

CSIRO groundwater trial underway at Four Mile uranium mine

VALERINA CHANGARATHIL

HEATHGATE Resources is testing a CSIRO-developed automated groundwater monitoring and reporting system at its Four Mile West uranium mine in the far north of SA.

The trial, said to be a world-first, kicked off recently and

aims to set a new standard in environmental best-practice by providing confidence that water-related impacts are effectively managed.

CSIRO said effective groundwater management was vital for helping in-situ recovery, which involves dissolving the commodity

underground and then extracting it to the surface. It is also crucial for protecting the environment and local communities. The current best-practice relies on a manual "pump and test" method that has significant challenges, including high installation and labour costs.

"To date, there is no embed-

ded automated groundwater monitoring system that exists for ISR operations," CSIRO industry trial project lead Daniella Caruso, said.

CSIRO's SENSEI is the world's first automated, real-time monitoring and reporting system that operates in remote and extreme conditions, in-

cluding low pH conditions (acid) and groundwater pressures to depths of around 200 metres below ground level.

The partnership with Heathgate, Boss Resources and National Energy Resources Australia will see CSIRO trialling 10 SENSEI sensor packs. "The objective is to test

the sensors in controlled conditions alongside current manual monitoring techniques," Heathgate Resources' HSSE regulatory and compliance superintendent Kathryn Levingsstone said. If the first phase of the 12-month trial is successful, 16 more sensor packs will be deployed in April 2019.

Tomorrow Maker puts science in the picture

CLARE PEDDIE
SCIENCE REPORTER

SCIENTISTS need every bit of help they can get to tell their stories and share their research, so a grant from the AMP Tomorrow Fund is a welcome boost for Adelaide start-up Animate Your Science.

Founder Dr Tullio Rossi says the \$15,000 grant means he can expand the business and hire someone, rather than just employing freelancers.

"Yes we won \$15,000 and that's not going to cover the whole salary of course but it is going to help us a lot to sustain cash flow in the delicate phase when we really need an employee but we just can't afford it," he said.

"This money gives me great peace of mind."

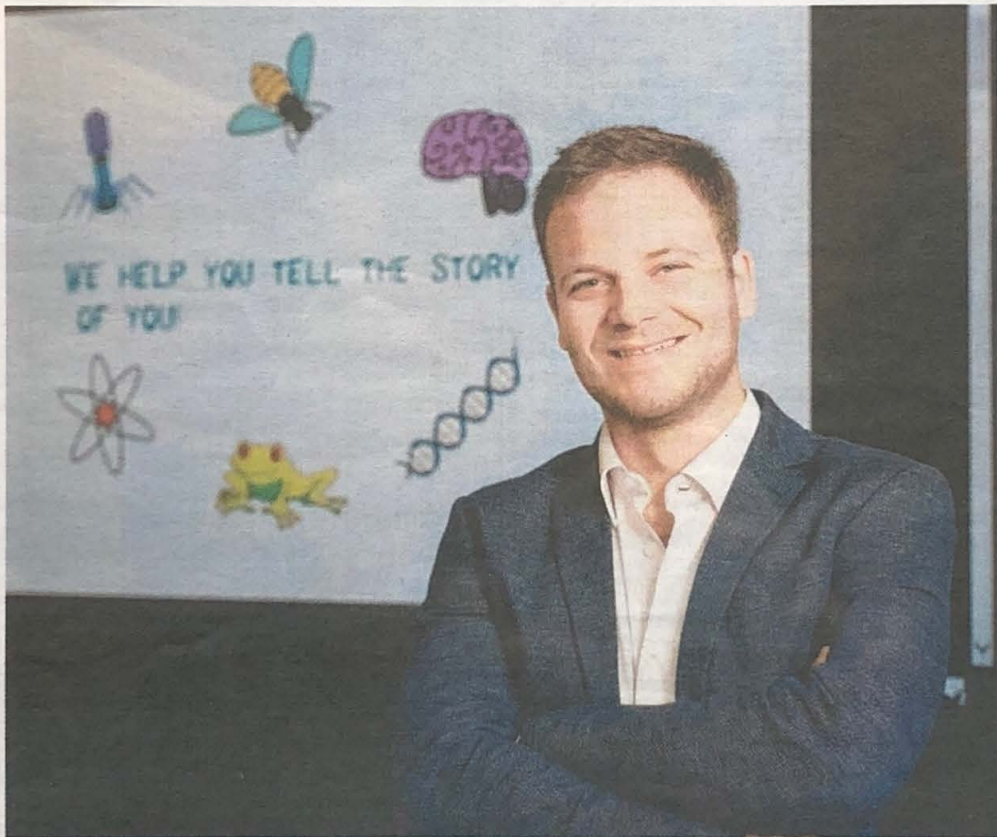
Dr Rossi offers an usual combination of skills and experience from his base at the University of Adelaide ThinkLab.

