



## Dead wells spring back to life

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ABU DHABI // Chemical-free technology is reviving dead wells without the risk of pollution, in an advance tipped to save water and thousands of dirhams on digging new wells.

Engineers for Western Region Municipality have revived three abandoned wells in Al Gharbia with a cannon that blasts air into blocked filters and pipes. They said it was cleaner, safer, quicker and more effective than solvents or explosives.

Reviving dead wells is also more environmentally friendly than digging new ones.

"Any time you drill a well, you're using machinery that contaminates the air," said Khaled Abbas, the landscaping project manager for Dorsch Consult, which helped introduce the US technology known as Airburst in 2005.

"When we [revive] wells we have already dug, we're putting in valves to control the flows. Any time you have an open, uncontrolled pipe there is a lot of water being wasted."

Craig Somerville, the UK-based contractor who oversaw the Airburst trials for its European agent Cirrus International, said it worked by firing acoustic waves and creating an explosion that "pushes water out at a fairly high velocity". The residue is then pumped out so the clean fresh water below can be collected.

Mr Somerville said the technology, based on offshore oil-drilling techniques, is used in hundreds of locations in the US, UK, Canada, France and Holland.

Yasir Abdullah, an agricultural engineer with the municipality, said at the recent Environment 2009 exhibition in Abu Dhabi that biofilm, or natural residue, could build up over 10 to 15 years and completely block the filter and pipes.

"We tried this technique two years ago and it really succeeded," Mr Abdullah said. "Until now, the well still gives us good production."

While corrosive chemicals are still used elsewhere to unplug old wells, Esamadeen Adley, the municipality's chief landscaping engineer, said they were a danger to workers handling them.

Mr Adley said newer acid blends used for the job are less corrosive and non-polluting but the municipality wanted to find a chemical-free alternative.

Eventually, he said, the acoustic air cannons could be used for all wells.

The two new wells the municipality had planned would have cost at least Dh40,000 each, Mr Adley said, but reviving an old well with the compressed air would cost about Dh2,000, depending on the depth of the pipes.

He estimated that up to 60 per cent of the water from an ineffective well could go to waste unless the pipes are maintained and updated.

The wells in Al Gharbia can pump up to 10 million gallons of water a year. Cirrus International says the emirate has about 70,000 bore holes.

Mr Abbas said there are "a few hundred in Zone A" in Al Gharbia, which took in Madinat Zayed, Mirfa and Liwa.

A video shot last year and shown at the Western Region Municipality's exhibit at Environment 2009 showed a trickling well blasting water after the Airburst was used.

"I remember the municipality showed us a well that was to them empty; it was bone dry," Mr Abbas said. "That well started working and six months later, it was still working.

"That showed us that what you might think is empty or dry, it's really not. Sometimes they were barely trickling before."

Mr Somerville said: "The UAE is one country that we're interested in because the simple truth for Abu Dhabi is there are groundwater needs.



A congested well in the Western Region is cleared using the Airburst developed in the US. Courtesy Impact Porter Novelli

"If you're using groundwater from a well, every week that you pump out, you're not actually getting those litres back in rainfall.

"Getting water benefits forestation projects but you either have to spend a lot of money on desalination, which is not environmentally friendly, or look up better methods."

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