23 April 2026

National Water Reform 2026

Commissioner Joanne Chong

Associate Commissioner Dr Paul Wywroll

National Water Reform 2026 inquiry

Productivity Commission

GPO Box 1428 Canberra City ACT 2601

Submitted via: www.pc.gov.au/inquiries-and-research/water-reform-2026

Submission to the National Water Reform 2026 Inquiry

Submitted by:

Kremford Pty Ltd

Melbourne, Victoria, Australia

Developer of the Limax Sinusoidal Aquifer Testing System, in collaboration with Flinders University (National Centre for Groundwater Research & Training), CSIRO (Land and Water, Deep Earth Imaging Future Science Platform, and the University of Georgia (USA)

Dear Commissioners.

Kremford Pty Ltd respectfully submits this response to the National Water Reform 2026 Call for Submissions. We address both Part A of the Terms of Reference (updating the NWI assessment under Section 88 of the Water Act 2007) and Part B (water policy and regulatory settings to support a secure, resilient and sustainable water services industry). Our submission focuses on sinusoidal aquifer testing technology — both slug and pump test configurations — as a practical, Australian-developed tool that directly supports multiple objectives of the Terms of Reference.

The Limax Sinusoidal Slug and Pump Testing System, developed by Kremford Pty Ltd in collaboration with Flinders University's National Centre for Groundwater Research & Training (NCGRT) and CSIRO and, and with academic input from Professor Todd Rasmussen of the University of Georgia, provides more robust, efficient, and defensible hydraulic aquifer parameter estimation from groundwater wells than conventional methods. We submit that Australian governments should look at sinusoidal testing as one method for aquifer characterisation programs, and that this designation should be sited in the policy and regulatory reforms now being considered under the National Water Agreement (NWA).

The submission is structured to address each key element of the Terms of Reference in turn, followed by specific recommendations.

1. Terms of Reference: Scope and Our Position

The Terms of Reference direct the Commission to assess progress under the NWI, having regard to the new National Water Agreement (NWA) as its successor framework; and to provide recommendations on pricing, economic oversight and regulatory design, governance, and regional and equity considerations. The Commission is also specifically directed to have regard to:

- Water affordability and productivity;
- Housing supply, the net zero transition, National Closing the Gap targets, and the sustainable development of new industries including data centres;
- The perspectives and socio-cultural rights of Aboriginal and Torres Strait Islander peoples;
- Emerging challenges such as environmental contaminants; and
- Investment in circularity and moving operations towards net zero.

Kremford's submission addresses these priorities by demonstrating how improved groundwater measurement capability — through sinusoidal testing — is a practical enabler for each of them. We note that the submission focuses on aquifer system characterisation technology and does not seek to re-examine matters already under review through the Water Act or Basin Plan reviews, consistent with the Commission's direction to avoid duplication.

2. NWI Assessment and the National Water Agreement

The Terms of Reference note that the 2004 NWI is more than 20 years old, and that the Commonwealth and jurisdictions have developed the NWA as its successor. Jurisdictions signing the NWA by 28 May 2026 will enter an updated framework with new objectives. We strongly welcome the NWA and the opportunity it creates to embed better measurement standards into a refreshed national water policy framework from the outset.

The PC's 2024 NWI Assessment identified persistent failures that remain unresolved and are directly relevant to this submission:

- **Finding 8.1 — Metering:** Most jurisdictions are not on track to meet their metering installation commitments, increasing the risk of unreported water use and overextraction.
- **Findings 7.1–7.3 — Environmental outcomes:** Environmental outcomes in water plans are inconsistently specified, reporting on environmental water is inadequate, and independent review of outcomes is absent in many jurisdictions.
- **Findings 9.1–9.2 — Remote drinking water:** Drinking water quality issues persist in remote areas, with inconsistent and non-transparent reporting.
- **Finding 6.2 — Infrastructure investment:** Major infrastructure decisions are often not subjected to rigorous cost-benefit analysis, with some funded projects having costs exceeding benefits.

These failures share a common root cause: insufficient and unreliable groundwater measurement. Without defensible estimates of aquifer transmissivity (T), hydraulic conductivity (K), and storage coefficient (S), sustainable yield calculations, extraction limits, environmental water planning, and infrastructure investment assessments all rest on uncertain foundations. The NWA provides the right vehicle to address this by establishing national minimum standards for aquifer hydraulic testing as part of refreshed water policy.

