



INTERNATIONAL COMMITTEE ON CONTAMINATED LAND

QUESTIONNAIRE ABOUT LEGAL FRAMEWORK FOR SOIL/SITE CONTAMINATION MANAGEMENT

COUNTRY: Australia STATE: New South Wales

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OVERALL CONTEXT

1. Does your national policy have a specific definition of “contaminated site”, “contaminated soil”? If yes, please provide the definition.
In New South Wales (NSW) “contamination” is defined under section 5 of the [Contaminated Land Management Act 1997](#) (CLM Act). Contamination of land is defined as “the presence in, on or under the land of a substance at a concentration above the concentration at which the substance is normally present in, on or under (respectively) land in the same locality, being a presence that presents a risk of harm to human health or any other aspect of the environment.”

2. Is Groundwater included in this definition?

Yes. The CLM Act defines “land” to include “water on or below the surface of land and the bed of such water”.

3. Does your policy on contaminated sites/land/soil include other definitions (i.e. brownfield, sediment)?

Yes. The CLM Act defines ‘environment’, “harm” and “risk” amongst other terms but not brownfield or sediment.

4. Which sources are you considering? Industrial operations? Transport? Urban contamination? Etc.

All industrial and other sources, both historic and current, that can cause significant land contamination.

LEGAL FRAMEWOK



5. Does your country have legislation with respect to contaminated land management?
- a. Whatever the situation is, please be precise if it's a specific or a common legislation, if integrated in a more general one (including prevention of emissions, soil protection, land planning, environment & health, etc.)
 - b. If there is no legislation, please be precise how you tackle the problem.
 - c. What are the main policy objectives?
 - d. What are the foundational principles on which the national policy is based? (e.g., polluter pays, risk-based, fit-for-use, stand-still, transparency, ...).
- a) Australia does not have specific Commonwealth legislation addressing management of contaminated land although there are elements of the Environment Protection Biodiversity and Conservation Act 1999 (EPBC Act) that are relevant: www.austlii.edu.au/au/legis/cth/consol_act/epabca1999588/ NSW has a framework to regulate the management and remediation of significantly contaminated land under the CLM Act. The CLM Act provides the EPA with powers to require the investigation and management of sites where contamination is significant enough to warrant regulation. Less serious contamination is managed through the land use planning process under the Environmental Planning and Assessment Act 1979 and State Environment Planning Policy 55 (SEPP55).
- b) Not applicable.
- c) The objects of the CLM Act are:
- (a) to set out accountabilities for managing contamination if the EPA considers the contamination is significant enough to require regulation,
 - (b) to set out the role of the EPA in the assessment of contamination and the supervision of the investigation and management of contaminated sites,
 - (c) to provide for the accreditation of site auditors of contaminated land to ensure appropriate standards of auditing in the management of contaminated land, and
 - (d) to ensure that contaminated land is managed with regard to the principles of ecologically sustainable development.
- d) The polluter pays principle, ecologically sustainable development, risk-based assessment.
6. What is the Chain of Liability for the management of contaminated land?
- a. Polluter? Land owner? Last operator? Occupier?
 - b. Is there any difference between new and historic contamination?
 - c. Can a responsible party pass on the liability to a purchaser? (under statutory law? Contractually?)



- d. Do you separate the obligation to remediate soil pollution and the liability regarding the damage caused by soil pollution and the related remediation measures?
 - e. Are you facing specific situations (e.g. privatization of the industrial activities, war impacted areas, ...) needing special programme?
- a) Under section 6 of the CLM Act responsibility for contamination of land rests with:
- (a) the person who caused the contamination of the land or
 - (b) the contamination occurred because an act or activity of the person resulted in the conversion of a substance that did not cause contamination of the land into a substance that did cause contamination of the land, or
 - (c) the person is the owner or occupier of the land and the person knew or ought reasonably to have known that contamination of the land would occur and the person failed to take reasonable steps to prevent the contamination, or
 - (d) the person carried on activities on the land that generate or consume the same substances as those that caused the contamination, or substances that may be converted, by reacting with each other or by the action of natural processes on the land, into substances that are the same as those that caused the contamination
- b) Both historic and new contamination are regulated in the same manner although if contamination is resultant from a contemporary incident then there is other legislation to regulate the cleanup – the Protection of the Environment Operations Act 1997 (POEO Act): www.austlii.edu.au/au/legis/nsw/consol_act/poteoa1997455/
- c) A responsible party cannot legally transfer liability, however parties can enter into contractual arrangements regarding liability.
- d) No
- e) Orphan sites (see Question 20 below)

7. Are there any specifications at regional / local level?

The CLM Act and guidelines approved under the Act apply throughout NSW. Local councils (local government) can develop their own contaminated land policy but this is usually framed around the guidelines associated with SEPP55.

8. Are there specifications for site closure?

No, usually based on either regulator or EPA accredited expert signoff

9. Is there any legal requirement to conduct investigation for potential contamination in the sale of the property?



There is no legal requirement to conduct investigations for potential contamination prior to the sale of property; however, any identified contamination is noted on the section 149 planning certificate. Section 149 planning certificates are issued under the [Environmental Planning and Assessment Act 1979](#) and they contain information on how a property may be used and any restrictions on development. Often during the sale of commercial land a potential buyer may conduct a due diligence assessment of potential site contamination.

