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17 March 2026
Hon Amanda Rishworth MP
Minister for Employment and Workplace Relations
Via email: Minister.Rishworth@dewr.gov.au

Proposed workplace exposure limits Chlorine

Dear Minister,

I write in relation to your consideration of a change to the workplace exposure limits for nine specific chemicals, outlined in a Decision Regulatory Impact Statement (DRIS) in late 2024 prepared by Safe Work Australia. One of the nine chemicals included in the DRIS is Chlorine, which you will recognise as a key product utilised in swimming pools throughout Australia.

Unfortunately, SPASA was not advised of the DRIS process, nor have we received any outreach from Safe Work Australia since its release, despite the obvious impact the outcome of this decision would have on our members. It is notable that the consultation addressed the contentious issue of respirable crystalline silica, and primary attention by submissions received has been on that issue.

Under Australian laws Chlorine is a key chemical utilised for the sanitisation of water in swimming pools. While the regulatory framework for pool water is complex, ultimately pool water must meet current standards, including minimum and maximum levels, for safety and efficacy as a disinfectant. There are various options available to pool operators and owners to achieve this.

In the context of the proposed changes to the workplace exposure limits for airborne contaminants which may impact 'workers' operating at aquatic facilities and potentially also apply to pool service technicians in other environments, SPASA does not support the proposed change in the current limits.

One of SPASA's primary concerns is that if these exposure limits are introduced, in the timeframe proposed, then not only will it have significant impact to small and family businesses throughout Australia, but they may also have serious ramifications for the viability of public and council pool operations as they will likely be unable to meet the required levels without extensive and expensive retrofitting works and technology implementation.

We are seeking your support to exclude chlorine from the nine chemicals and retain the current limits until further targeted consultation, research and engagement is undertaken with the swimming pool industry and aquatics facilities operators, to fully determine the most appropriate exposure limits, and develop an implementation timeframe that can feasibly be met by all stakeholders.

Details of our position and concerns with progressing this change as proposed are attached.

I would appreciate the opportunity to be further consulted on this matter and can be contacted on kristin@spasa.com.au.

Yours sincerely,

Kristin Brookfield
Chief Executive Officer

CC: Hon Sophie Cotsis MP, Minister for Work Health and Safety, Minister for Industrial Relations; Hon Ben Carroll MP, Minister for WorkSafe and TAC; Hon Jarrod Bleijie, Minister for Industrial Relations; Hon Kyam Maher MLC, Minister for Industrial Relations and Public Sector; Hon Simone McGurk MLA, Minister for Industrial Relations; Hon Guy Barnett MP, Minister for Small Business, Trade and Consumer Affairs; Hon Marie-Clare Boothby, Minister for Tourism and Hospitality; Mr Michael Pettersson MLA, Minister for Skills, Training and Industrial Relations

ATTACHMENT 1

Evidence of the problem

SPASA does not believe the proposed change is aligned with international standards, which are more practical at the same time as providing an improvement in exposure levels, such as South Africa's where they have 0.2 ppm TWA / 0/8 ppm STEL.

The DRIS does not appear to be supported by adequate evidence of the risks from the current limits or the proposed limits on chlorine in the Australian context.

Key stakeholders such as Work Safe WA have raised their concerns stating that *"Adoption of a TWA standard for an irritant is not endorsed, noting that protection from other potential health effects through the change is not definitive or quantified."*

SPASA agrees with their position that the *"The proposed reduction seems impractical to measure reliably and does not align with existing evidence of risk at the current standards."*

Advice from SPASA members indicates that while there may be a place for a TWA in relation to the risk of chronic exposure to chlorine, the lowering of the levels to 0.1ppm is extreme and will be impossible to manage in real world operations.

Reviewing the submissions received to date, it appears the majority of respondents support retention of the current standards (Option 1).

Within the DRIS consultation, the Western Australian WHS regulator raised concerns about the impact of the change on the swimming pool industry, noting that indoor swimming pools regularly see chlorine levels in the 0.2 to 0.5 ppm range.

Alignment with other standards that influence water quality for swimming pools must also be considered to ensure that one regulation is not in conflict with others such as Australian drinking water guidelines and AS 3633.

Additional benefits are not identified or quantified. Significant uncertainty within the report.

There are serious concerns about the accuracy of the DRIS and its capacity to provide a sound basis for regulatory action.

