



DPIE Water Presentation to NSW Site Auditors

Andy Goulstone – Manager, Water Policy and Legislation

John Paul Williams – Senior Hydrogeologist

Outline

Regulation of:

1. monitoring bores
2. groundwater works near or in contaminated areas
3. pump and treat activities at contaminated groundwater sites



1. Monitoring bores – is a licence or approval needed ?

The Water Management (General) Regulation 2018 defines an **exempt monitoring bore** as:

- A monitoring bore constructed in accordance with the *Minimum Construction Requirements for Water Bores in Australia* that is:
 - (a) required by an order, or approved voluntary management proposal, under Part 3 of the *Contaminated Land Management Act 1997*, or
 - (b) required by the conditions of a development consent under Part 4, of an approved project under Part 3A or of an approval under Division 5.2 of Part 5, of the *Environmental Planning and Assessment Act 1979*, or required or undertaken as a result of an environmental assessment under Part 5 of that Act, or
 - (c) required by a condition of an environment protection licence under the *Protection of the Environment Operations Act 1997*, or
 - (d) required under the *Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2014*, or
 - (e) constructed and operated only by the Ministerial Corporation.

1. Monitoring bores – but.....

The current framework for regulating and exempting groundwater monitoring bores:

- can difficult to understand and administer
- **exempts ~95% of monitoring bores from being regulated**, which
- presents a **risk to groundwater systems** from cross-aquifer contamination or pressure changes because appropriate conditions can not be required if they are exempt, and
- Govt. does not receive **valuable hydrogeological information** from them

1. Monitoring bores – interim position

SO  A more appropriate “interim position” was implemented since April 2014 so that high risk bores are regulated and information from them is provided to Government:

Regulate monitoring bores –

- **deeper than 40 m, and**
- **those in the Great Artesian Basin (GAB).**

This position was intended to be temporary until the definition of exempt monitoring bore in the Regulation was amended and aquifer interference approvals were commenced, however neither of these has occurred to date.

1. Monitoring bores – formalising the position

DPIE Water is currently seeking to formalise a version of the interim position in the regulation. The intended position is to:

Regulate monitoring bores deeper than 40 m, and

Monitoring bores 40 m deep or less will be exempt



2. Regulating GW works near/in contamination

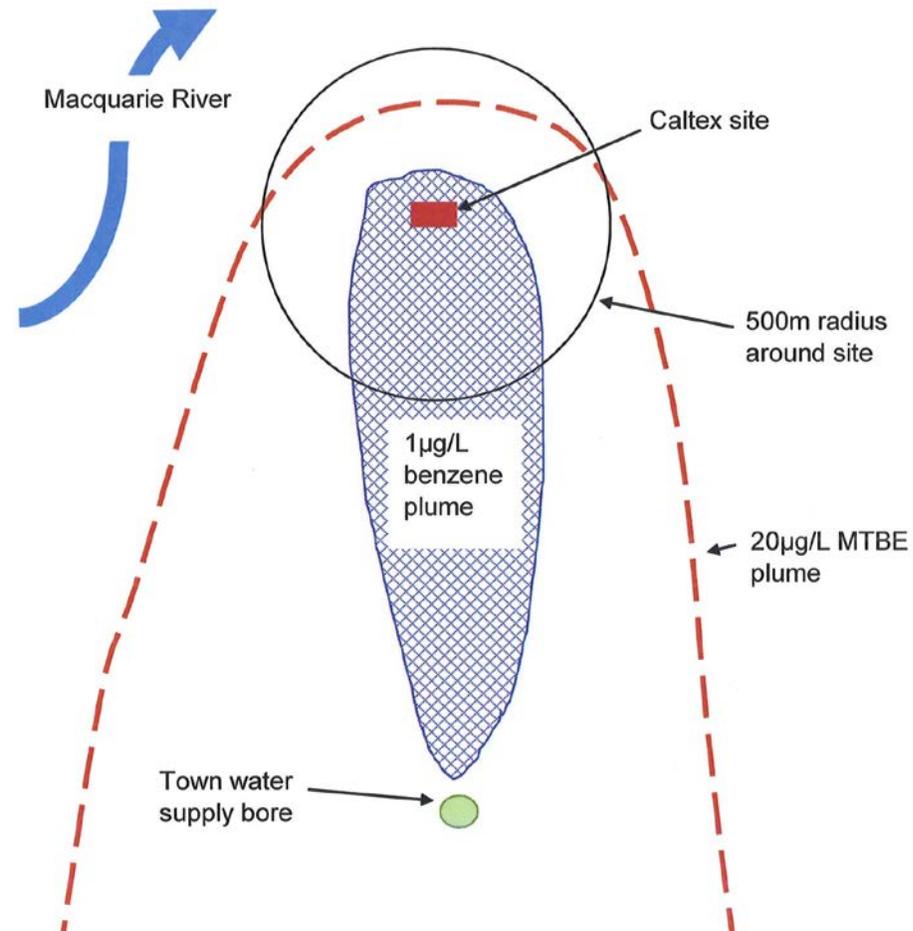
1) **Water sharing plans** establish offset distances for new groundwater works from contamination plumes. For example no new work can be approved within 250 m of a contamination plume.

2) **Orders can be made under s.324** of the *Water Management Act 2000* to limit or prohibit take of water if it is in the public interest such as a threat to public health or safety.

SO  the water regulation agencies need groundwater contamination plume information to inform our decisions and establish 'no-go' zones and offset distance buffers if needed.

