

MAY 2021

IAH NEWS



MESSAGE FROM IAH AUSTRALIA

Australia's hydrogeology continue to gear up for AGC 2021 in November. The travel bubble to NZ is open and it looks like the Australasian event is going to be big. Don't miss the key dates for your participation:

Key Dates

Abstracts are now open!

Abstracts Close:

9 June 2021

Registration Open:

22 June 2021

Early Bird Registration Deadline:

22 September 2021

Conference Dates:

22 – 24 November 2021

Australasian Groundwater Conference 2021

Science, Resilience & Adaptation

The AGC2021 website is now live (agc2021.com.au). Sarah Bourke's organising committee are busy planning for this huge event.

The Attended Expressions of Interest has received 270 responses to date, which shows that the hydrogeology community is keen to meet up again.

Expect more communications shortly for 2021's major hydrogeology event.

WEBINAR SERIES

Underground webinar

When IAH Australia teamed up with IAH Belgium on 20 April for a webinar it proved to be the most Underground webinar so far. So Underground that most registrants we're able to connect, something about an IT issue, Zoom, login mix-up, anyway. If you were able to log in then you'd have heard Marijke Huysmans of the Free University of Brussels show that Australia is not alone in experiencing drought-related groundwater and climate change stresses. Marijke researched European drought-groundwater interactions and found important differences between groundwater- and surface water-drought responses. She presented groundwater and its storage potential as an opportunity to build resilience against climate stresses.

The Flanders region of Belgium (population: 7 million) is spending €500 m (\$AUS780 m) on the Blue Deal, a program that invests in 'structural solutions versus reactive measures' for groundwater- and surface water- infrastructure and science. This suggests that Australia (population: 26 million) should be in line for \$AUS2.9B in similar investment in groundwater resources ...

THE BLUE DEAL OF FLANDERS: 75 MILLION EUROS AGAINST DROUGHT

Structural solutions versus reactive measures

The initiative of Flemish Minister of Environment Zuhal Demir

Budget of almost 500 million euro (!)

High-level task-force (4 ministers, 5 province governors, scientific experts, representatives of different actors/sectors).



