COMPARISON OF HYDRO-GEL TECHNOLOGY AND THE TRADITIONAL WATER-SUPPLY SYSTEM CLEANING TECHNOLOGIES

(This comparison is not full and it's indicative. There could be other properties which are not listed here, could not be compared or there are no sufficient data at the moment.)

Technological properties	Hydraulic cleaning							Mechanical cleaning		
	System flush through outlet or fire hydrant	Flushing with added sponge pieces	Flushing with injected compressed air	Flushing with injected, pulsating compressed air	Cleaning with added ice pieces	High pressure water jet cleaning	Chemical treatment and flushing	Cleaning with a pig	Cleaning with sponge	Hydro-Gel technology
Generally known, penetration so far	well known, widespread	well known, not widespread	well known, not widespread	well known, not widespread	little known, not widespread	known, but did not work for the purpose	known, but did not work due to increased risk	well known, not widespread	Well known, widespread	new high technology, with excellent references
Multifunctional method	no	no	no	no	no	no	no	no	no	yes, can be tailored to the individual case*
Need to disrupt system integrity	no	yes, in case of jamming	no	no	yes, in case of jamming	yes, every time	no	yes, every time	yes, most of the time	no
Need for special cleaning joint	not needed	not needed	not needed	not needed	not needed	only works with disrupting the system	not needed	only works with disrupting the system	Needed, or disruption needed	not needed
Risk of jamming	none	in case of small diameters	none	none	increased risk in case of small diameters	cannot be employed	none	present	present	none, cannot cause jams
Passing through narrowing or curves	not applicable	very limited	yes	yes	very limited	no	yes	no	no	yes
Removal of sediments	local	yes	yes	yes	yes	yes	yes	yes	yes	yes
Removal of bacterial membrane	no	slightly	partially	partially	slightly	yes	yes	yes	yes	yes
Removal of lime and strongly adherent materials	no	no	no	no	no	no	yes, depending on the applied chemical, time consuming	yes, depending on the type of pig used	no	no
Range of applicable diameters	not applicable with large diameters	not applicable with large and small diameters	not applicable with large diameters	not applicable with large diameters	not applicable with large and small diameters	not applicable with small diameters	not economical with large diameters	not applicable with small diameters, not economical with large diameters	not applicable with small diameters, not economical with large diameters	can be applied effectively from the smallest to the crawlable sizes
Max. length of cleaning potential	only at the vicinity of the tapping	only short sections	only short sections	only short sections	only short sections	only short sections	only short sections	more kilometers even	more kilometers even	tens of kilometers even
Health risks	none	risk of infection from the outside because of added sponge and disruption	risk of infection from the outside because of the air + secondary contamination	risk of infection from the outside because of the air + secondary contamination	risk of infection from the outside because of added ice and disruption	risk of infection from the outside because of disruption	elevated risk because of the used chemicals	risk of infection from the outside because of disruption	risk of infection from the outside because of disruption	no risks, harmless to health
Disinfection	applied at the center, or with mobile device	separate step after the cleaning	separate step after the cleaning	separate step after the cleaning	separate step after the cleaning	separate step after the cleaning	separate step after the cleaning	separate step after the cleaning	separate step after the cleaning	one step, done together with the cleaning
Long term benevolent effects	none	none	none	none	none	not known	slightly	none	none	inhibits bacteria repopulation
Water conservation	highly water wasting	water wasting	moderately water-saving	moderately water-saving	water wasting	water-saving	water wasting	moderately water-saving	moderately water-saving	water-saving
Wastes need to be treated	none	contaminated sponge pieces	none	none	none	none	used chemicals (hazardous materials)	none	contaminated sponge pieces	none
Known disadvantages so far	highly water wasting, only partial results	risk of infection because of the remaining sponge pieces	the residual air causes bacterial and operational problems	the residual air causes bacterial and operational problems	not really effective, risk of jamming	not cost effective, can only be applied at limited places	medical and environmental risk	risk of jamming, risk of infection due to disruption	risk of jamming, risk of infection due to disruption	there are not known disadvantages

* Mechanical cleaning + disinfection + system exploration, mapping, all at one step!