

## HTC provide cost-effective solution to pipeline cleaning

*Whilst many Large Diameter Trunk Mains (LDTMs) supplying water to treatment works and water distribution systems supplying communities have been in operation for over one hundred years, they have never been properly cleaned.*

Stringent water quality regulations have meant that billions of pounds have been invested in upgrading of water treatment works since privatisation in 1989. But, however much is spent on upgrading and the building of new water treatment works, if the distribution asset is not improved at the same time, the customer will receive no benefit in improved water quality from source.

Traditional cleaning methods employed for cleaning water mains have been limited to flushing and high pressure water-jetting; however there are many negative aspects to these operations:

- Limited lengths
- Multiple excavations
- Asset damage
- Disposal of huge quantities of dirty water
- Time-consuming
- Low productivity
- Ineffective results
- Cost

This has again led to reluctance to expend capital investment for the above reasons.

There is now a new, sustainable, cost effective method for manganese removal applying pigging experience and technology HTCMS has learned over the previous 30 years in the oil and gas industry.

Whether your assets are LDTMs or water distribution mains, HTCMS have the solution to providing a new, sustainable solution using our Pnuclean™ cleaning system.

HTCMS has developed new pigs and new techniques to cost-effectively overcome all the obstacles in the way of capital expenditure and asset improvement.

Patented Diverters, combined with the Pnuclean™ pigging system enable highly productive, affordable means to pipeline cleaning and manganese removal. Diverters become an integral part of the asset, meaning that repeat

excavation, saving time and money as well as reducing disruption to the public highway.

The use of different pig types, developed during trials and ongoing works, means that whatever the lining material consists of, we have a solution to suit that will not damage your asset.

Over 90km of water distribution mains have been cleaned by HTCMS in partnership with Balfour Beatty Utility Solutions for Yorkshire Water in the last eighteen months using the Pnuclean™ System.

We are able to clean individual lengths of LDTMs up to 72" diameter and lengths up to 15km using the Pnuclean™ system of cleaning. Innovative new pig types have been developed and trailed to produce a system that will clean effectively without damaging the internal lining of the pipeline.

Pnuclean™ cleaning of LDTMs supplying water from WTW will increase the quality of water received and reduce the effort required using alternative methods, is less disruptive to the environment and reduces risk to damaging the internal lining of the main. The number of excavations is dramatically reduced.

Cleaning of LDTMs supplying WTW will reduce your capital expenditure or increase cleaning

productivity by 60-70%. One water authority recently spent £1.5m cleaning 9km 36" LDTM. HTC's last cleaning contract together with BBUSI involved cleaning 7.9km of 24" LDTM for United Utilities at a final cost of £72,000 excluding enabling works. Indicative costs including enabling works are £27.00/m for Pnuclean™ pigging compared to £67.00/m for water jetting.

For the above 24" diameter LDTM four excavation were needed over 7.9km for Pnuclean operation as opposed to more than 25 excavations if water jetting was to be used. In total only 110m3 of water was used for cleaning operations that required disposal.

No cleaning residue remains in the pipe after Pnuclean operations and, using concentrated chlorinated water slugs, the main is sterilized on the final cleaning run, putting the main immediately back into service on completion of reinstatement and sampling.



	Pnuclean™	Flushing	Air Scour	Ice Pigging	Water Jetting
Asset Integrity	✓	✓	✓	✓	✗
Low Cost	✓	✓	✓	✗	✗
High Productivity	✓	✗	✗	✗	✗
Effectiveness	✓	✗	✗	✗	✓
Low Water Usage	✓	✗	✗	✗	✗