Blue Deal

De strijd tegen droogte

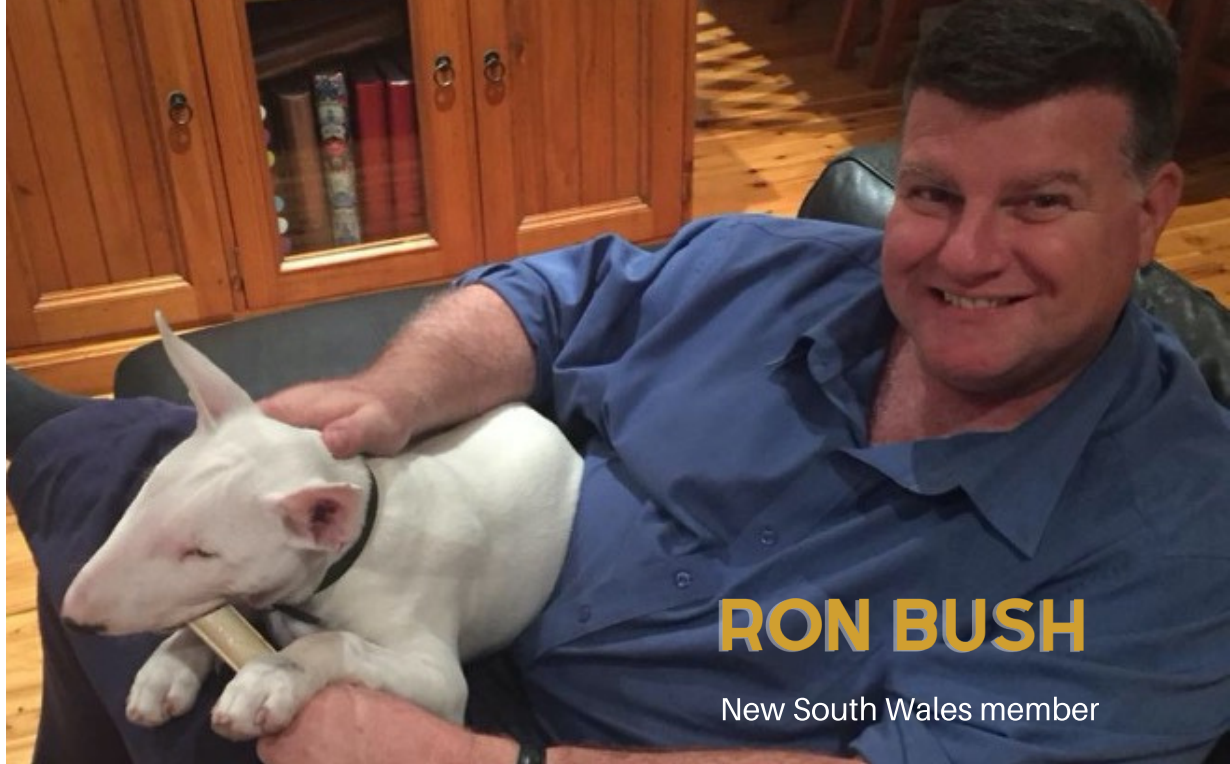


Our upcoming Webinars will be less like our IAH Belgium collaboration and more like the successful Microsoft Teams events we launched in 2020. Look out for more announcements for these upcoming events:

16 JUNE ; Chris Turnadge (CSIRO) Sinusoidal pumping tests

18 AUG : Peter Cook (NCGRT) A deeper look at groundwater-surface water interaction

21 OCT : Ray Froend (2021 Distinguished Lecture) GDEs



RON BUSH

New South Wales member

At first glance, Ron's working life does not include a lot of groundwater. He's currently General Manager Development and Environment for Hi-Quality Group, a transport, quarry, waste and landfill company with operations in NSW, Victoria and Queensland.

But that belies the full circle he has come since starting out in quarrying and a fruitful career in the resource industry that required more than a passing knowledge of groundwater and an active interest in all things hydrogeological.

You have a Grad Diploma in Hydrogeology from Flinders University that you attained quite late in life. What prompted that move?

My career started as a geologist in the quarry industry that progressed to mainly project approvals work and contaminated site redevelopment, so I was exposed to hydrogeology and issues during that time. About 2010, I moved more into the coal mining area, initially in open cut and then underground in the NSW Southern Coalfields, where the hydrogeology technical complexities for coal mine approvals lead me to complete Grad. Dip in Science (Groundwater Hydrology) at Flinders Uni.

Did that solve your problems?

I really enjoyed that course, though for me at that time it could have been more mining centric. But perhaps that was better in retrospect, providing a broader perspective on groundwater issues and applied solutions.

Things like managed aquifer injection and saltwater intrusion.

You've avoided consulting. Do you have any advice for hydrogeological consultants interacting with resource clients?

Sometimes it is challenging to convey very technical concepts in a format that is able to be understood by a non-technical audience. In the project approvals space it sometimes feel that maybe we get too hung up on the minute technical details and don't look more broadly at the bigger picture and the overall project merits. Competing interests in the approvals area can become stalled by competing experts and models.

I also feel the pain that there are not many opportunities from companies to risk funds to do experiments and try something different to test new ideas and concepts. Might be one of the reasons I have avoided consulting through my career!

In a small company like Hi-Quality I have to be a generalist and be across all aspects of the business, particularly the technical side and often this includes dealing with groundwater issues. My training allows me to use analytical solutions to give pragmatic estimates for groundwater de-watering.

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Have you done much groundwater modelling?

Why does everyone assume that all hydrogeologists are groundwater modellers? I think that there is a trend for people to think that if you have a qualification in hydrogeology, it automatically means that you are a groundwater modelling expert! It needs to be stressed that this is a very specialised field and skill set and not for all hydrogeologists.

Do you have any recommendations for early career hydrogeologists?

My advice is to seek to continue to educate yourself and be flexible with your career path – sometimes a less significant role can lead to greater things!

Future Plans

Exciting times at Hi-Quality Group as we are seeing good growth prospects from significant amount of civil infrastructure work taking place. I'm also completing a Grad Dip in Mining Engineering (Mine Geomechanics) at UNSW – to round out my background in geology, hydrogeology and geotechnical engineering.

