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Title – Max Hydrophone distance

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(Issue 1)

What is the max distance apart hydrophones should be on large diameter pipes for successful correlation

The Hydrophone operation guide gives basic information as follows -

Urban Network

Pipe Material	Accelerometers	Hydrophones
Iron, Steel, Copper	400 metres	800 - 1200 metres
Lead, A/C, Concrete	300 metres	600 - 800 metres
Plastic	50 - 100 metres	400 - 500 metres

Trunk Mains

Pipe Material	Accelerometers	Hydrophones
Iron, Steel	500 - 800 metres	2000 - 3000 + metres
A/C, Concrete	400 - 600 metres	1000 - 2500 + metres
Plastic	100 - 200 metres	500 - 1500 + metres

there are many factors which affect sound travel in pipes (see below) so it is not possible to provide any more definitive distance guidance. Particularly with Hydrophones you are likely to be constrained by the availability of suitable connection points which in many cases dictate the distance.

Factors producing good quality leak noise	Factors producing poor quality leak noise
High water pressure	Low water pressure
Hard backfill	Soft backfill
Small rupture/leak	Large leaks / split pipes
Clean pipes	Internally corroded or encrusted pipes
Metal pipes	Soft lined or plastic pipes
Small diameter pipes	Large diameter pipes

Document History:

Edition	Date of Issue	Modification	Notes
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