Ms Joanna Fleer
Parliamentary Officer
Environment, Resources and Development Committee
Parliament House
North Terrace
ADELAIDE SA 5000

Email: ERDC.Assembly@parliament.sa.gov.au

6 October 2021

Dear Ms Fleer

Re: Parliamentary Inquiry into Per- and Polyfluoroalkyl Substances (PFAS) contaminated waste disposal

Thank you for the opportunity to provide feedback on the Environment, Resources and Development (ERD) Committee's Parliamentary Inquiry into Per- and Polyfluoroalkyl Substances (PFAS) waste disposal. The Waste Management and Resource Recovery Association of Australia (WMRR) is the national peak body representing Australia's $15.5 billion waste and resource recovery (WARR) industry. Nationally, we have more than 2,000 members from over 500 entities that operate in a broad range of organisations, the three (3) tiers of government, universities, and NGOs.

WMRR's members are involved in the breadth and depth of waste management and resource recovery, engaging in significant activities within the Australian economy, including community engagement and education, infrastructure investment and operations, collection, manufacturing of valuable products from resource recovered materials, energy recovery, and responsible management of residual and problematic waste.

An integrated WARR system drives jobs and economic growth and at present, the industry employs approximately 50,000 people across Australia. In South Australia (SA), the waste, recycling, and remanufacturing industry is a significant contributor to the state, through:

- a turnover of more than $1.4 billion[1];
- Gross State Product (GSP) of $1.08 billion[2]
- the employment of 4,800 full-time equivalent persons[3]; and
- a reduction of greenhouse gas emissions by 1.32 million tonnes of CO2-e through recycling activities[4].

WMRR understands and supports the need to take a precautionary approach within the WARR industry, including towards PFAS, and while our responses to the committee's terms of reference can be found below, we would first highlight the following points.

[1] Inside Waste Industry Report 2017-18: Volumes and Values
[2] 2019-20 Recycling Activity Survey for South Australia, Green Industries SA, 2021
[3] Ibid
[4] Ibid

Firstly, there remains significant misinformation in relation to the hazardous nature of PFAS being placed into the public domain, which has so far failed to inform or empower the SA community to understand both the prevalence and impact of this material. While WMRR recognises SA as having been the first Australian state to ban the use of PFAS in firefighting foams in 2018, such an approach - if government is genuinely concerned about PFAS being hazardous to human health - must equally be applied to broader product categories given the presence of PFAS in everyday household items (due to their effectiveness as a fire retardant) such as microwaveable popcorn bags, pizza boxes, aerosols, children's clothing, carpet, and non-stick cookware.

The challenge created by PFAS in the environment for both government and the WARR industry does not originate from the WARR sector but rather, stems from the start of the supply chain, that of product design and manufacture. The WARR industry plays a vital role at the end-of-pipe for end-of-life materials, meaning we provide pathways for safe and sustainable recovery, recycling, and/or disposal; however, it has no ability to control the materials that are generated and consumed.

Industry would like to take this opportunity to draw the committee's attention the April 2019 findings by an independent expert health panel established by the federal government in relation to PFAS, which concluded that there is "*mostly limited, or in some cases no evidence that human exposure to per- and poly-fluoroalkyl substances (PFAS) is linked with human diseases*" and there is "*no current evidence that suggests an increase in overall cancer risk.*" To err on the side of caution, it is understood the panel noted that given PFAS continue to persist in humans and the environment, exposure to these chemicals should be minimised and future research should focus on long-term studies and solutions.

Noting that to-date, government at both state and federal level continues to enable this substance to be commonly available within everyday products, it is unclear whether there is genuine concern about this substance beyond firefighting foam. WMRR submits that there must be coordinated attention nationally about how Australia classifies and manages this substance before the disposal stage, not just simply continue to focus on end-of-pipe alone given this is a supply chain issue.

If this substance is of genuine concern, urgent positive action is required by government to ensure that generators and suppliers who continue to bring these chemicals to market are held to account, or at the very least, the community is made aware that they are purchasing/using items that contain PFAS. WMRR proposes that this would be most effectively done through a polluters-pay principle to appropriately label and manage these products from production to end-of-life, and WMRR would encourage the SA government to work with the other jurisdictions and the federal government to develop programs such as the EU's REACH initiative (Register, Authorisation and Restriction of Chemicals Program), as well as the Classification, Labelling and Packaging Regulation (CLP), which requires identification of the material to allow consumers to make an informed choice.

WMRR is however, aware that Australian governments have recently commenced working together to introduce new regulations for chemicals using an Industrial Chemical Environmental Management Standard (IChEMS). As a first step, the *Industrial Chemicals Environment Management (Register)* Act 2021 (Cth) was passed earlier this year and the IChEMS Register is to be adopted into state

environmental laws across Australia over 2022. Under this federal Act, chemicals will be categorised on an IChEMS Register based on their risk characteristics, and management actions will be listed.