The DRIS includes the admittance that, "*Health benefits were not able to be quantified"* for chlorine. It proceeds to describe expected health benefits but does not clearly identify or quantify the additional benefits of the proposed WELs for chlorine when compared to the existing WES.

Most of the quantified benefits relate to Workers Compensation Claims, yet SWA is unable to confirm the nature or cause of these claims in relation to chlorine and if the proposed WELs would make a material impact. There's a point here about the issues being likely related to extremely high exposures

> *"Workers' compensation data may include claims resulting from exposure in excess of the current WES. Where this is the case, not all benefits captured would be attributable to the proposed WEL."*

Additionally, the "health evidence" provided in the Ministers' briefing only says, "*Sampling and analysis: The recommended value is quantifiable through available sampling and analysis techniques."* But fails to outline which techniques and whether they are practical to implement.

- SWA has not provided a scientifically defensible justification that adopting a new 8-hour TWA of 0.1 ppm for Cl2 (Australia does not currently list a TWA for Cl2) is appropriate or that doing so will result in a meaningful reduction of risk to workers.
- SPASA can find no example of an international peer jurisdiction that has adopted the ACGIH Cl2 TWA recommendation as an enforceable WELs (Section 2.2.3, Stantec, 2024).
- However, SPASA notes SWA's proposal to reduce the peak limitation for Cl2 is consistent with many of the representative international peer jurisdictions identified (Section 2.2.1, Stantec, 2024).

Industry and Community impact

The DRIS does not adequately address the range of workplaces and workers that can encounter airborne chlorine. The impact is significant and without proper consideration and setting of this standard at a practical level, the impact on businesses, large and small, will be impractical and in our view, unnecessary.

The businesses we believe will be impacted by the change include:

- Commercial (public and private) pool operators - aquatic centres, hotels, schools, body corporate pools.
- Indoor heated pools specifically - the ambient air issue makes this problematic.
- Pool shops and retail – small businesses without capacity to manage and implement the requirements that would emerge from this change.
- Mobile pool service technicians - they're moving between multiple sites per day, so the 8-hour TWA becomes cumulative across all those jobs.
- Chemical distributors and warehouses - bulk handling operations.
- Water sanitisation equipment manufacturers - many of whom test in-house.
- Domestic service businesses - lower concentration exposure, but they will still need to monitor and comply.
- Pool builders during commissioning - high chemical dosing during start-up.
- Pool inspectors - while mostly visual checks, they may have to enter plant/pump rooms

Detailed Impact on Public Pools

The changes will most significantly impact public pools operated by local governments across Australia. This includes Council pools, aquatic centres, hotel pools, body corporate facilities.

For these facilities to be compliant, we estimate that they would be looking at:

- Major ventilation overhauls: $15K-50K for a typical facility, but big aquatic centres could easily be $100K+.
- Continuous monitoring systems: $10K-$25K.
- Chlorine gas detection and alarms: $3K-$8K.
- Retrofitting automated dosing to reduce manual handling: $8K-$20K
- Training for pool operators: $500-$1.5K per person.
- Ongoing respiratory protection programs: $2K-$5K annually.

Levels of chlorine or chloramine in indoor heated swimming pools are typically 0.2 - 0.5ppm. Setting a TWA level at 0.1ppm may adversely affect the viability of indoor heated swimming pools.

Additionally, there is an issue with pools being indoors. If the ambient air is already 0.2-0.5 ppm, then major air-handling upgrades would be required to the entire facility, not just the plant room. That could be $100K-$500K+ for a large indoor centre

Detailed Impact on Pool Shops:

Pool shops across Australia manage chlorine handling on a daily basis. These business premises may require ventilation upgrades in their chemical storage areas which could equate to:

- Updated exhaust systems and ducting: $5K-$15 depending on the space.
- Personal monitoring gear: $2K-$5K per location.
- Upgraded PPE: $500-$1K per staff member.
- Storage area modifications to improve airflow; $3K-$10K.
- Training and procedures: $500-$1K per person.

A typical independent pool shop would be facing a minimum of $15K-$40, in an industry where margins are already tight.

