



NTN Submission Draft PFAS National Environment Management Plan September 2017

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National Toxics Network (NTN) is a NGO (non-government organisation) network working for pollution reduction, protection of environmental health and environmental justice. Established in 1993, NTN is the Australian focal point for the International POPs Elimination Network (IPEN) and strives to achieve the full implementation of the *Stockholm Convention on Persistent Organic Pollutants (POPs)* 2001 and other relevant international and regional chemical and waste treaties. NTN is committed to a toxics free future.

As NTN's Senior Advisor, Dr Mariann Lloyd-Smith has participated in the U.N. Stockholm Convention's technical working groups for PFOS and PFOA since 2004 and was a guest presenter at the 'OECD Workshop on Perfluorocarboxylic acids (PFCAs) and Precursors - why international action is needed'. She was a member of the UN Expert Group on Climate Change and Chemicals and a co-author of the report 'Climate Change and POPs; Predicting the Impact'. NTN's Senior Researcher, Lee Bell is a member of the Stockholm Convention BAT/BEP Expert Group and the Small Inter-sessional Working Group (SIWG) of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (1992).

NTN committee members have participated in a range of state, national and international advisory bodies including:

- National Advisory Body on Scheduled Waste
- HCB Management Plan Panel
- Stockholm Convention Reference Group
- Hazwaste Act Policy Reference Group
- Dioxin Consultative Group
- NTN Observer on Hazwaste Technical Advisory Group
- National Industrial Chemicals Notification Assessment Scheme (NICNAS) Technical Advisory Group
- NICNAS Community Engagement Forum
- NICNAS Strategic Consultative Committee
- Australian Pesticides and Veterinary Medicines Authority Advisory Committees
- NTN Observer on the Botany Community Participation and Review Committee
- NGO Observer to the POPs Review Committee

Background

The draft PFAS NEMP reflects the views of a limited range of stakeholders who participated in the PFAS National Summit. The draft PFAS NEMP presents a government and industry viewpoint and provides little comfort to the wider civil society or to those residents impacted by PFAS contamination. While civil society was not allowed to participate or present at the Summit, one of the three keynote presentations being given by a representative of an industry consultancy working with the Department of Defence, a major PFAS polluter. This represented an unacceptable conflict of interest and it is reflected in the industry focus of the current draft PFAS NEMP. The list of Summit participants has remained confidential.

General comments

The draft PFAS NEMP leaves many important questions unanswered particularly, in regards to regulatory status, compliance and ongoing development of the plan.

What is the status of the plan ?

Will it be part of state and federal government regulation ?

Will all industries be bound by the plan ?

Will Department of Defence be bound by the plan ? How ?

What compliance activities will be in place ?

What community engagement will there be in it's further development and implementation ?

Answers to these questions are essential to assess the value and content of the Draft PFAS NEMP.

The document should also outline current knowledge on the extent of the problem, e.g., the number of contaminated sites (estimated to be well over 100) and the number of communities affected by PFAS contamination.

Limited Aim of the PFAS NEMP

'The aim of the PFAS NEMP will be to present a nationally consistent and collaborative approach to the environmental regulation of PFAS and give confidence to decision-makers and recognise limitations on the management of PFAS imposed by international conventions, such as the Stockholm Convention.'

Surprisingly, the aim does not include protection of the environment and human health and fails to acknowledge the need to ensure confidence in wider civil society, particularly those communities affected by PFAS contamination.

Reference is made to limitations imposed by the Stockholm Convention, yet these are not defined or described and after nearly a decade, the Australian government has still not ratified the PFOS listing on the Stockholm Convention, it seems a moot point to include in the overall aim.

Similarly, later reference to Australia's response to the Stockholm Convention which states, *'Work is already underway to consider the use of PFOS, its salts and PFOA-related chemicals as part of the ratification process for its listing in the Stockholm Convention for Persistent Organic Pollutants'* fails to acknowledge that this work is nearly a decade old, and as such it is not a statement that provides confidence to any member of the NGO community or affected residents.

After such a lengthy process, it is expected that the plan would include dates as to when the Australian government would ratify the PFOS listing on the Stockholm Convention and commence consideration of PFOA and PFHxS in preparation for their listing as both have been nominated and PFOA will be considered at the Stockholm Conference of Parties in 2019. The PFAS NEMP should also include a summary of the findings on PFAS of the POPs Review Committee.