2. Regulating GW works near/in contamination

BUT – We receive point source info (lot/DP) not plume boundary



2. Regulating GW works near/in contamination

DPIE Water developing **Communication Protocol with EPA:**

- EPA considering option to make provision of plume information a uniform condition of the regulatory instrument under the CLM Act.
- EPA considering option to write generic condition into management orders so any information provided to the EPA can be shared with other agencies

3. Regulation of pump and treat

Extraction to treat contaminated groundwater (a take that must be licenced under the WM Act):

- No current access licence exemption for the volume taken
- **New licence exemption** proposed that will accommodate extraction of up to **3ML/year** (end of 2019) to treat contaminated groundwater
- Take >3ML/year will still require a licence and shares to be held in the relevant groundwater source

3. Regulation of pump and treat

Putting treated groundwater back into the ground:

- Requires an EPL if still contaminated
- No existing policy for recharging groundwater sources
- Likely that the 'Managed Groundwater Recharge Policy' will propose that water must have "neutral or beneficial impact on the receiving groundwater source"



Thank You





Regulatory Assurance and Performance – CLM Site Auditors Meeting update.

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The EPA's Regulatory Assurance and Performance Framework

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Health Check Review – CLM Site Auditors

The EPA's Regulatory Assurance and Performance Framework

What is Regulatory Assurance and Performance?

- The EPA's Regulatory Assurance and Performance Framework was established in late 2018.
- It is a framework that utilises monitoring, evaluation and reporting as its cornerstones to check that the EPA's regulatory programs, projects and functions are delivering to the EPA's vision and values whilst also achieving their required outcomes and identify where there may be risks that need to be addressed.
- The Framework contributes to the EPA's continuous improvement of its regulatory practice.

What is Regulatory Assurance and Performance ?

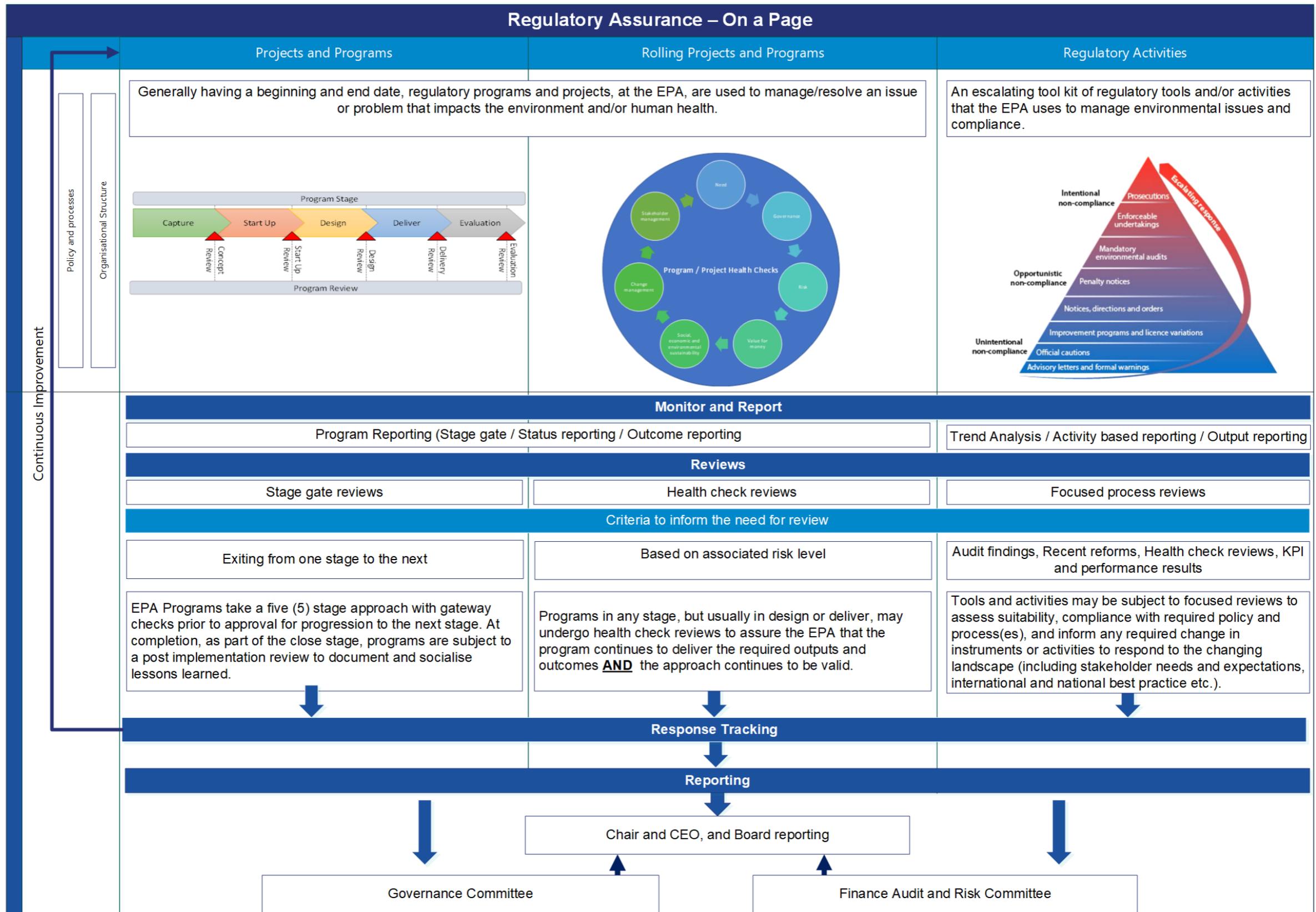
The Framework is evidence-based. It establishes procedures that independently assess regulatory work and identify opportunities for improvement whilst capturing and communicating good practice.