3. Why Sinusoidal Testing Is Superior: A Direct Comparison

There are two conventional approaches to aquifer testing. Traditional pumping tests (constant-rate) provide reliable results and test large regions of the aquifer, but require days of operation, large volumes of water requiring disposal, and significant cost, which can be challenging if the quality of the groundwater is poor or contaminated (e.g., per- and polyfluoroalkyl substances- PFAS). Conventional single-impulse slug tests are quick and inexpensive but are limited to characterising only the near-well formation, very limited responses in observation wells, and cannot reliably determine the storage coefficient — with typical error margins of 20–40%.

Sinusoidal (periodic) testing, as summarised in Table 1 based on research by Professor Todd Rasmussen (University of Georgia, 2026), combines the best attributes of both conventional methods while eliminating their key disadvantages.

Table 1. Comparison between conventional and sinusoidal hydraulic testing methods

	Conventional Pumping Test	**Conventional Slug Test**	**Sinusoidal (Periodic) Test**
Duration	Long (days)	Short (minutes)	Intermediate (hours)
Observation well	Yes	No	Yes
Accuracy	Good	Poor	Good
Difficulty	High	Low	Low
Cost	Major	Minor	Minor
Water disposal required	Yes	No	No
Region tested (unconfined)	Tens of metres	Metres	Tens of metres
Region tested (confined)	>Tens of metres	Metres	Tens of metres

Source: Rasmussen TC (2026), Sinusoidal Aquifer Testing. University of Georgia.

Sinusoidal testing delivers the reliability and spatial coverage of traditional pumping tests at the cost and difficulty of a conventional slug test, and without requiring water disposal. This is not a marginal improvement: it is a step-change in cost-effectiveness that makes defensible aquifer characterisation feasible at a scale and price accessible to regulatory programs, remote utilities, and small jurisdictions. In particular, sinusoidal tests overcome many of the challenges in conducting hydraulic tests as part of contaminated sites and remediation efforts.

4. Scientific Maturity and Development Status

Sinusoidal aquifer testing has a 40-year peer-reviewed foundation. The landmark paper by Black and Kipp (1981) in the journal Water Resources Research established the theoretical basis for determining hydrogeological parameters using sinusoidal pressure tests. Field validation followed with Rasmussen, Haborak and Young (2003), who used sinusoidal pumping at the Savannah River Site, South Carolina — a complex multi-aquifer system — and successfully recovered transmissivity, storativity, and leakance across multiple confined aquifer layers. The theoretical framework is treated comprehensively in “Hydrodynamics of Time-Periodic Groundwater Flow: Diffusion Waves in Porous Media” by Depner and Rasmussen (2016).

More recent work by Cardiff et al. (2013), Guiltinan and Becker (2015), and Paradis et al. (2024–2025) has extended the method to hydraulic tomography and heterogeneity characterisation, demonstrating that periodic signals provide substantially more aquifer information than single-impulse methods, particularly for storage coefficient estimation.

The Limax System — designed and manufactured in Melbourne by Kremford Pty Ltd — represents the commercialisation of this mature science into lightweight, field-deployable equipment. Field trials at McLaren Vale, South Australia (2026) confirmed clean sinusoidal signals in both production and observation wells, with observed data fitting theoretical solutions with high fidelity. Sinusoidal pump testing has been conducted at McLaren Vale, SA (2026) and at the Savannah River Site, USA (Rasmussen, 2003), confirming practical readiness across diverse hydrogeological settings. Flinders University have recently purchased a Limax system to undertake a comprehensive survey of multiple groundwater wells and aquifer systems across the Adelaide Plains in South Australia. The results of this survey, when completed can be made available to the inquiry upon request.

The progression from theoretical appraisal (1981) → field validation across multiple continents → commercially available Australian equipment (2025) demonstrates that this is a mature technology ready for regulatory specification, not an experimental method.

5. The Limax Sinusoidal Testing System

5.1 Sinusoidal Slug Testing

A precision stepper-motor winch oscillates a solid slug in the production well at a user-specified period and amplitude, generating a pure sinusoidal pressure wave that propagates to observation wells tens of metres away. The Limax System determines T, K, and S for confined, leaky-confined, and fractured rock aquifers using peer-reviewed analytical solutions (Black & Kipp, 1981; Rasmussen et al., 2003; Barker, 1988). Multiple test periods can be run sequentially or simultaneously, allowing different spatial regions of the aquifer to be investigated in a single field visit. All parameter estimates are accompanied by 95% confidence intervals.