If you weren't a hydrogeologist?

Stonemason – my dad was a 5th generation stonemason! But right now any time off is spent reading, gardening and walking my dog, Pogz.

MEMBERSHIP RENEWAL

Become a member and be Informed on what's happening both In your chapter and around Australia.

There are plenty of opportunities to network with like-minded people, be advised on upcoming webinars and discounted tickets to the next AGC2021.

Join today via our Australian website.

<https://www.iah.org.au/become-a-member/>

Members are now able to login, check details, and renew subscriptions.

CORPORATE MEMBERSHIP

Corporate membership is a great way to add your team to the IAH network and to gain exposure for your contributions to hydrogeology.

A huge thank you to our corporate sponsors below for their continued support throughout 2021.



WHAT RECOVERY EFFICIENCIES CAN WE EXPECT IN MAR APPLICATIONS?

Australia will increasingly rely on Managed Aquifer Recharge (MAR) in our efforts to build water-storage capacity in the face of climate uncertainty. MAR applications include the injection and recovery of fresh water into more-saline aquifers. But what recovery efficiencies (RE) can we expect? And how does our system-design impact the RE?

Lilli Witt and her team at the Free University of Berlin undertook a series of lab experiments and numerical modelling studies to find out.

Their results are now available in the latest edition (Volume 29, Issue 3, May 2021) of the Hydrogeology journal (free for all IAH members).

Lilli's team showed that the RE is impacted by the buoyancy effect of injecting fresh water into a more-saline aquifer.

We usually conceptualise a bubble of freshwater surrounding an injection bore; however, Lilli's research showed that the freshwater region is more like a wedge of injected water that extends above the injection location.

This has important implications for designing MAR systems and Lilli provides some conclusions for maximising the RE.

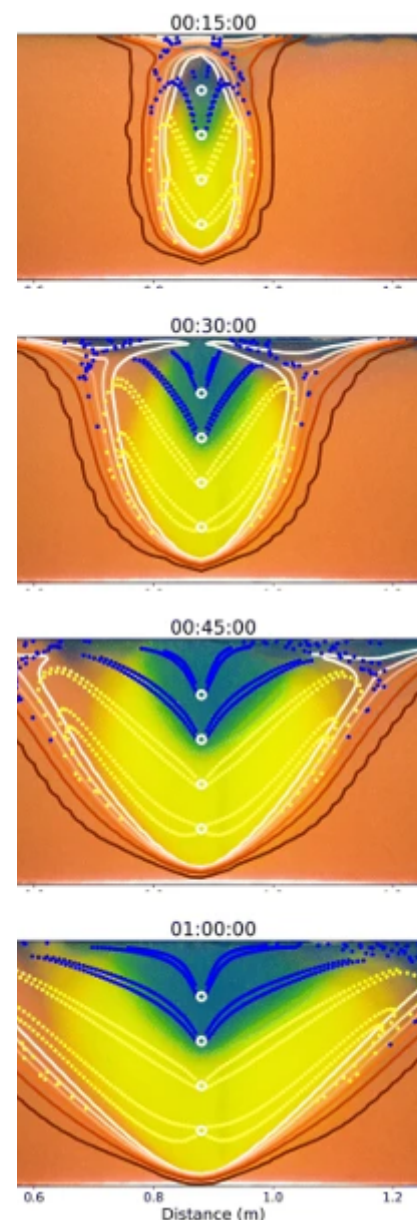
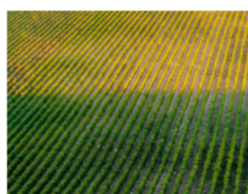


Figure: Injected fresh water (blue regions) forms a wedge shape due to density effects. This impacts the recovery efficiency (RE) of this water storage application.