PFAS Ongoing use not addressed

The PFAS NEMP states that it is not expected to deal with the ongoing use of PFAS compounds, noting that this *'may'* be addressed through State and Territory policies and regulations or through Stockholm Convention's eventual ratification. This provides no assurance that the current and ongoing use of PFAS will not lead to further contamination. Unregulated ongoing use has led to contamination of at least 20 communities already. Unless the PFAS NEMP clearly identifies how ongoing use of PFAS and future contamination will be avoided then the plan cannot protect either the environment or human health.

Very limited number of PFAS included in scope

The PFAS NEMP states it will initially focus on a very small list of PFAS compounds for quantitative assessment, i.e., PFOS, PFOA and PFHxS, but that *'comprehensive consideration of other PFAS compounds will inform uncertainty and risk management decisions'*. However, no guidance is provided as to how it will encompass this consideration or how it will inform 'uncertainty' or aspects of risk management. The stated focus on three out of 3,000 PFAS compounds is a very minimal scope. It is acknowledged that there are few PFAS (30/3000) with commercially available analytical techniques, yet, there are up to 600 PFAS estimated to occur in, or result from firefighting foams which must be included in the plan.

PFAS chemicals that can't be monitored should not be used

The excuse that analytical techniques are not available for PFAS chemicals that are produced, sold and used in Australia is not acceptable and it is a problem of governments own making. Any chemical in commercial use should have analytical standards and analytical techniques to allow it to be tested for and monitored. Ensuring this is a responsibility of a robust industrial chemical regulatory regime.

PFAS NEMP must include by-products and mixtures

The plan acknowledges that there are likely to be complex mixtures with potential for additive and synergistic effects; *"single precursor compounds can create 10 to 20 intermediate transformation compounds with functional groups quite unlike the initial compound, and with multiple final end-point compounds."*

Those PFAS transformation products must be addressed via an assessment of the mixture, requiring at a minimum a suite of direct toxicity tests and assessments of persistence in the environment as well as bioaccumulation in a range of species including humans. This needs to form an integral part of the management plan.

Other PFAS with PBT characteristics must be included

Other PFAS demonstrating PBT characteristics of persistence, bioaccumulation and or toxicity must be included in the remit of the PFAS NEMP. While the current chemicals considered of most concern are PFOS, PFOA and PFHxS, it can be argued that these are the ones that have sufficient information to clearly demonstrate all POPs characteristics of toxicity, persistence, bioaccumulation and long range transport. Studies of other PFAS are already demonstrating PBT/POP characteristics and should be included in the PFAS NEMP. For example:

Perfluorohexanoic acid (PFHxA) is already found in humans including in amniotic fluid and human breastmilk and although it is not well-characterized toxicologically, has been shown to act as a developmental toxicant in *Xenopus* embryos in vitro, decrease survival in female Sprague Dawley rats and is negatively associated with altered testosterone levels in male adolescents.

Perfluorobutane sulfonate (PFBS), a C4 compound is found in the Arctic and is highly resistant to microbial degradation. It contaminates drinking water and is found in humans, including in children. PFBS is found in rivers and sediment near manufacturing plants and more widely, as a contaminant in rivers and marine biota such as humpback dolphins and finless porpoises. PFBS is also found in wastewater and drinking water treatment plants along with other PFCs where it is persistent to sludge treatment. PFBS is readily taken up in maize. PFBS is in wide use in outdoor consumer products such as ski waxes, jackets, trousers, and boots as well as leather samples. PFBS is not well-characterized toxicologically but has been found to disrupt lipid assemblies, modulate immune response in vitro, inhibit aromatase in human placental cells and alter heart rates and behaviour in zebra fish.

Perfluorobutanoic acid (PFBA) another C4 fluorinated compound, like PFBS is found in the Arctic. PFBA contaminates oceans, lakes, marine fish, rivers, and lakes. PFBA is found in wastewater effluent of sewage treatment plants. Like PFBS, PFBA is found in ski waxes, leather samples, and outdoor consumer products such as jackets, trousers, and boots. Like PFBS, PFBA is also efficiently translocated into plants and it is transferred to crops grown for consumption.

PFAS NEMP as an Adaptive Document

The document includes a commitment to the PFAS NEMP being an adaptive document, incorporating information and data on other PFAS compounds and analytical techniques as they become available. However, there are no details of how this will occur, who by, what time frames and what involvement civil society will have.

