



Acoustic technology development in gas E/R

The start of the story.....How we locate gas escapes today .

- SLG
- Bar hole.....gas go seekers
- Excavate
- Bar hole...gas go seekers
- Excavate
- Reinstate
- Remove SLG..
- Issues....gas travels
- Impacts of all this activity...Disruption to customers, inherent H/S/E risks , costly

What we set out to do to reduce these negative impacts with the support of Ogem innovation funding.....

Benchmark the options

- Water sector used sound to detect water escapes
- Sewage sector used high def cctv system to see faults
- Core Vac excavation techniques already used to minimise excavations

The challenge was could these 3 separate process and techniques be brought together to create something that would fulfil our 3 aims

- Reduce H/S/E risks and impacts
- Reduce disruption to our customers
- Reduce our unit cost

What were the particular challenges we faced...

- Could work be done on a gas main through a 600mm cored excavation
- How would we place the acoustic unit inside the gas main
- Would the acoustic system be sensitive enough to pick up gas escapes

What methodology did we adopt...

- Locate and bring together the best available suppliers and equipment .
- Create a working group. Engineers ,HSE ,Operational managers
- Consult and inform other stakeholders such as Highways
- Learn to walk before running.....

We have a gas escape in acoustic world...



Core and vac in operation



Above ground tooling development...installing the base



Acoustic cctv insertion



Acoustic cctv survey



Acoustic and digital displays



Above ground collar repair



Above ground collar repair....through a 450mm core



Above ground tooling development of further options



Repair complete.....



What do the customers see ...figure of 8 option



What's the feedback been to date....

- From our customer`s
- The wider stakeholder`s
- From our employee`s

Challenges from today onwards

Behavioural

- Embedding a change in culture from the 1st choice is to call for the excavator to excavating is the last option in terms of our people`s safety ,our customers and our costs .

Technical

- To further develop the data base of sounds we hear in our assets to enhance the sounds we want to actually hear
- A unit that can detect escapes in larger mains
- An untethered unit that we can operate remotely from the surface
- Above ground tooling and fittings development