5.2 Sinusoidal Pump Testing

Sinusoidal pump testing extends the same methodology to larger-scale assessment. Two variable-rate pumps alternate withdrawal and return at a sinusoidal rate, with the pumped water cycled through a storage tank and re-injected — so no net water extraction occurs and no disposal is required (significant benefit for working on contaminated sites). The analytical solution (Rasmussen et al., 2003) recovers transmissivity, storativity, diffusivity, and leakance from the amplitude attenuation and phase lag between pumping and observation wells. Harmonic Least Squares (HALS) analysis isolates the known test frequency from background signals (barometric fluctuations, nearby pumping, tidal effects), making the method robust in noisy operational environments.

5.3 Key Technical Capabilities

- **Three-parameter determination:** Robustly estimates T, K, and S. Conventional slug tests cannot reliably determine S.
- **Multiple aquifer types:** Confined (Black & Kipp, 1981), leaky-confined (Rasmussen et al., 2003), and fractured rock (Barker, 1988) solutions all implemented, including leakance between aquifer layers.
- **Field efficiency:** 40–70% reduction in field time versus traditional pumping tests. No water disposal required.

- **Remote deployment:** Lightweight, modular, battery-powered equipment in five IP67-rated cases each under 15 kg. Wireless real-time data visualisation.
- **Auditable and interoperable outputs:** GNSS-recorded location and time and CSV data export. The standardised data format integrates directly with government groundwater databases, numerical groundwater models (including MODFLOW and FEFLOW), GIS systems, and contaminant transport modelling software. High-resolution time-series records are retained in full, supporting re-analysis as assessment methodologies evolve, research collaboration with universities and CSIRO, and submissions to national water information registers. The data can also be used as input to a growing range of passive subsurface characterisation tools and web-based groundwater analysis platforms, extending the value of each field test well beyond its immediate application.
- **Australian-made:** Designed and manufactured in Melbourne; supported by Flinders University's NCGRT.

6. Addressing the Terms of Reference: Key Priority Areas

6.1 Pricing: Efficient Resource Allocation and Long-term Financial Sustainability

The Terms of Reference direct the Commission to consider pricing settings that ensure efficient resource allocation and the long-term financial sustainability of the water services industry. Accurate groundwater characterisation is directly relevant to both objectives. Aquifer data quality determines the defensibility of sustainable yield assessments, which in turn underpin water allocation decisions and pricing. Where sustainable yields are based on poorly characterised aquifers, there is a risk of either under-allocation (wasted economic potential) or over-allocation (resource depletion with long-term financial consequences for utilities and communities that depend on them).

The cost savings from more robustly informed infrastructure design — enabled by better aquifer data — are often diffuse and long-term, while the cost of testing is immediate. This creates a systematic underinvestment in measurement capability. Current pricing frameworks do not adequately incentivise utilities to invest in higher-quality aquifer testing. We recommend the Commission consider whether pricing or regulatory settings could be adjusted to internalise the long-term value of defensible aquifer data, for example through asset management frameworks that recognise data quality as a regulated asset.

6.2 Affordability and Long-term Service Resilience

The challenge of balancing affordability with long-term service resilience is particularly acute for groundwater-dependent communities. Under-characterised aquifers lead to either over-conservative infrastructure designs (unnecessarily expensive, reducing affordability) or under-designed systems that fail under climate stress. Sinusoidal testing reduces both risks by providing robustly determined T, K, and S values needed for efficient infrastructure sizing, reducing whole-of-life costs and improving the reliability of service delivery. This ultimately supports water affordability by avoiding both capital waste and emergency responses to infrastructure failures.

6.3 Economic Oversight: Proactive Asset Management and Environmental Contaminants

The Terms of Reference direct the Commission to consider economic oversight and regulatory design that promotes proactive and sustainable asset management, and is responsive to emerging challenges such as environmental contaminants. Both objectives are directly supported by improved groundwater characterisation.

Proactive asset management of groundwater-dependent infrastructure requires periodic re-assessment of aquifer hydraulic properties, particularly as climate variability, land use change, and managed aquifer recharge programs alter subsurface conditions. Sinusoidal testing, because it is fast, repeatable, and does not require water disposal, is well suited to periodic compliance monitoring and re-assessment programs that could be embedded in asset management frameworks under economic regulation.