WMRR understands that the Register is anticipated to include PFAS from an early stage (likely 2022), with PFAS possibly to be inserted under "Schedule 6 - severely restricted relevant industrial chemicals". This inclusion would begin to introduce controls on PFAS in many imported and manufactured products and articles while continuing to allow their inclusion in a limited range of goods, which WMRR supports. However, we are concerned about the timeframes for progressing this, as well as recognise the need to continue to manage the large range of materials containing PFAS that are already circulating within our environment, relative to changing waste management expectations. At this time, it is also unclear how, or even if, this scheme will be implemented to assist consumers, e.g., via a labelling or an education scheme.

The point must be stressed that in the absence of a producer responsibility scheme, the reality is that the WARR sector does provide the most appropriate safe disposal solution in highly engineered containment facilities. This will continue to be necessary given the lack of appropriate and consistent policy across the states in managing PFAS even despite the existence of an agreed PFAS National Environmental Management Plan (NEMP); this inconsistency was highlighted greatly by SA's recent decision to go it alone by enforcing an effective zero limit by not approving best practice landfills.

Thank you for taking the time to review WMRR's full submission found below, which responds to the committee's terms of reference and elaborates on several points above. Please do not hesitate to contact the undersigned if you would like to further discuss WMRR's feedback. We would also welcome the opportunity to present to the committee.

Yours sincerely

Gayle Sloan
Chief Executive Officer
Waste Management and Resource Recovery Association of Australia

Submission

Terms of reference	WMRR's response
(a) Criteria for disposal of PFAS contaminated waste;	There is a nationally agreed framework in place for disposing and storing of PFAS, that being the PFAS NEMP, which industry believes should be consistently applied nationally to provide certainty to all. In addition to providing nationally agreed guidance on the management of PFAS in the environment, including prevention of the spread of contamination, the PFAS NEMP also deals separately with "onsite stockpiling, storage and containment" (Section 10) as occurs at highly contaminated sites and "permanent disposal of PFAS-containing waste to landfill" (Section 14) where concentrations fall below recognised criteria and in accordance with our treaty obligations under the Stockholm Convention. PFAS are prevalent in a range of materials and therefore, unsurprisingly are found in general waste streams in trace concentrations, as well as in soils affected by firefighting foam. These soils are managed as a smaller quantity of highly impacted soils (treated/storage pending treatment), and a large quantity of lightly impacted soils (restricted use but not economically treatable; left in situ, in temporary storage or stockpiles, or landfilled in accordance with NEMP/EPA requirements). The current NEMP landfill acceptance criteria limit total concentrations to comply with obligations under the Stockholm Convention, and both total and mobile (leachable) concentrations are limited to exclude highly impacted and treatable materials. The limit thresholds for mobile (leachable) PFAS compounds when compared to those found in existing landfill leachates are: • Similar to the single composite lined landfill limit. • An order of magnitude higher (double composite lined landfill limit). These criteria set threshold limits to prevent highly impacted materials entering landfills, and align the limits with both general and restricted waste landfill containment systems. The table below shows reported PFAS concentrations in Australian landfill leachates, as well as the NEMP and NSW EPA leachability criteria.

PFAS Species	Landfill Acceptance Criteria (micrograms per litre)					Landfill Leachate Concentrations (micrograms per litre)					
	NSW (EPA, 2016)[1] TCLP leachable concentration		NEMP 2.0[2] ASLP leachable concentration			Victoria (24 landfills)[3] (Simmons, 2019)			Australia-wide (27 landfills)[4] (Gallen, 2017)		
									Operating		Closed
	General Solid Waste	Restricted Solid Waste	Unlined[5]	Single Composite	Double Composite	Mean	Min.	Max.	MSW (Mean)	C&D (Mean)	All (Mean)
Perfluorooctanoic Acid (PFOA)	500	2000	0.56	5.6	56	0.79	0.09	3.12	0.39	0.41	1.4
Perfluorohexanesulfonic Acid + Perfluorooctanesulfonic Acid (PFHxS + PFOS)	50	200	0.07	0.7	7	0.87	0.05	3.61	1.6	6.1	0.78
Total PFAS	-		No criteria (discuss with regulator)			6.4	1.5	38	1 - 25		

[1]NSW EPA (2016) Addendum to the Waste Classification Guidelines (2014) - Part 1: classifying waste, October 2016

[2]PFAS National Environmental Management Plan Version 2.0 – January 2020
[3]Simmons, N (2019), PFAS Concentrations of landfill leachates in Victoria, Australia – Implications for discharge of leachate to sewer, proceedings of Sardinia 2019. © 2019 CISA
[4]Gallen, C, et al. (2019), Journal of Hazardous Materials 331 (2017) 132–141.
[5]Drinking water criteria (Department of Health, 2017)

PFAS are present in our households, workplaces, daily waste streams and landfills, and this will continue to occur until manufacturers eliminate their use in products and these products have been recovered at end-of-life over the coming decades. Preventing soils containing PFAS entering landfills below the NEMP limits does not necessarily materially affect the levels of PFAS present at a landfill, or within the community.