The community has evidence of the exceptionally long time frames that State and Federal governments have taken to respond to new information. The Australian Government was made aware of the adverse impacts of PFOS by both the OECD

assessment and by correspondence from the US EPA in 2000, but ignored these warnings for many years. In some cases, ongoing use of PFOS fire fighting foams was permitted until very recently (use may be still be current in 2017) risking further contamination. As the Australian government has taken nearly a decade to consider ratifying the PFOS listing on the Stockholm Convention, little confidence can be gleaned from general statements regarding an adaptive document incorporating new information. Detail is required.

Inadequate Guiding Principles

Only one of the Four Pillars of good chemical management is included in the guiding principles of the PFAS NEMP, i.e. Precautionary Principle

There is no reference to the essential principles of:

Right to Know: the community's right to know what is/ has been used and released, the level of contamination and options for remediation.

No data / No market: when there is no chemical information e.g., a toxicity profile, analytical techniques there should be no right to use or release the chemical product.

Substitution & Elimination: if there is a safer, better way of achieving outcomes, then this should be substituted for risks otherwise faced. This is highly relevant to the ongoing use of PFAS.

Erroneous human health claims results in lost credibility

Guiding Principle No. 1 is a focus on the protection of human health and the environment. Yet, the PFAS NEMP is based on the Australian government's erroneous claim regarding PFAS human health impacts. *"The Australian Government Department of Health advises that there is no consistent evidence that exposure to PFAS causes adverse health effects in humans."*

The PFAS MP reasserts this view with a further statement that there is uncertainty as to whether these chemicals have human toxicity. This position only serves to remove any confidence the PFAS NEMP hopes to instil in the wider community.

PFAS human health impacts are undeniable

Having been involved in the assessment of PFAS for over 10 years through the UN technical committee, NTN like many, does not share the Australian government's appraisal of the health impacts of PFAS.

While acknowledging that it is impossible to predict the impacts on a particular individual from exposure to PFAS, the evidence of human health impacts is undeniable, and for the PFAS NEMP to have any credibility it must acknowledge this.

To illustrate this, in one of the largest epidemiology studies of 69,000 people exposed to PFOA, the C8 science panel concluded that there was a probable link to PFOA exposure for diagnosed high cholesterol, ulcerative colitis, thyroid disease, testicular cancer, kidney cancer and pregnancy-induced hypertension.

In 2016, the German Human Biomonitoring (HBM) Commission advised; Following evaluation of human epidemiological studies (status: July 2015/May 2016), the HBM Commission rates effects in the following areas as **well proven, relevant, and significantly associated with exposure to PFOA and/or PFOS:**

- Fertility and pregnancy -Time to wanted pregnancy-Waiting period for pregnancies >1 year -gestosis and gestational diabetes;
- Weight of newborns at birth;
- Lipid metabolism;
- Immunity after vaccination, immunological development;
- Hormonal development, age at puberty/menarche;
- Thyroid metabolism;
- Onset of menopause

The U.S. National Institute of Environmental Health Sciences' National Toxicology Program (NTP) systematically reviewed and evaluated evidence on exposure to PFOS or PFOA and immune-related health effects to determine whether exposure to either chemical is associated with immunotoxicity for humans. Based on the health effects data from 33 human studies, 93 animal studies, and 27 in vitro/mechanistic studies relevant for addressing the objective, **NTP in June of 2016 concluded that both PFOS and PFOA are presumed to be an immune hazard to humans.**

In May 2016 the US Environmental Protection Agency advised that **human epidemiology data reported associations between PFOS exposure and high cholesterol, thyroid disease, immune suppression, and some reproductive and developmental parameters, including reduced fertility and fecundity** while similar human population data reported associations between **PFOA exposure and high cholesterol, increased liver enzymes, decreased vaccination response, thyroid disorders, pregnancy-induced hypertension and preeclampsia, and cancer (testicular and kidney).**

In September 2016, the United Nations Persistent Organic Pollutants Review Committee, (of which Australia is a member) **concluded that high cholesterol, inflammatory diseases, ulcerative colitis, thyroid disease, testicular cancer, kidney cancer, pregnancy-induced hypertension, endocrine disruption and impaired neuro - as well as reproductive development have been found to be associated with PFOA exposure in humans.**

Furthermore, exposure during a sensitive window of development may have critical effects on metabolic signalling pathways.

Based on the overwhelming evidence from independent published scientific research and other developed countries regulatory assessments, it is clear that the Australian government is alone in the view *“that there is no consistent evidence that exposure to PFAS causes adverse health effects in humans.”* Unfortunately, reiteration of this erroneous claim, seriously impacts on the credibility and acceptance of the PFAS NEMP.