Focused on monitoring, evaluation, reporting and improvement (**MERI**) the Framework provides the tools to:

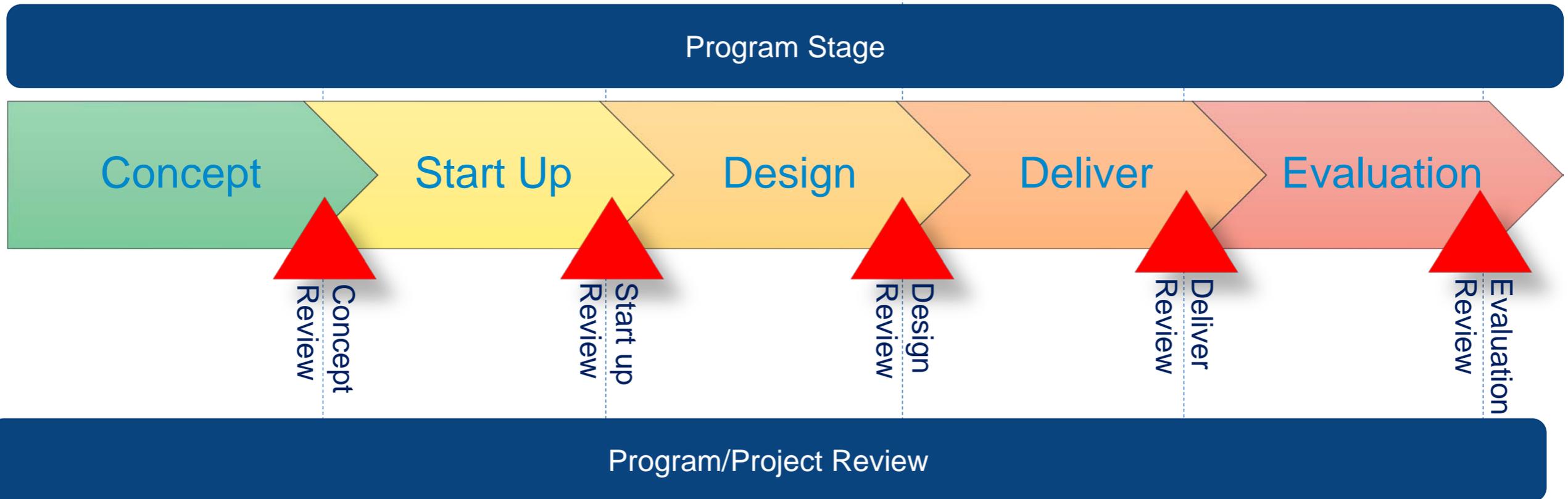
- Independently assess progress and delivery to committed outputs and outcomes, and
- Intervene, where required, to reduce the regulatory risk for the EPA
- All regulatory work that the EPA performs is subject to the Framework.