Environmental contaminants represent a growing challenge in Australian groundwater management. Knowledge of T and K is essential for contaminant plume migration modelling, remediation system design, and compliance monitoring (Sudicky and Huyakorn, 1991). Critically, sinusoidal slug testing does not require extracting potentially contaminated water from the well, unlike conventional pumping tests. The System's outputs integrate directly with standard contaminant transport models (e.g., using the Ogata-Banks solution), supporting EPA Contaminated Land programs and mining sector dewatering impact assessments.

6.4 Net Zero Transition and Circularity

The Terms of Reference specifically direct the Commission to consider economic oversight that supports utilities' long-term planning including investment in circularity and moving operations towards net zero. Improved aquifer characterisation contributes to both goals in practical ways.

Managed aquifer recharge (MAR) — a key tool for water circularity, allowing treated wastewater or stormwater to be returned to aquifers for later extraction — depends critically on reliably determined T, K, and S values for scheme design and approval. The 20–40% error margins of conventional slug testing translate directly into uncertainty in MAR scheme capacity calculations, potentially causing schemes to be oversized (costly and energy-intensive) or undersized (ineffective). Sinusoidal testing, with its robustly determined parameters and ability to quantify all three, provides the defensible foundation for reliable MAR scheme design.

With respect to net zero, more efficient aquifer characterisation reduces the carbon footprint of testing programs themselves. Conventional pumping tests require diesel-powered pumps operating for days, generating significant emissions. Sinusoidal slug testing is battery-powered (lithium battery, 24V), requires no pumping, and completes in hours. Sinusoidal pump testing, which cycles water back to the aquifer, uses substantially less energy than conventional constant-rate pumping tests. These operational characteristics support utilities' net zero commitments and align with the sustainability objectives of the NWA.

6.5 Housing Supply and New Industries (including Data Centres)

The Terms of Reference identify housing supply and the sustainable development of new industries, including data centres, as key priorities for the inquiry. Both create new demands on groundwater that require careful assessment.

Housing supply: Large-scale residential developments in greenfield areas frequently rely on groundwater during construction (dewatering) and as a long-term water supply supplement. Accurate aquifer characterisation at the planning stage reduces the risk of unexpected dewatering impacts, which can delay approvals and increase development costs. Sinusoidal testing's speed and low cost make it practical to include as a standard element of groundwater impact assessments in development applications.

Data centres are major consumers of water, primarily for cooling. Their expansion — driven by AI and cloud computing growth — creates new concentrated demands on groundwater in locations that may not have been previously assessed. Accurate characterisation of aquifer capacity and sustainable yield in proposed data centre locations is essential to support approvals that balance development objectives with long-term resource sustainability. Sinusoidal pump testing is particularly well-suited to the multi-layer confined aquifer systems that data centres often target water for cooling purposes, given its ability to quantify leakance between aquifer layers.

6.6 Governance, Accountability, and the National Water Agreement

The Terms of Reference direct the Commission to consider governance options to improve the overall sustainability of the industry, and to have regard to the NWA as the successor framework to the NWI. The NWA provides an important opportunity to embed higher standards for groundwater measurement into refreshed national water policy from the outset.

We submit that the NWA's implementation should include, as a governance measure, the development of national minimum standards for aquifer hydraulic testing. Such standards would specify which parameters must be measured (T, K, and S), the methods acceptable for regulatory submissions, uncertainty reporting requirements, and data formats for submission to national registers such as the Bureau of Meteorology's water information systems. Embedding these standards in the NWA framework would create clear accountability, reduce inter-jurisdictional inconsistency, and support the Basin Authority's monitoring obligations under sections 172 and 43–44 of the Water Act 2007.

6.7 Aboriginal and Torres Strait Islander Peoples and Closing the Gap

The Terms of Reference specifically require the Commission to consider the perspectives and socio-cultural rights of Aboriginal and Torres Strait Islander peoples, and the government response to recommendations of the independent review of the National Agreement on Closing the Gap. The NWA was developed with guidance from the Committee on Aboriginal and Torres Strait Islander Water Interests to elevate Aboriginal and Torres Strait Islander water interests and values.

Access to safe, reliable drinking water is a fundamental determinant of health outcomes in Aboriginal and Torres Strait Islander communities, many of which rely on groundwater as their primary or sole source. The PC's 2024 findings (9.1 and 9.2) confirm that drinking water quality issues and reporting failures are disproportionately concentrated in remote areas where Aboriginal and Torres Strait Islander communities are located. Improved aquifer characterisation in these communities is not only a technical matter — it is a Closing the Gap imperative.