"I used to be a graphic designer, since I was 18 or so, well before I started in science, but I thought it was just something that would never intersect with science," he said.

"Then one day I literally connected the dots like people say and found myself saying 'Oh, I can turn science into something pretty'."

"I started reading about storytelling, I got really into it and that made a difference to the way these videos feel, so it's not just telling facts with visuals, it's telling a story with the video."

And the market for animated science is expanding with the growth in social media and online forms of traditional media.



BOOST: Adelaide start-up Animate Your Science founder Dr Tullio Rossi was awarded an AMP Tomorrow Fund grant.

Dr Rossi points to reports that estimate 20 per cent of scientists worldwide – around 1.6 million – now regularly use social media for outreach and self-promotion.

"So, given scientists with a social media presence are the most likely group to value and use our services, we initially estimate our potential market

to be around 1.6 million individuals," he said.

"But ultimately we envision a day when video abstracts will be the norm and all research papers will have one, just as all movies now have a trailer."

The video he made for Flinders University researcher Dr Justin Chalker and fellow AMP Tomorrow Fund grant

winner is one of the best examples. Dr Chalker will use the funds to help commercialise the innovative polymer made from petroleum waste products capable of absorbing mercury and cleaning up oil spills.

AMP Foundation head Helen Liondos says the "diversity of this year's Tomorrow Makers demonstrates the tal-

ent and innovation within our community".

"The beauty of the Tomorrow Fund is that the funds can be used for a range of things to help people achieve their goal – whether it's a vital piece of equipment, training or travel," she said.

"That flexibility can foster agility and innovation."

Lending to investors down in October

ALEX DRUCE

LENDING to property investors was down in October, but mortgages to owner-occupiers helped pick up the slack.

The value of mortgages to investors and other commercial lending fell 31 per cent to \$43.93 billion for the month, while the value of home loans to owner-occupiers rose 3.5 per cent to \$20.15 billion after a September lull, according to seasonally adjusted figures released by the Australian Bureau of Statistics.

The rise follows an unexpected 2.2 per cent lift in owner-occupier home loan approvals for the same month, a development economists put down to a "dead cat bounce" as the Australian property market sags.

Personal loans in October fell 2.3 per cent to \$5.76 billion, with lease finance up 1.8 per cent to \$609 million, having fallen 3.4 per cent in September. Elsewhere, quarterly data released by APRA showed banks were demanding bigger deposits from new buyers.

APRA said new residential term loan approvals with a loan-to-value ratio of 90 per cent or more fell to 5772 in the quarter, down from 6152 in the previous three months and from 6665 a year earlier.

That meant the number of new loans with a 10 per cent deposit represented just 6.4 per cent of a total 89,219, a proportion that comparison site RateCity.com said was the lowest on record. "While house prices are dropping nationally, this is a big stumbling block for anyone who miscalculated how much they need for a deposit," research director Sally Tindall said. In Sydney, a person would need \$187,143 for a 20 per cent deposit on the average house, in addition to stamp duty.

Board backs \$2.4b NZ bid

NEW Zealand's largest online marketplace is set to be bought by a British private equity firm for \$NZ2.6 billion (\$2.4 billion).

Apax Partners has offered \$NZ6.45 a share for the former Fairfax business, Trade Me, which is dual-listed on the ASX and NZX, raising its initial bid following a rival offer from US firm Hellman & Friedman.

"We're confident Trade Me

would have a successful standalone future, but we believe the certainty of the cash offer and material premium would be an attractive outcome and it merits being put to shareholders with our recommendation, in the absence of a superior proposal," Trade Me chairman David Kirk said. Shareholders will vote on it in April.

Petratherm set to explore

PETRATHERM has secured a second licence application over an area prospective of Olympic Dam-style copper-gold mineralisation.

The 641sq km application over the Mabel Creek inlier of the Gawler Craton increases the company's landholdings to nearly 1500 sq kms.

The area has only been lightly explored for iron-oxide-

copper-gold style mineralisation, but a single hole drilled by BHP in 1992 about 13km south of the application area intersected results which are characteristic of mineralisation often found in areas around Prominent Hill and other deposits, Petratherm said. Previous exploration results are now being reviewed before the tenement is granted.

Quantum deal for Archer

SHARES in Adelaide company Archer Exploration surged by 29 per cent yesterday after the company struck a licence agreement with the University of Sydney.

In a statement to the ASX, the company said the partnership would allow it to develop and commercialise a chip capable of quantum information processing at room tempera-

ture. "Currently, the materials used in quantum computers either function at really low temperatures, or if they function at room temperatures, they are extremely difficult to integrate into modern electronics," Archer chief executive Mohammad Choucair said.

"The IP we have licensed is a potential solution to these problems."