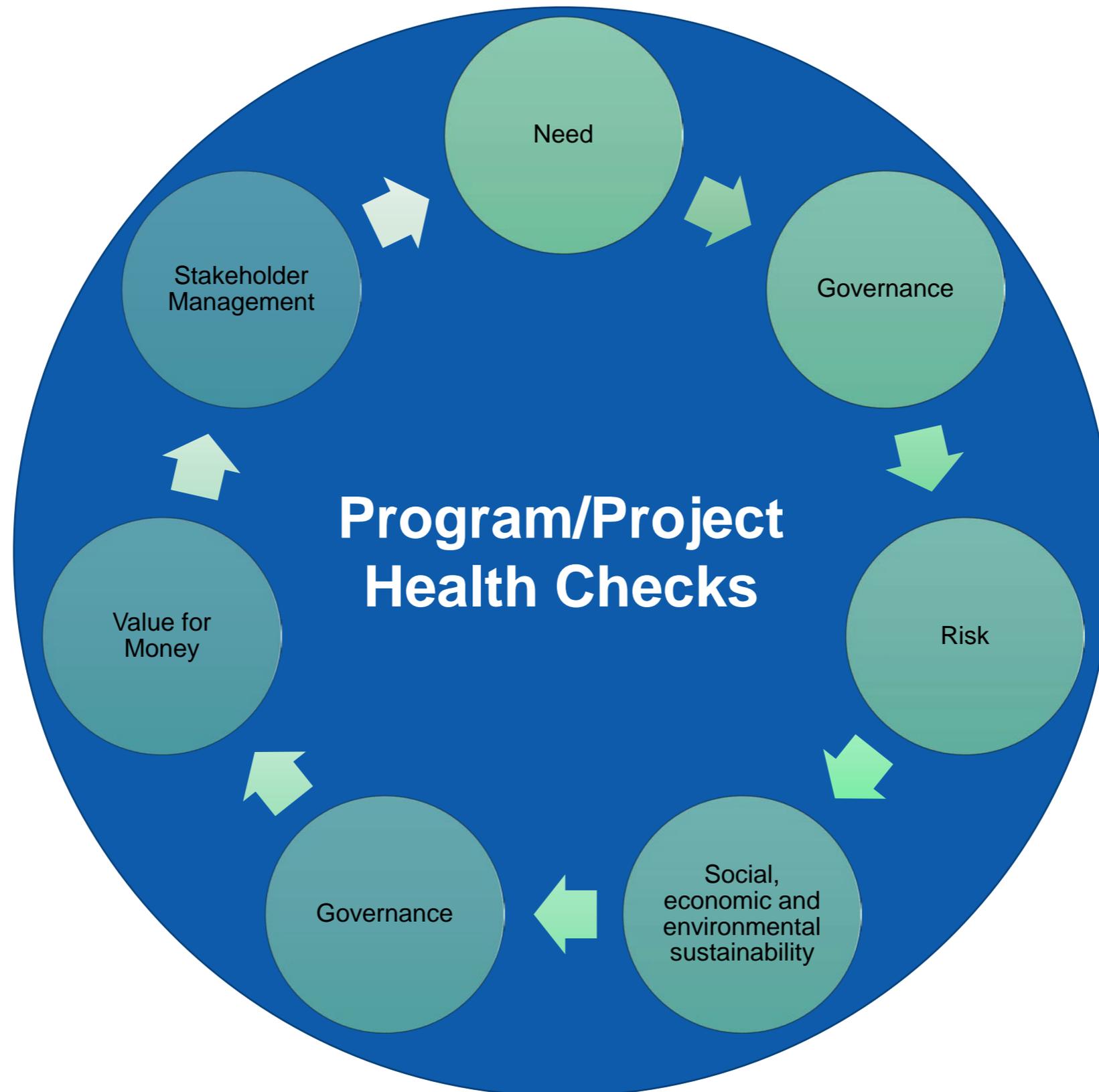
The RAP Framework on a page



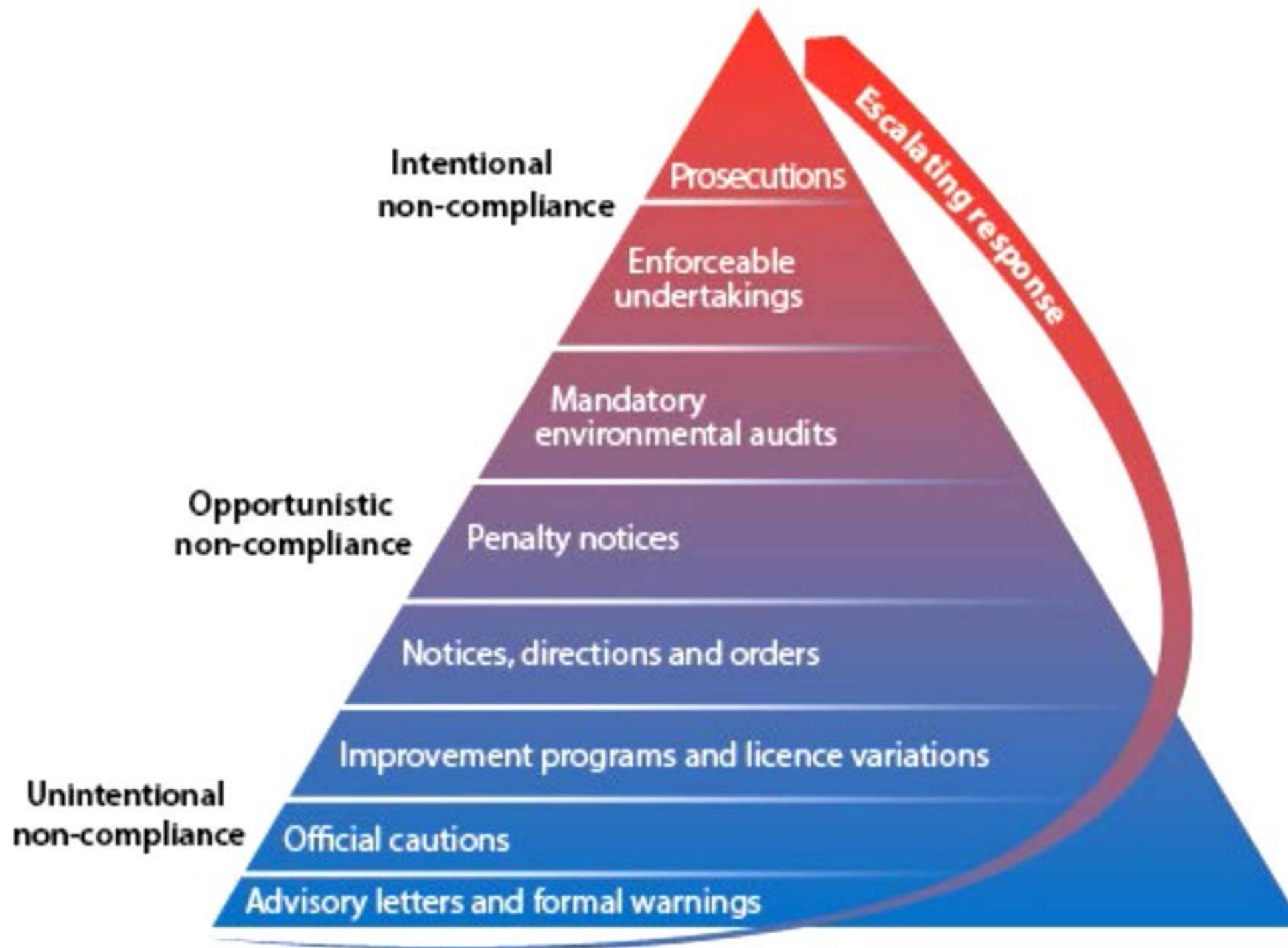
The RAP Stage Gate Review Process



The RAP Health Check Review Process



The RAP Health Check Review Process



The Contaminated Land Management Site Auditors Scheme Health Check

Background

In May 2019 the EPA sort to complete a health check review of the Contaminated Land Management (CLM) Site Auditor's scheme.

- The purpose of this Review was to assess the scheme, including:
 - The process by which it is administered,
 - Identifying any potential risks in the design and operation of the scheme and
 - Making recommendations for improvements or mitigations to the scheme for EPA consideration.