Guiding Principles and Best Practice

The PFAS NEMP Guiding Principles 3, 4 and 5 address best practice, stating that best practice approaches and processes will be informed by *'existing national guidelines, ...and applicable research'* and that *'best practice should draw on accepted current scientific understanding from both domestic and international sources'*.

As previously noted, the Australian Government has rejected accepted current scientific understanding regarding PFAS. The claim that the plan will ensure world's best practice would need far more detail about the proposed undertaking, e.g., How would world's best practice be identified and how would it be incorporated into regulation?

No Guiding Principles of Information Access and Public Participation

There are no guiding principles on public participation or civil society's right to information included in the document. This clearly reflects the absence of civil society stakeholders in the development of the draft PFAS NEMP.

While Australia has not ratified the listing of PFOS, it has ratified the Stockholm Convention on Persistent Organic Pollutants and is bound by its articles including Article 10 Public information, awareness and education.

Article 10 (d) requires governments to facilitate: *'Public participation in addressing persistent organic pollutants and their health and environmental effects and in developing adequate responses, including opportunities for providing input at the national level regarding implementation of this Convention'* and to ensure *'that the public has access to the public information referred to in paragraph 1 and that the information is kept up-to-date'*, while acknowledging that Article 9.5 ensures *'For the purposes of this Convention, information on health and safety of humans and the environment shall not be regarded as confidential.'*

These obligations must be reflected in the guiding principles.

Guiding Principles and Risk

Guiding Principle 8 states that: *'Actions should be proportionate to risks'*. This statement reflects industry literature and simply serves to cement the power imbalance in contaminated site management between the polluter and the affected community. As the risks to human health have already been downplayed by government, guiding principle 8 will further place families and communities at the mercy of well-resourced industry consultants and/or governments risk assessors, who represent the polluters while defining the risks. It is an approach that compounds conflict of interest and in effect, denies the intrinsic hazards of PFAS. It is at odds with the precautionary principle.

Guiding Principle 11: *'Management, while being protective, needs to consider economic and social matters and acknowledge the limited options currently available for remediation'* should be removed. It provides a significant 'way out' for polluters providing justification not to address remediation. How and more

importantly, who would consider the economic and social matters? Such a statement as a guiding principle would adversely impact on the management and remediation of PFAS contamination.

Managing uncertainty by addressing data gaps

We acknowledge addressing PFAS incorporates many uncertainties, due to large data gaps in their toxicological profiles, lack of information on their occurrence in the environment and product confidentiality. Nevertheless, much of that uncertainty could be dealt with by addressing data gaps, obtaining information from those companies producing and selling PFAS. Information to be supplied by the manufacturers, industry users and by site holders should be mandated in the PFAS NEMP. PFAS currently used without adequate data should be phased out as a priority.

For the national management plan to be effective, information is urgently needed on:

- volumes of PFAS materials including products, the current usage and management and waste practices. Information on use should focus as a priority on dispersive uses,
- volumes and management information on all PFAS-containing wastes e.g. waste firefighting foam, contaminated solid wastes, liquid wastes, concentrates from remediation,
- volumes and management information on stockpiles of PFAS contaminated products (eg carpets, mattresses, leather, textiles, industrial textiles and clothing)
- PFAS contamination in soil, air, biota, groundwater, surface water, humans
- PFAS contaminated sites
- Analytical standards for all commercially available PFAS

This information should be collected in a nationally consistent manner and be publicly accessible.

The PFAS NEMP states that the community expects *“regulators to manage PFAS-contaminated materials and sites”*, the community also insist that polluters clean up their mess, remediate and destroy the contamination in an environmentally sound manner, and pay compensation to affected people(s) and landholders.

Priority areas for assessment

While generally agreeing with the priority areas of assessment, we take issue with the following statement regarding the prioritisation of sites for assessment.

“Prioritisation of sites for assessment of PFAS contamination and approaches to risk management, including remediation, should be proportionate to risks, and consistent with sound environmental practices and national and international obligations.”

The PFAS NEMP states there is no consistent evidence of harm to human health, so decisions about '*proportionate risks*' would inevitably influence the assessment of risk and be biased in favour of the polluter.