Detailed Impact on Service Businesses:

Pool service technicians and mobile pool inspectors will be impacted, needing to upgrade or add:

- Personal monitoring equipment for each tech: $1.5K-$3K.
- Respirator programs with fit testing: $500-$1K per tech per year.
- Upgraded PPE: $300-$800K per tech.
- Training upgrades: $500-$1K per tech.
- The workflow impact is significant too - jobs will take longer because techs need to set up ventilation, do pre-work monitoring, etc. We estimate a 15-20% increase in service time, which gets passed on to customers.

Detailed Impact on Manufacturers:

Manufacturers conduct in-house testing to validate chlorine output from chlorinators they manufacture. These businesses will need:

- Testing lab ventilation upgrades: $20K-$50K.
- Possibly enclosed testing chambers: $30K-$80K.
- Continuous monitoring in test areas: $15K-$30K.
- New testing protocols and documentation: $10K-$20K.
- Staff training and certification updates.

Rough industry-wide estimate would equate to around $50-150 million nationwide of just capital costs which does not include the ongoing monitoring, training refreshers, and compliance documentation.

Broader Cost-Impacts

Water Services Australia's submission points out that:

- The proposed change to Cl2 exposure limits is expected to have a cost impact of $144M over a 10-year period to upgrade fixed monitoring equipment to be capable of validating that current exposure is below sub ppm levels. Similar costs for chlorine ($654M) are reflected in SWA's consultation paper (SWA, 2024) noting these consider costs across all businesses including and beyond the water sector
- Additional non-cost impacts relating to the difficulty measuring and ensuring compliance with the 0.1 ppm TWA are expected due to the dependency on fixed and portable electrochemical cell type sensors which cannot be relied upon at this concentration.

Questions on the feasibility of measuring and monitoring the proposed limits

The detection limit of the most common methods is 0.1ppm (EPA OAQPS26), 0.3ppm (OSHA ID126SG). A high-cost method is available that has detection limits of 0.007-0.5ppm (NIOSH 6011). As such there will be significant challenges to accurately measure concentrations at the proposed levels. Regulatory enforcement will be difficult if accurate measurement and a proven risk to health for the workers cannot be established.

While we understand SWA believe there are "commercially available methods" that can measure down to this level with "sufficient sensitivity and certainty" these are found in a lab environment with controlled conditions, which support the ability to measure 0.1 ppm.

This is clearly not the same as measuring it reliably in a real workplace which must factor in a variety of variables such as:

- Plant rooms have varying temperatures, humidity, air movement.
- Multiple chlorine sources (stored chemicals, dosing systems, off-gassing from return lines)
- Mobile techs working across different sites
- The ability to track an 8-hour TWA when a tech is attending multiple service calls at multiple locations.

With regard to the 15-minute peak of 0.4 ppm, a business will need real-time continuous monitoring to catch these short-duration spikes. That equipment exists but is expensive ($3K-$5K per unit) and needs regular calibration.

The concern is that we end up with a regulation that's technically measurable but practically unenforceable, we may see outcomes which are not ideal:

- Reactive, not proactive enforcement: Regulators only test when there's been an incident.
- Businesses trying to do the right thing get buried in monitoring and documentation costs.
- Non-compliance is considered sensible due to the complexity and cost of compliance.

Water Services Australia's submission points out that:

- Personal Gas Monitors (PGMs) are not capable of accurately detecting the proposed TWA values for chlorine (Section 3.3, Stantec, 2024).
- Air sample collection methods (NIOSH) are limited in accuracy below the action level, have significant time lag between sampling, and are unable to discern variable and peak concentrations (Section 3.3, Stantec, 2024).
- It would be difficult to demonstrate compliance with the proposed TWA limits with available exposure monitoring methods.

PGMs currently serve as the standard method for monitoring chlorine or hydrogen sulphide in industry, given their capability of monitoring concentrations in real time, where dangerously elevated levels can be detected immediately. However, PGMs cannot accurately measure to the proposed levels for chlorine or hydrogen sulphide.

Proposed timeframe

SPASA considers that moving to implement this change from 1 December 2026 is inappropriate and would in fact be simply impossible given the extensive cost burden, monitoring equipment acquisition, and construction retrofitting which would be required. More importantly the lack of genuine industry consultation on this issue means that impacted businesses have almost no awareness of this proposal and the changes it will bring.

If this timeline were to go ahead, SPASA believes many aquatic facilities (public and private) would be unable to operate, and many small businesses would be unable to trade and maintain compliance. This outcome can be easily avoided by undertaking the necessary, specific consultation required for the change.