Background

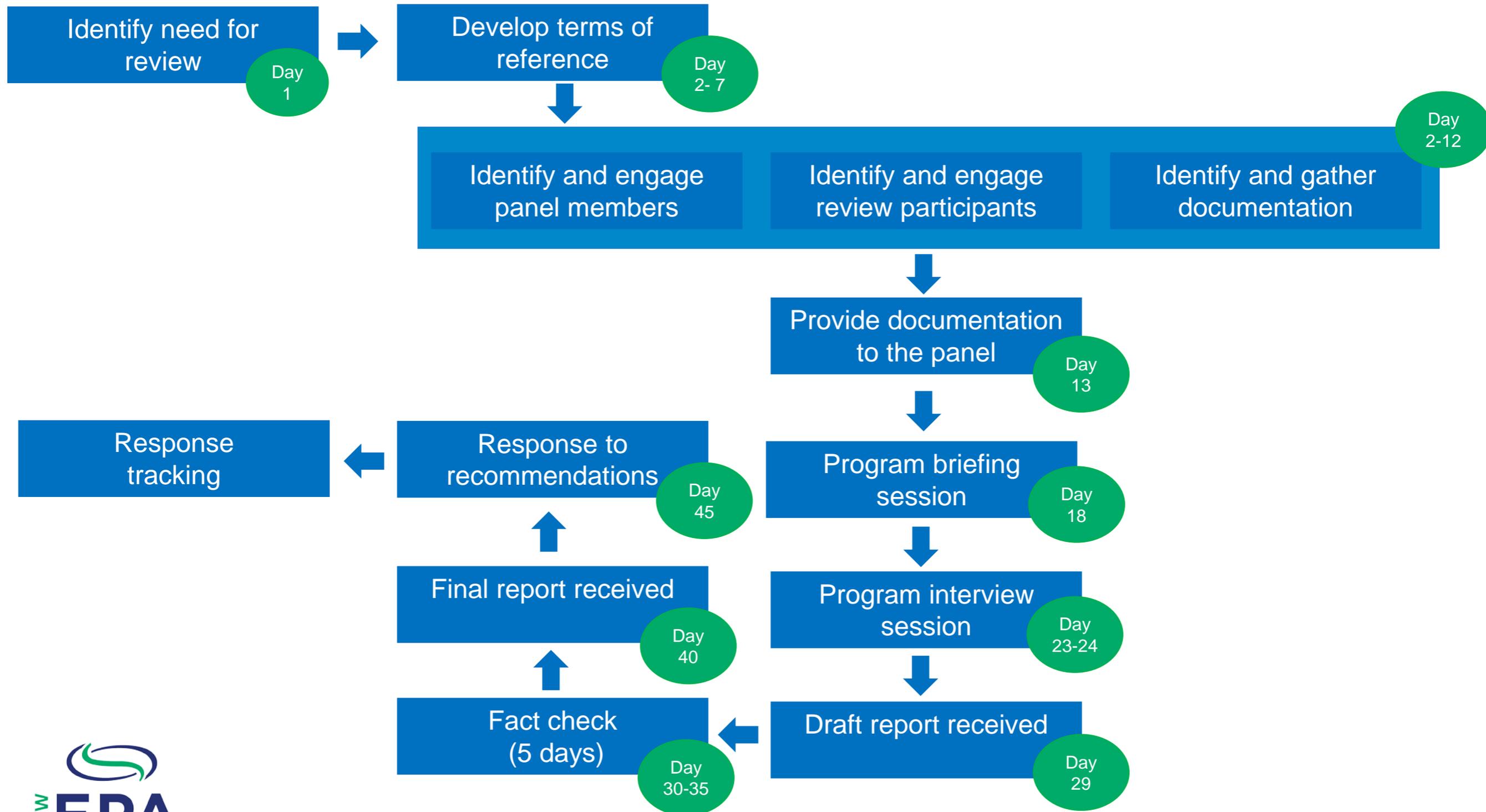
Focused on governance, risk and stakeholder management the review sought to answer the following questions:

- Is the EPA's approach to assess and appoint independent contaminated land experts as accredited site auditors adequate?
- Is the EPA's assurance program for accrediting site auditors, including the quality control check of the site audit reports satisfactory? Are there risks to the EPA's approach that need to be considered and addressed?

Background

- Is the statutory requirements for the composition of the accreditation panel, satisfactory? Are there gaps that EPA must consider and address?
- Is the approach adopted by the EPA to harmonise the accreditation process across Australia satisfactory? Are there any risks or gaps that the EPA must consider and address?

The Process



Findings

The review found that the EPA's CLM Site Auditor's Scheme was **adequate** however identified some risk to the program. The review panel had a **mid level** confidence in the scheme and made a series of recommendations to reduce the risk and increase success.

The review found the governance and risk management of the scheme **satisfactory** and that stakeholder management was **strong**

Findings

Overall, the review panel made **15** recommendations, which related to the key focus areas – governance, risk and stakeholder management. The review panel had the opportunity to make recommendations relating to matters outside the scope of the review (other matters) but found no areas of concern.

Questions





Audit Unit Update

**Jo Graham – Senior Audit Officer
Contaminated Land Management**

Joanna.graham@epa.nsw.gov.au



www.epa.nsw.gov.au

Contents

1. Outcome of auditor accreditation round
2. Proposed improvements to the accreditation process
3. Other actions following Health Check Review
4. Annual returns 2018-2019
5. Admin issues
6. Feedback

Auditor accreditation round 2018-19

- Sixteen applications received
- Seven invited to take the exam
- Five invited to interview
- Three were successful and have been accredited
- Feedback