Engagement

Workshops, webinars, reports, opinions, and resources



Education

Videos, home tutoring, training and more



Worked Examples

'Thinking aloud' on real life projects



Research

Improving concepts and technologies for every day impact



Software

Discover software to improve your modelling

UPDATE

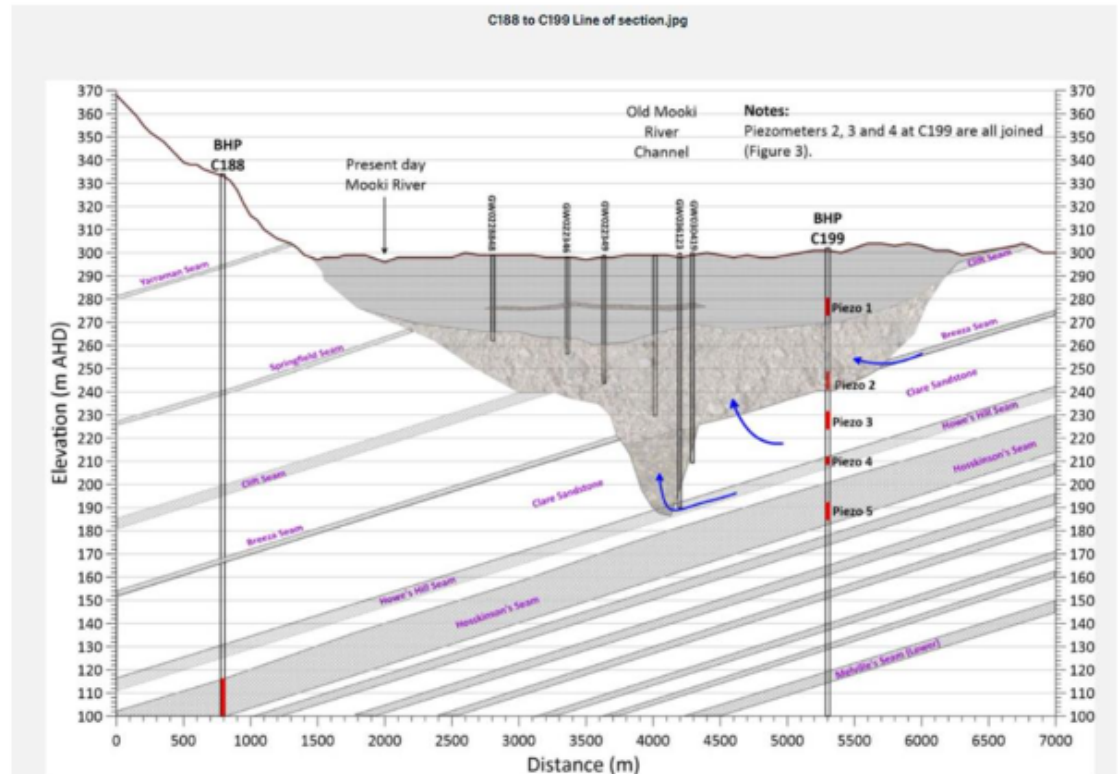


The Groundwater Modelling Decision Support Initiative (GMDSI) continues to grow content, including tools and worked examples for modelling applications. Check out the website: gmdsi.org

NSW NEXT HYBRID EVENT



MAY 11 - 6 PM - SLR OFFICES



DON'T FORGET THE GEOLOGY IN HYDRGEOLOGY!

IAH NSW is holding a hybrid event on 11 May. It will be held at Milsons Point and via Microsoft Teams.

Dr Ian Acworth will outline how groundwater modelling is routinely applied in the EIS process to assess the likely impacts of mining.

It's been subject to widespread criticism by those seeking to avoid the environmental impacts of mining.

The criticism is most frequently that the model does not sufficiently reflect reality and that the model predictions are therefore unreasonable.

Ian Acworth graduated from Leeds University in 1973 with an Honours degree in Earth Sciences.

He has worked as a hydrogeologist ever since, working in Africa and UK before migrating to New South Wales in 1988.

Since 1988 he has been at University of New South Wales in Sydney researching and teaching hydrogeology, mostly in the School of Civil and Environmental Engineering.

NETWORKING continued..



QLD TECHNICAL PRESENTATION

IAH QLD hosted AGE principal modeller Neil Manewell at QUT Gardens Point and in Townsville. Neil's 22 April talk ('Setting your groundwater models free; overcoming false accuracy using rapid data assimilation') talked the common tenet that 'bigger is better' when it comes to groundwater models. Neil's talk reflected on lessons learned during a GMDSI worked example model. Thanks Neil and everyone else who joined this tech talk. Also thanks to Australasian Groundwater and Environmental (AGE) Consultants for sponsoring the event, the location and service were fabulous. IAH QLD's next social event, 'Just flow with it', will be on 20 May. Stay tuned!