WMRR is advocating for the consistent adoption of the NEMP limits as opposed to setting SA-specific criteria as the former are based on the latest available science.

Further, residual PFAS at low concentrations are better placed in properly lined, highly engineered, and appropriately managed containment sites (i.e., landfills). WMRR is concerned that South Australia's proposal to only licence certain landfills for PFAS disposal is inappropriate and could create perverse outcomes such as inappropriate stockpiling and disposal. Additionally, the transportation of PFAS-contaminated materials across the border to facilities in other jurisdictions, for example, is not a viable solution. In addition to shifting the 'problem' elsewhere, it violates the proximity principle, which stipulates that waste is best dealt with where it is created, as well as potentially lead to illegal dumping of this material due to the lack of available and accessible locations in SA to dispose of this material – which is a far worse environmental outcome for the SA community.

(b) Criteria for site selection (landfill engineering);	The WARR industry currently provides highly engineered containment facilities for PFAS that is already within the community and the reality is that PFAS will already exist at these landfills given the prevalence of this material in everyday household items; noting that the NEMP contemplated landfills as being appropriate sites for this purpose when they are designed to the requisite standard. South Australia's Municipal Solid Waste (MSW) landfill practices and sites are considered amongst Australian best practice, and the state's double composite-lined landfills are deemed world's best practice.

	WMRR's position is that SA must remain consistent with the NEMP requirements, which delineate design expectations based on the two (2) concentration thresholds, in conjunction with existing planning and licensing frameworks and our treaty obligations under the Stockholm Convention and Basel Convention. There is no reason to deviate from these as a regulatory benchmark. Additionally, development of remote facilities and the transportation of PFAS-contaminated materials across the border to facilities in other jurisdictions, for example, is not a viable solution. As well as shifting the 'problem' elsewhere, it violates the proximity principle understanding that waste is best dealt with where it is created, as well as potentially leading to illegal dumping of this material due to the lack of available and accessible locations in SA to dispose of this material, which is a far worse environmental outcome for the SA community.
(c) Consequences of not having an appropriate pathway;	As noted above, SA's highly engineered, best practice landfills are the appropriate pathway for disposal of PFAS below NEMP thresholds. The potential consequences of removing the pathway proposed by the NEMP for low residual concentrations include a number of poor outcomes and behaviours: • Stakeholders will not look for PFAS as it is too hard, which means that public health and the environment are not being adequately protected. • Stockpiling of materials or contamination left in-situ (in limbo) at a wide range of sites rather than being consolidated and managed at regulated sites. • Many recycling efforts could falter if there is no pathway for residuals with trace levels of PFAS below the NEMP thresholds • Additional cost impost to development in SA. • Illegal disposal could increase. • An inconsistent approach being applied where residual concentrations for which no viable treatment alternative exists or is available are acceptable in mixed or general waste streams, but not segregated waste streams.
(d) Any other related matters.	PFAS and the inconsistent application by Australian jurisdictions towards their management both within the supply chain and at point of disposal represent a significant national issue that is not being adequately addressed by any jurisdiction at this time. The reality is it is very challenging for the WARR industry to not accept material that contains PFAS at a facility gate as we simply cannot see PFAS - it is not in any way visible to the naked eye – and if it is not visible, we cannot reject the material. As highlighted above, PFAS are prevalent in many every day household items, and as such, will likely be present in 'red bin' municipal solid waste that comes from kerbside. The implication therefore, should the SA government not consider the challenges, factors, and issues noted above, is that the government could risk having to redirect all council kerbside to specified facilities only,

	or worse take this material across the border – both of which will come with significant challenges and risks as explained throughout our submission. To reiterate, if government is genuinely concerned about PFAS, manufacturers and suppliers of consumer products must bear the responsibility for reducing the levels of PFAS being sent to landfills by designing out PFAS from their products, and at a very minimum, labelling their products to empower consumers. WMRR encourages the EPA to work with its state counterparts and federal government to develop a national solution to this issue that includes designing out these materials and holding them to account through a polluters-pay scheme so that these materials are managed at end-of-life by those who create them. Australia absolutely needs action on PFAS that continue to come to the Australian market via products that extend far beyond firefighting foam. We need federal government-led initiatives, similar to those that have been in play in the European Union to manage this chemical, such as the REACH program (Register, Authorisation and Restriction of Chemicals Program), as well as the Classification, Labelling and Packaging Regulation (CLP) as noted above. In the absence of such action, the WARR industry is the safest and most appropriate disposal pathway for the community.