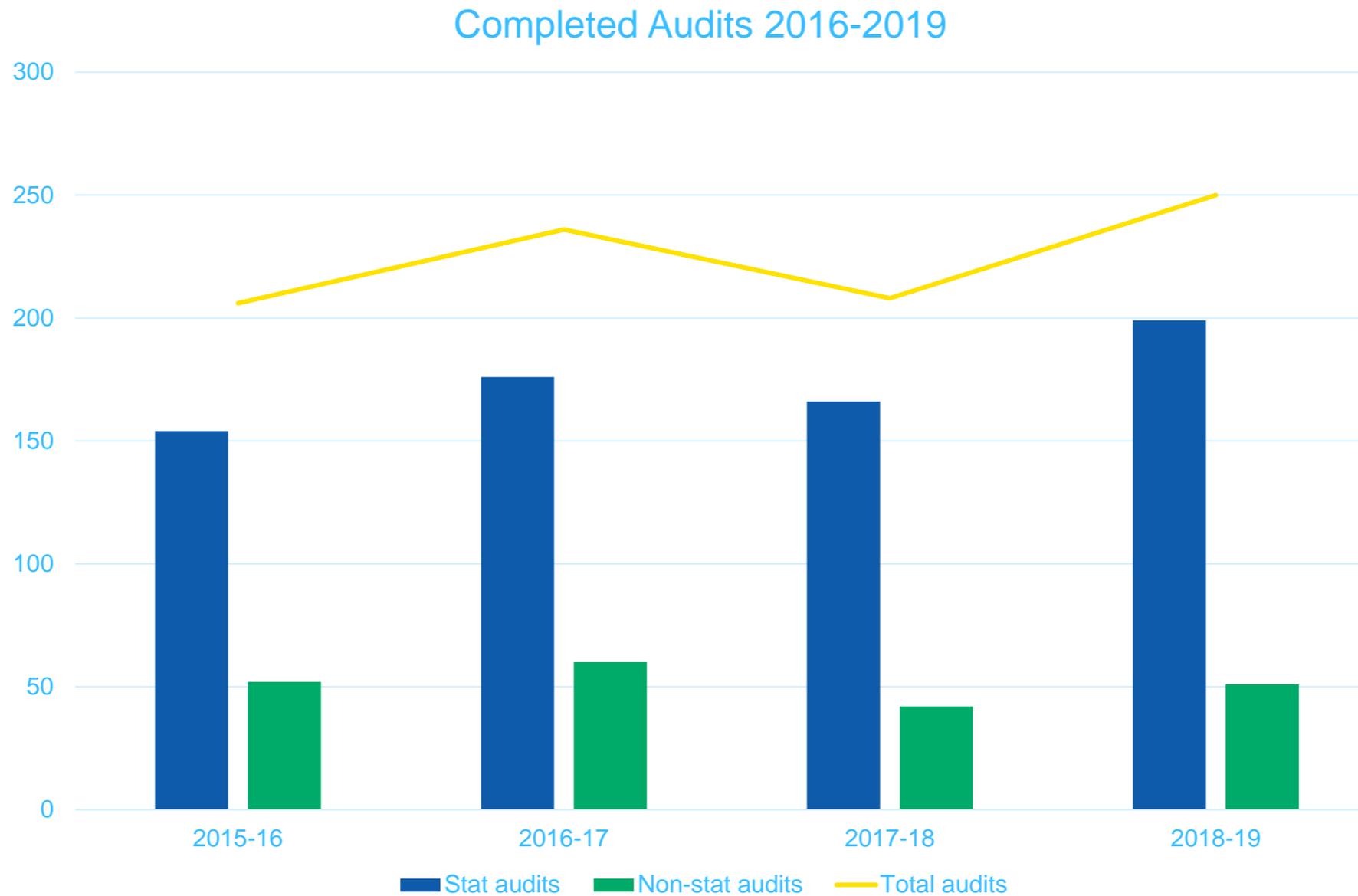
Actions for Improvements to the Accreditation Process

- Accreditation Panel Structure:
 - Chair
 - Member with auditor experience
- Update the accreditation process
- Clarify the feedback options
- Remove personal details from applications
- More information on the process to be provided on website
- Pre-application briefing to be mandatory
- Importance of non-technical skills to be emphasised
- Harmonisation of the accreditation process

Other Actions for Improvement

- Publish minutes from auditors' meetings on the EPA website
- Development of a conflict of interest declaration
- Development of a public centralised register of statutory site audit notifications and statements to be considered.

Completed Site Audits – 2016 - 2019



2018 – 2019 Annual Return

- 250 audits completed
- 62 audits terminated
- 623 audits ongoing

Of the audits completed:

- 28 auditors < 5 audits (32 - 2017/18)
- 4 auditors 5-10 audits (5 – 2017-18)
- 11 auditors 10-20 audits (5 – 2017-18)
- 1 auditors >20 audits (2 - 2017-18)

Improvements to Annual Return Forms

- Improvements to annual return forms:
 - Front summary page
 - Multistage audits
 - Site identifier at issue of SAS (if changes occur)

Admin issues

- Use of old SANs
- Statutory SAS / SAR to EPA – please send to auditor inbox
- SANs to be sent within 7 days
- Reminder to check SAS before signing and issuing

Feedback

- EMP workshop
- Progress from EMP working group
- Auditor Presentations
- Waste
- Auditor application of EILs/ESLs
- Coal wash rejects

- Move to Parramatta – location of future meetings?



Regulatory Practices & Programs Update

Joanne Stuart
Manager
October 2019



Consultation on guidelines

- Consultation on guidelines for Consultants reporting on contaminated land and Assessment and management of hazardous ground gases closed 8 October 2019
- 34 submissions received: -
 - 23 on consultants reporting guidelines
 - 11 on hazardous ground gas guidelines
- Received from councils, auditors, consultants, equipment suppliers
- Currently reviewing submissions, amending guidelines where appropriate and preparing EPA response to submissions
- Aiming to finalise by end of 2019 / early 2020

What did we hear on hazardous ground gas?

Some highly technical comments on the detail – too many to go into here – many constructive recommendations

Should consider most recent guidance/research – ALGA presentation earlier this year

Standards for ventilation of basements / tanking of basements

Much more comprehensive than previous edition– will be of help to local government

Reference Ambisence GasFlux for monitoring borehole flow and extend list of manufacturers/suppliers

Verification and construction quality assurance information useful addition

Remove manufacturers/supplier's names

CEnvP peer review is not supported for low-risk sites

Further guidance on monitoring of and potential mechanisms for ensuring completion of management plan reviews and associated reporting would be useful.

Should be two guidelines on landfill gas and toxic soil vapours – not helpful having both in the one document – leads to confusion

What did we hear on consultants reporting?