IAH WA TECHNICAL PRESENTATION

OPEN PIT SLOPE DEPRESSURISATION STUDY FOR OLIMPIADA GOLD MINE

Anastasia Boronina and Geoff Beale (online from the UK) gave a great presentation to the Perth attendees and to a Microsoft Teams audience.

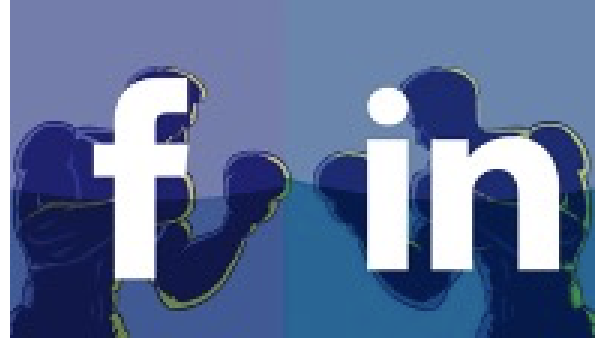
The presentation, on Pit Slope Depressurisation Study for Olimpiada Gold Mine (Russia) highlighted the challenges involved working in an arctic environment.

It also highlighted the importance of near-surface aquifers in pit wall stability and dewatering.

KEEPING UPDATED....

LinkedIn v Facebook

IAH Australia membership's has spoken: having a LinkedIn page open at work is acceptable, Facebook is pushing it. Our LinkedIn page is regularly updated and we're seeing a steady growth in followers (now over 600). Facebook has the same content but a fraction of the engagement.



ADIA launches new app



The ADIA App 4+
Drill with confidence
[Australian Drilling Industry Association](#)
Designed for iPhone
★★★★★ 5.0 • 3 Ratings
Free
[View in Mac App Store](#)

The Australian Drilling Industry Association (adia.com.au) has now released a drilling app for drillers' calculations. How does that help a hydrogeologist that's not on the levers? For many it doesn't, for some it can, it provides a means of, for example, reviewing mud mixes and BHAs, which can help in managing complex drilling programs, by providing independent assessments of drilling conditions. Search 'The ADIA App' in your Android and Apple app store for more details.

IN MEMORIAM

FRANS KALF (1946-2021)

On 7 February 2021, the Australian hydrogeology community lost a pioneer. Frans Robert Peter Kalf died that day, after enduring a long battle with myeloma for much of the past decade, although he kept his illness quiet until the last couple of years. His specialty was mathematical geology, which morphed naturally into groundwater modelling. In keeping with his penchant for precision, his age was 74.8.

Born in Amsterdam on ANZAC Day 1946, he migrated to Australia with his parents as a four-year-old. He leaves behind Tricia, his wife of 44 years, with their seven children and many grandchildren.

Apart from his professional life, he had many interests. He played base guitar in a band for many years and later composed music; he treasured a white grand piano and had an early electronic piano, and collected early recording technologies. He loved sailing with his WC&IC/WRC (Water Resources Commission) friends, and always competed in the annual tennis day. In later years, the air shows in England were his passion which led to expertise with flight simulation. Despite an apparently confident persona, he had a soft side and occasionally “wore his heart on his sleeve”.

He kept up with modern physics, “ever looking on new objects with an endless curiosity ... without drawing any worldly advantage to themselves from them ... to their amusement, or the improvement of the mind” (Addison, 1712).

He was fascinated by quests for the Theory of Everything, black holes, anti-de Sitter space, emergent gravity and Escher tessellation figures.



Frans had such a great presence in the groundwater industry.

He was highly respected and relied upon, and his colleagues will miss his wisdom greatly. In March 2010, his erudite contribution to our profession was recognised with a lifetime award from the IAH (NSW branch). With his passing, we can only hope that Frans has now been made aware of the solution to the Theory of Everything.

Noel Merrick
Don Woolley
Steve Hancock
9 March 2021

***Read the full article on the website :**
<https://www.iah.org.au/in-memoriam-frans-kalf-1946-2021/>