The Limax System's portability and battery-powered operation make it uniquely practical for remote deployment in communities where grid power and logistical support are limited. We support the inclusion of culturally appropriate engagement processes in any community-based groundwater assessment program, and we are open to working with Aboriginal and Torres Strait Islander communities, land councils, and water authorities to develop testing programs that incorporate local knowledge of country.

A critical long-term measure — and one we strongly advocate — would be dedicated funding for Aboriginal and Torres Strait Islander peoples to undertake formal training in groundwater science and aquifer testing at Flinders University, which hosts the National Centre for Groundwater Research & Training (NCGRT). Flinders University is a natural partner for such a program given its existing collaboration with Kremford Pty Ltd on the development of the Limax System, and the NCGRT's established role as Australia's leading centre for groundwater education and research.

Such a program would ideally equip trainees with both the scientific foundation to understand aquifer systems — including aquifer hydraulics, groundwater resource planning, and the interpretation of hydraulic test results — and the practical skills to deploy and operate sinusoidal slug and pump testing equipment in the field. Graduates of the program would be qualified to conduct aquifer characterisation at their own communities' water sources, providing those communities with genuine self-determination over the assessment and monitoring of their groundwater resources. Equally importantly, trained Aboriginal and Torres Strait Islander hydrogeologists and technicians would be well placed to work across wider Australian aquifer assessment programs, contributing to the national groundwater workforce at a time when it faces significant capacity constraints.

We submit that such a training initiative would directly support multiple Closing the Gap targets, including those relating to economic participation, education, and the health outcomes that flow from reliable access to safe drinking water. It would also represent a concrete expression of the NWA's commitment to elevating Aboriginal and Torres Strait Islander water interests and values — moving beyond consultation toward genuine capability and ownership.

6.8 Regional and Remote Equity

Groundwater is frequently the primary or sole source water for regional and remote communities, yet it is consistently the least well-characterised. The structural challenges identified by the PC — including scale, customer density, workforce constraints, and source water variability — are compounded by the high cost and logistical difficulty of conventional pumping tests in these locations.

The Limax System directly addresses these structural disadvantages. Its 40–70% reduction in field time, elimination of water disposal requirements, battery-powered operation, and compact transport footprint make high-quality aquifer characterisation accessible to small utilities and remote programs for the first time. We submit that funding programs for remote water security — including Queensland's Urban Water Risk Assessment program and the Northern Territory's safe drinking water legislation reforms — should specify the use of modern, validated hydraulic testing methods capable of determining all three primary aquifer parameters.

6.9 National Consistency with Jurisdictional Flexibility

The Terms of Reference direct the Commission to balance national consistency with jurisdictional diversity. With respect to groundwater characterisation, we submit that national minimum standards for testing methods and data formats are an area where the benefits of consistency clearly outweigh the costs of jurisdictional flexibility. The parameters T, K, and S are universal physical properties of aquifers; their measurement should not vary by jurisdiction. Standardised data formats enable national-scale analysis, support inter-jurisdictional water trade, and improve the Bureau of Meteorology's ability to fulfil its national water information obligations.

At the same time, jurisdictional flexibility in how testing programs are organised and funded — including whether they are conducted by state agencies, utilities, or third-party contractors using accredited methods — is appropriate and should be preserved.

7. Recommendations

We respectfully recommend the Commission consider the following in its final report:

- **Recommendation 1 – National groundwater measurement standards under the NWA:** The NWA implementation framework should include national minimum standards for groundwater hydraulic testing, specifying: (a) the parameters to be determined (T, K, and S); (b) accepted methods, including sinusoidal testing as a method; (c) uncertainty reporting requirements (including confidence intervals); and (d) standardised data formats for submission to national registers.