Raised concerns about environmental management plans content, implementation, communications and enforcement.

Requested stronger language – ‘must’ versus ‘should’ to ensure mandatory requirements.

Concerned about requiring reports to be written in Plain English given the technical nature of consultant’s work.

Questioned guidance about combining or separating reports arising from the different reporting stages

Suggested corrections (eg add ‘potential’ before references to ‘contamination’ and replacing ‘identify’ contamination with ‘assess’ contamination).

Add information required in reports (e.g. add soil vapour to the list of potentially affected media) and add missing references (e.g. ground gas guidelines).

Reword or explain terms such as ‘available reports’ and ‘unacceptable risks’.

Welcome revisions integrating guidance (e.g. the ASC NEPM), and new checklists.

Add further guidance including mention of consultant certification requirements and stakeholder roles and responsibilities.

Better reflect operational requirements and reality of waste management processes.

Environmental management plans

- Developing a Practice Note on preparing EMPs
- Informed by comments received in submissions referred to earlier and by input from last auditor's meeting
- Will undertake targeted consultation with stakeholders who made comments on EMPs in their submission on other guidelines
- If you didn't put in a submission but would like to be consulted, let me know
- May need revising once CLM Act Review is complete

National Remediation Framework

- CRC CARE finalised the NRF – 24 guides - 13 technical guides, Cost Benefit & Sustainability Assessment tool
- NSW will not be ‘approving’ the NRF under the CLM Act but will, where appropriate, make reference to the NRF technical guides in its own guideline
- CRC CARE will publish NRF on a stand-alone website
- CRC CARE also prepared a tool for UTS / ISF – Step by Step Guide to Engagement Planning for Contaminated Sites in NSW

<https://www.uts.edu.au/research-and-teaching/our-research/institute-sustainable-futures/our-research/social-change/guide>

UPSS

- UPSS Regulation 2019 commenced on 1 September
- Councils now the appropriate regulatory authority for most UPSS in NSW
- EPA continues to regulate UPSS:
 - on a licensed premise
 - Subject to a statutory notice (incl. clean up notice)
 - In the unincorporated areas of the State
 - Owned and operated by a public authority
- 2 year exemption for UPSS for backup generators etc

UPSS

- EPA is providing training and capacity building to local councils on regulating UPSS:
 - Fourteen face-to-face one day workshops around NSW – over 250 council officers trained so far
 - On-line training modules for refreshers and new starters
 - Training in UPSS inspections for officers employed under the Council Regional Capacity Building Program to train council officers in their group
 - Support and hand-holding through first rounds of inspections and regulatory action



Water Quality Guidelines Update

Sara Arthur, Audit Officer, Preventative Programs, Contaminated Land Management

25 October 2019



www.epa.nsw.gov.au

ANZG (2018) Portal Update October 2019

- Changes to the website are now being logged “website content change log”:
<https://www.waterquality.gov.au/anz-guidelines/resources/change-log>

Website Content Change log

Change log 2019

Reference no.	Date of change	Page title and address	Description of change
2019-09	24/09/2019	IMCRA mesoscale bioregions of Australia	This page has been updated to improve the clarity of the existing guidance on where the phys-chem stressor regional DGVs can be found, and the need to first check whether local jurisdictions have derived GVs for phys-chem stressors, as these will override the regional DGVs.
2019-08	24/09/2019	Australia's marine regions	This page has been updated to improve the clarity of the existing guidance on where the phys-chem stressor regional DGVs can be found, and the need to first check whether local jurisdictions have derived GVs for phys-chem stressors, as these will override the regional DGVs.
2019-07	24/09/2019	Australia's inland waters	This page has been updated to improve the clarity of the existing guidance on where the phys-chem stressor regional DGVs can be found, and the need to first check whether local jurisdictions have derived GVs for phys-chem stressors, as these will override the regional DGVs.
2019-06	24/09/2019	Your location	This page has been updated to improve the clarity of the existing guidance on where the phys-chem stressor regional DGVs can be found, and the need to first check whether local jurisdictions have derived GVs for phys-chem stressors, as these will override the regional DGVs.
2019-05	11/09/2019	Toxicant default guideline values for sediment quality	This page has been updated to improve the clarity of the existing guidance. This update DID NOT include any changes to the sediment quality default guideline values.

ANZG (2018) Portal

- 15 October 2019: Update to sediment quality section. No changes to sediment quality default guidelines.
- Primary Industries – still use ANZECC 2000
- Master spreadsheet is currently unavailable (as of 23 October 2019).
- You can subscribe to updates straight from the Commonwealth <http://waterquality.gov.au/anz-guidelines/about/subscribe>

Most Guideline Values have reverted back to 2000 Trigger values

Chemical	% species protection/waters	2000 Trigger Value (µg/L)	2018 Default Guideline Value (µg/L)
Cr(VI)	95/freshwaters	1.0	0.4
Cr(VI)	90 / freshwaters	6.0	1.8
Anthracene	"Low" or "unknown" reliability/marine	0.01	0.1
Pentachlorophenol	99/95/90/80/freshwater	3.6/10/17/27	85/320/600/1200
Pentachlorophenol	99/95/90/80/marine	11/22/33/55	270/400/520/720
Diazinon	80/Freshwater	2	0.08
S-methoprene	"Low" or "unknown" reliability/marine	20	0.2
Trifluralin	80/freshwater	9	0.38

PFAS - Health risk?

- PFAS are an emerging contaminant, with international research yet to fully determine any consistent human health effect
- PFAS are very stable chemicals that bioaccumulate, do not easily break down and can persist in the environment for a long time.
- The Australian Government's PFAS Expert Health Panel recommends limiting exposure to PFAS as a precaution until further research into health effects is completed.
- Expert advice released by the Australian Government in June 2019 states PFAS has not been shown to cause disease in humans and “probably has minimal impact on human health”.
- However, the advice cautions that PFAS exposure may be associated with mildly elevated cholesterol levels, effects on some hormone levels and on kidney function .