Implications in Question 3 suggest that other priority environment and human health criteria may be included in the PFAS NEMP. There is a range of international criteria that are relevant and could be included in the plan, e.g., USEPA combined drinking water criteria for PFOS and PFOA of 0.07ug/l, Germany's Commission on Human Biomonitoring reference values for PFOA (2 ng PFOA/mL blood plasma) and PFOS (5ng/mL). This could provide a valuable comparison to level set by Australian governments.

Decision Making in Contaminated Site Management

Despite the lack of a guiding principle ensuring effective community engagement, the PFAS NEMP acknowledges the local community is needed to assist with identifying potential exposure pathways. Community engagement and the utilisation of local and/ or traditional knowledge should underpin all site assessment and contaminated site management. It should form an integral part of the whole process from the beginning to the long-term environmental monitoring and compliance.

The PFAS NEMP outlines some of the social and economic decisions made in contaminated land management, e.g., consideration of options for *in situ* treatment or containment compared with off-site treatment or landfill and the "*need to balance remediation costs with environmental, social and economic impacts and costs.*"

The PFAS NEMP also states that "*Where possible, contaminated material should be managed on site, with transport off-site for treatment or disposal only being undertaken if necessary.However, this approach may not be technologically or economically feasible.*"

These are societal decisions that cannot be left to the polluter regardless of whether they are industry, government departments, national authorities or individuals, etc. These decisions must be made with reference to the wider community and not left up to a polluter with an obvious conflict of interest.

Community Engagement

Based on our own organisational experience and communication with the affected communities, the community engagement on PFAS contaminated sites has not been adequate or effective.

In some cases, community members access to PFAS consultation meetings were blocked by the Defence Dept. with the excuse that they were not considered as directly affected; a clear breach of Stockholm Convention obligations. Widespread dissatisfaction by affected residents indicated none of the consultations to date can be considered as effective community engagement.

As the document includes as a measure of success '*stakeholder satisfaction based on the extent to which the community is engaged and their level of trust in the approach*', we recommend the process of community engagement, including the provision of information, be clearly defined in the PFAS NEMP.

There are examples of public participation in other chemical matters on which the PFAS NEMP could draw.

Effective community engagement requires at a minimum:

- A commitment from all parties.
- Clear principles - community engagement needs to be guided by sound and equitable engagement principles, fundamental to any effective consultative, participatory or consensus process.
- A protocol on which to measure both the commitment and the effectiveness of the process.
- A comprehensive plan of action including proactive identification of stakeholders
- Publicly accessible Information Repository

PFAS contaminated bio solids and irrigation water must not be permitted

It is extremely difficult to understand how the plan could provide guidance on *“on- and off-site use of PFAS containing waters (e.g. irrigation and groundwater recharge) and solid waste (e.g. biosolids, sediments, soils and debris – including fill material).”*

PFAS chemicals like PFOS and PFOA are extremely persistent. The results of various degradation tests and field monitoring data support the conclusion that no biodegradation of PFOA or PFOS occurs and they do not undergo any abiotic or biotic degradation under relevant environmental conditions. Any release of PFAS would add to the current burden of PFAS contamination. All releases of PFAS contaminated material must be avoided. The use of bio solids and irrigation water contaminated with PFAS has led to considerable land and groundwater contamination in European countries. By including these unsound and unsafe disposal practices in the PFAS NEMP, it builds an expectation that dilution is an acceptable solution to PFAS pollution, seriously risking further contamination.

Remediation of PFAS-contaminated materials should be based on non-combustion environmentally sound technologies

The PFAS NEMP states that high temperature destruction of some types of PFAS waste is used overseas and represents a promising option, and that a *‘small number of Australian facilities, such as those for treating medical waste, soil treatment and cement kilns, are trialling or seeking approval for thermal destruction.’*

Information provided to the POPs Review Committee about the unintentional formation of PFOA from inadequate incineration of fluoropolymers e.g. in municipal waste incinerators as well as a dearth of information on emissions from hazardous waste incinerators treating PFAS, indicates this is a serious concern. All information on trials using thermal destruction, the types, volumes and emissions as

well as information on the engagement with the local communities should be immediately released. As stated previously, this information cannot be claimed as confidential.

Preferred hierarchy of options for site clean-up should be a matter for comprehensive community engagement

Most preferred options refer to *'on-site treatment of the contamination so that it is destroyed or the associated risk is reduced to an acceptable level;'* and *'off-site treatment of excavated soil (or contaminated waters), so that the contamination is destroyed or the associated risk is reduced to an acceptable level, after which soil is returned to the site or waters discharged.'*

These options include issues that should be decided at community level, e.g., when is associated risk reduced to an acceptable level? While on-site treatment maybe preferred by the polluter, is it acceptable to the residents living adjacent to the contaminated land?