- **Recommendation 2 – Recognise sinusoidal testing as an aquifer characterisation method:** Australian Government and state/territory agencies should recommend sinusoidal aquifer testing — in slug or pump test configuration as appropriate — as a method for aquifer characterisation programs where reliable and defensible storage coefficient determination is required for sustainable yield assessment, MAR scheme design, environmental outcome specification, or infrastructure investment appraisal.
- **Recommendation 3 – Funding conditions for infrastructure investment:** Australian Government funding for water infrastructure (including through the National Water Grid program) should require that hydraulic feasibility assessments use validated methods that robustly and defensibly determine all three primary aquifer parameters, with quantified uncertainty, consistent with peer-reviewed practice and the standards recommended in Recommendation 1.
- **Recommendation 4 – Remote and regional programs and Indigenous training:** Funding programs targeting water security in remote and regional communities — including programs relevant to Closing the Gap targets — should require the use of modern hydraulic testing methods suited to remote operational conditions, with results integrated into national groundwater databases. In addition, dedicated funding should be provided for Aboriginal and Torres Strait Islander peoples to undertake formal training in groundwater science and aquifer testing, ideally through Flinders University's National Centre for Groundwater Research & Training. Such a program would equip trainees to conduct sinusoidal aquifer testing at their own communities' water sources and to participate in wider national aquifer assessment programs, directly supporting Closing the Gap targets relating to education, economic participation, and health.
- **Recommendation 5 – Pricing and regulatory frameworks for data quality:** The Commission should consider whether pricing and asset management frameworks under economic regulation can be adjusted to recognise the long-term value of reliably and defensibly characterised aquifer data, including by treating investment in high-quality characterisation as a prudent capital expenditure.
- **Recommendation 6 – Environmental contaminants and MAR:** National and jurisdictional programs for contaminated site assessment and managed aquifer recharge should incorporate modern aquifer testing standards, including sinusoidal methods that do not require extraction of potentially contaminated water, in their regulatory and assessment frameworks.
- **Recommendation 7 – Support for Australian groundwater innovation:** Policy settings — including procurement frameworks and research funding through Flinders University's National Centre for Groundwater Research & Training (NCGRT) — should support the ongoing development and adoption of Australian-developed groundwater characterisation technologies, including the Sinusoidal Testing System.

8. References

Barker, J.A. (1988). A generalized radial flow model for hydraulic tests in fractured rock. Water Resources Research, 24(10), 1796–1804.

Black, J.H. and Kipp, K.L. (1981). Determination of hydrogeological parameters using sinusoidal pressure tests: A theoretical appraisal. Water Resources Research, 17(3), 686–692. https://doi.org/10.1029/WR017i003p00686

Cardiff, M., Barrash, W. and Kitanidis, P.K. (2013). Hydraulic conductivity imaging from 3-D transient hydraulic tomography at several pump test scales. Water Resources Research, 49(11), 7139–7150.

Depner, J.S. and Rasmussen, T.C. (1999). Hydrodynamics of Time-Periodic Groundwater Flow: Diffusion Waves in Porous Media. AGU/Wiley.

Guiltinan, E. and Becker, M.W. (2015). Measuring well hydraulic connectivity in fractured bedrock using periodic slug tests. Journal of Hydrology, 521, 100–107.

Nefzi, A., Paradis, D., Lefebvre, R. and Bour, O. (2025). Field deployment and analysis of hydraulic tomography experiments with periodic slug tests in an anisotropic littoral aquifer. Journal of Hydrology, 656.

Ogata, A. and Banks, R.B. (1961). A solution of the differential equation of longitudinal dispersion in porous media. US Geological Survey Professional Paper 411-A.

Productivity Commission (2024). National Water Reform 2024. Final Report, Canberra.

Rasmussen, T.C., Haborak, K.G. and Young, M.H. (2003). Estimating aquifer hydraulic properties using sinusoidal pumping at the Savannah River Site, South Carolina, USA. Hydrogeology Journal, 11(4), 466–482. https://doi.org/10.1007/s10040-003-0255-7

Rasmussen, T.C. (2026). Sinusoidal Aquifer Testing. Presentation, University of Georgia, Athens.

Sudicky, E.A., and Huyakorn, P.S., 1991. Contaminant migration in imperfectly known heterogeneous groundwater systems. Journal Reviews of Geophysics. Pages 240-253.

Theis, C.V. (1935). The relation between the lowering of the piezometric surface and the rate and duration of discharge of a well using groundwater storage. Transactions, American Geophysical Union, 16, 519–524.

Water Act 2007 (Cth), as amended (Compilation No. 34, 1 July 2025).

Water Amendment Act 2008 (Cth) (No. 139, 2008).

Kremford Pty Ltd welcomes the opportunity to provide further information, arrange a field demonstration of the Limax System, or discuss how sinusoidal aquifer testing technology could support specific regulatory programs under consideration by the Commission.

Kremford Pty Ltd —Kieran Harford [*www.kremford.com.au*](http://www.kremford.com.au)