PFAS - Health risk? (cont.)

- Finding PFAS in the environment does not mean there is a human health risk. The NSW Government adopts a precautionary approach to limit people's exposure to PFAS.
- Typically, this approach means assessing and minimising human exposure pathways, such as limiting groundwater use or consumption (if used) or seafood consumption where threshold levels of PFAS is present.
- The 2019 enHealth Guidance Statements and a factsheet providing more information on PFAS and human health effects by the Federal Department of Health is available at:
<https://www1.health.gov.au/internet/main/publishing.nsf/Content/ohp-pfas.htm#enHealth>

NSW PFAS Investigation Program (Cont.)

- The EPA is conducting a systematic assessment and triage of sites that may have used, or continue to use PFAS chemicals – polluter pays
- Assessment process looks at the human health exposure pathways
- The EPA has assessed hundreds of sites as part of the state-wide assessment
- Many of the larger PFAS contaminated sites are owned by the Commonwealth – State environment laws do not apply
- The EPA has identified 47 high priority sites - requiring further investigation, remediation and/or monitoring (these are listed on the EPA's website).
- Full details at <https://www.epa.nsw.gov.au/your-environment/contaminated-land/pfas-investigation-program>
- However, the EPA does step in and conduct sampling to identify polluters or to inform precautionary dietary advice (fish and crab).
- The EPA engages community by:
 - doing one-on-one door knocking campaigns – direct and targeted advice
 - smaller community drop in sessions
 - making more information available on the EPA's website
 - Government offers mental health counselling service and town water connections

PFAS – Remediation

- Still developing internationally.....
- Granulated Activated Carbon – e.g. WTPs RAAF Base Williamtown
- Soil washing and resins treatments – e.g. HMAS Edinburgh, SA
- Foam Fractionation – e.g. RAAF Base Oakey, Qld WTP
- Remove solid PFAS waste in accordance with EPA's Waste Classification Guidelines – PFAS Addendum and take it to a facility licenced by the EPA to accept that waste e.g. Kemp's Creek if classified as restricted waste.
- Liquid PFAS waste can be taken to a facility licensed by the EPA to accept that waste e.g. Cleanaway, Homebush

PFAS IGA and NEMP 2.0 update

- First Ministers signed an Intergovernmental Agreement (IGA) on how to respond to PFAS contamination in February 2018
- The PFAS IGA includes detailed technical guidance to ensure a nationally consistent approach is taken, known as the PFAS National Environment Management Plan (NEMP)
- The Commonwealth Department of Environment and Energy's National PFAS Taskforce commenced a review of the PFAS IGA in late 2018 with all jurisdictions, including representatives of all environment ministers and first ministers' agencies.
- The National Chemicals Working Group have recently prepared NEMP version 2.0.
- NSW EPA has had an active role in the PFAS IGA review and development of the NEMP version 2.0
- The proposed amendments to the PFAS IGA and its relevant appendices and NEMP version 2.0 were considered at SoG on 11 Oct, HEPA on 18 Oct, SoG (out of session) and then to MeM on 8 Nov.

NSW PFAS Investigation Program

Questions?

CSARM



(Contaminated Site Assessment Remediation and Management)

UTS Science Professional Development Program

Dr Alex Pulkownik,

Faculty of Science, UTS

alex.pulkownik@uts.edu.au

History of CSARM

- Planned 2008
- First modules presented in 2009
 - 6 modules
 - *A: Ground Rules for Contaminated Sites*
 - *B: Effective Site Assessment*
 - *C: Demystifying Contaminants*
 - *D: Contaminant and Toxicity*
 - *E: Risk-based Site Assessment*
 - *F: Remediation Principles and Closure*
- In 2016, Modules C and D combined into *Module C/D: Assessment of Contaminants of Concern*



Current structure

- Length – face to face
 - Modules A, B, E, F – 2.5 days
 - Module C/D – 3 days
- Pre-module preparation – readings, approx 20 hours
- Optional post-module assignment – 3000 words (6000 words for Module C/D), 20 – 30 hours
- Attendance and completion of assignment
 - Certificate of Completion
 - Used to gain recognition of prior learning for a post-graduate subject at universities



To date, 2009 - 2019:

- Number of individual modules presented - 61
- Participants - 570
 - Average group number per module – 18
 - Attendees from consultancies and associated industries – 50%
 - Attendees from local government – 17%, increasing in past 5 years
- Presenters - 68
 - Site auditors – 30% overall, but usually 50% per module
 - Regulators – 30%
 - Specialists – 40%



CSARM courses continue to be popular:

- Mostly advertised by word of mouth
- Scoring very high for all courses and presenters – over 4.5 out of 5.0
- Q: what did you like most about the course:
 - *‘The diverse range of presenters with high levels of knowledge and experience’*
 - *‘Workshops, case studies and real situations’*
 - *‘To listen to the site auditors giving their experience and insight’*
 - *‘I chose this particular course because it was absolutely relevant to my work in local government’*
 - *‘The depth of knowledge of presenters!’*



What future?

- Plans for post-graduate coursework Master of Science degree
 - Scoping study completed early 2019
 - Course Advisor Committee formed late 2019
 - To advise on name, feasibility and structure of new degree
 - Links with industry through internship or work-based project work
- Certificates and Diploma course to feed into MSc
- CSARM short courses to remain
 - Not everyone wants to do post-graduate work
 - Some workplaces will support short courses but not degrees
 - Completion of modules to be credited as subjects that form core of degree structure

And finally, thank you to

- NSW EPA staff
 - For advice and presenters
- Site auditors
 - For your contributions in presentations and enthusiasm