The document refers to other actions if these are not practical. Practicality is not solely a scientific issue. It has a clear social and economic aspects as do decisions about containment and consolidation of waste on site, net environmental benefit and most importantly, the distribution of benefits and impacts of each option. The plan states that *"Acceptance of any specific option or mix of options is therefore a matter for the responsible decision-maker/regulator"*, however, this must be informed by effective community engagement and long-term environmental sustainability.

Landfill disposal and off-site containment

The documents states that *"Where a landfill is located close to a farm or market gardens, it is important to consider off-site impacts through surface and groundwater, particularly if the farm or market garden is using the groundwater."* This is an unacceptable statement as, regardless of where a landfill is situated off site, all long-term impacts must be considered.

The statement *"Operational and post-closure management of landfills and off-site containment facilities must ensure that PFAS are contained"* must be followed with requirement for ongoing liability for the landfill and its wastes in perpetuity. As PFAS chemicals do not break down, representing significant long term risk, legal liability and adequate financial sureties in the form of bonds must be provided well into the future.

Performance standards must reflect Stockholm Convention obligations

We welcome the document's statement that treatment technologies must be able to irreversibly transform PFAS into 'benign' compounds either by destruction or stabilisation (e.g. that reduces the transportability in water) but note there is no definition of a 'benign' compound. The use of the term benign should be replaced with the Stockholm Convention's obligations Article 6.1 d ii of the Stockholm Convention.

POPs “*must be disposed of in such a way that the persistent organic pollutant content is destroyed or irreversibly transformed so that they do not exhibit the characteristics of persistent organic pollutants or otherwise disposed of in an environmentally sound manner when destruction or irreversible transformation does not represent the environmentally preferable option....*”

Performance standards for treatment and destruction facilities must include treatment efficiency evaluation and post-treatment validation.

The establishment of hazardous waste destruction facilities has had a rocky path in Australia. While communities in three states rejected hazardous waste incinerators, a well-planned inclusive process (3C process) undertaken in West Australia resulted in at least two communities requesting the establishment of a non-combustion hazardous waste facility in their area. This model supported by full information provisions about treatment trials is essential in order to establish the required PFAS destruction facilities. Otherwise, attempts to establish PFAS destruction facilities will inevitably fail.

Storage of PFAS-contaminated wastes and soils

The PFAS NEMP provides only two paragraphs on storage of PFAS contaminated wastes and soils. While we welcome the commitment to a best practice approach, as has been noted previously far more information needs to be provided other than the minimal storage basics listed here, i.e., bunding, protection from weather and prevention of water movement through stored wastes and soils.

The recent Queensland Government survey of fire-fighting foams in that state has reported total volume of firefighting foam of approximately 425 tonnes (excluding volumes held by Defence, Air Services Australia) of which approximately 77% were fluorinated based. An estimated 273 sites reported of which 41% indicated that there were no management practices in place for collecting firefighting foam wastes. This report highlights the many thousands of tonnes that are stored in numerous locations across Australia and their need for proactive management. Inappropriate storage of PFAS has already resulted in serious leaks from Qantas’s airport facilities at Brisbane Airport and from the company charged with cleaning up that spill. The issue of safe storage requires a far more detailed coverage in the PFAS NPEM noting that safe and adequate storage will also be an essential component of any PFAS treatment facility.

Environmental monitoring and analysis

Comprehensive environmental monitoring will be necessary to ensure the environmentally sound chemical management of PFAS. Environmental monitoring will need to be undertaken in an open and transparent manner with publicly available reports on both the testing regimes and subsequent results.

Currently, the results of environmental monitoring undertaken by the government and industry has often been claimed as confidential business information in breach of Article 9.5 of the Stockholm Convention. The information once obtained, demonstrated that some polluters had been aware of the contamination and movements offsite for many years.

Conclusions

The draft PFAS NEMP provides little comfort to Australian civil society, particularly those residents impacted by PFAS contamination. The plan reflects a government and industry viewpoint. Much of the document appears to be aimed at giving comfort to industry and government that action on PFAS will be limited with the decisions being made using a risk management approach based on erroneous and unsound claims regarding human health impacts.

Considerable work is required to make the document reflect the urgent needs of both the environment and civil society in general.