technology

Instruments drift, and there are other inaccuracies. How do you account for this ?

K. McGregor

All monitors are calibrated before installation. It is easy to check the depth calibration simply by measuring the depth of flow with a scale rule. If there is too much error, then the monitor is changed. Velocity is much more difficult to check admittedly ; install only in "good" sites to achieve the accuracy I have previously mentioned.

J. Packman ; IH

Do the scattergraphs pick up turbulence in the flow ?

K. McGregor

Scattergraphs are principally used to indicate the quality of the results - an experienced person can detect turbulence from the results, it is true.

F. Deakin ; Northumbrian Water

What about installing turbine meters in the flow and comparing with the Doppler results ?

K. McGregor

I agree this would be a good way of checking the monitors.