10. Does your national policy have any kind of inventories/registers? If yes, please be precise regarding which sites are registered, how the data are collected and if the databases are public.

In NSW a [record of notices](#) is maintained by the EPA on the EPA's website. The record provides information on the written notices issued by the EPA under the CLM Act, including preliminary investigation orders, the names of the sites, owners or occupiers at the time of the EPA action in relation to the site and copies of site audit statements (SAS) provided to the EPA relating to significantly contaminated land.

11. What are the strong, weak points and the major bottlenecks with respect to the current regulations in your country?

Strong Points

National guidelines under the National Environment Protection (Assessment of Site Contamination) Measure 1999 that are endorsed under legislation in NSW.

In NSW a specific Land and Environment Court to test regulatory challenges.

Weak points/Bottlenecks, not specifically regulatory:

No accreditation scheme for consultants meaning that their work quality is highly variable.

There is also inequity between rural and urban areas that impacts on whether land is remediated (largely cost driven but also the difficulty of getting consultants in remote rural areas).

TECHNICAL ISSUES RELATED TO THE LEGAL FRAMEWORK

12. Are there site investigation requirements?

Yes. Section 10 of the CLM Act enables the EPA to direct a person to conduct a preliminary investigation of land, investigate whether the land is contaminated with the substances, investigate the nature and extent of any such contamination, and provide to the EPA a report on the investigation.

13. Are Risk Assessment & Management the main tools?

Broadly NSW EPA takes a risk-based approach to the management of contaminated land.



14. Are there specific technical approaches used?

- a. For Human Health (HH), Ecosystems, Groundwater (GW), Surface waters (SW), other targets (i.e. buildings, infrastructures, ...please be precise).
- b. On a site by site specific approach, or by derivation of guideline values? If possible, please detail your answer.
- c. Do you take into consideration others sources of pollution in the risk assessment?

a) Site specific risk assessments involve the assessment of human health risk and ecological risks by comparing levels of contaminants on the site with appropriate investigation levels provided in guideline documents (see below) or justifiable site specific criteria.

b) Application of the guideline levels based on media contaminated (groundwater, surface water, soil) and end use (residential, recreational, commercial/industrial).

c) Yes

15. If the national policy uses guideline values, please be precise in describing the following points:

- a. Reasons for derivation of generic values
- b. Objectives / levels of implementation (investigation, risk assessment, remediation)
- c. Priority substances
- d. Protocols of derivation (including acceptable risk levels used).

a) The Site Contamination Assessment National Environment Protection Measure (Site Contamination NEPM) allows the application of nationally consistent standards.

b) The Site Contamination NEPM applies to the assessment of site contamination only.

c) Priority substances are listed in guidelines documents (see guidelines listed below).

d) Protocols are described in NEPM documents eg derivation of Ecological Investigation Levels.

16. What are the drivers for remediation?

- a. To what level is clean-up required? (i.e. acceptable risk, land use values, ...)
- b. Does your national policy use cost-benefits analysis for the choice of the remedial solution?



a) Contaminated sites are remediated to a level required for the end land-use. For example the clean-up required for a residential site is higher than for a commercial/industrial site.

b) Not consistently

17. What are the main remediation strategies or treatment techniques used in your countries (including Natural Attenuation)?

- a. Distribution of techniques?
- b. Evolution in time?
- c. Acceptance of innovative treatment techniques?

a) Removal of contaminated soil and disposal off-site still predominates although there are disincentives such as increasing landfill levies and on site processes are encouraged through the guidance.

b) Full range of techniques are available – usually determined by cost, expediency, regulatory intervention. Some regulatory incentive (via inclusion of ESD principles in legislation) to encourage innovative approaches (low energy, new and emergent technologies etc).

c) There is increased acceptance of alternative treatment techniques such as natural attenuation

18. Are you considering sustainability in the national approach?

- a. If yes, how? In particular, how the three pillars of sustainability are considered and balanced.
- b. If no, explain the reasons and the future challenges.

a) Yes. The global focus on integrating sustainable principles and practices into remediation projects has resulted in a push towards the use of sustainable remediation, for example in-situ and 'passive' techniques such as monitored natural attenuation. There is a local "SURF" forum.

19. How does your country bridge the CLM approach with:

- a. Land planning programmes?
- b. Public health programmes (aggregation of impacts on surrounding populations)

a) The NSW EPA works closely with the NSW Department of Planning to regulate the management of contaminated land (see response to question 1).

b) The NSW EPA works closely with NSW Health is assessing the health risks associated with contaminated land.

FINANCIAL ISSUES



20. What are the specific practices with respect to “Orphan sites”?

Priority orphan sites are investigated and remediated using government funds allocated by the NSW Environmental Trust. The Trust is an independent statutory body established by the NSW government to fund a broad range of organisations to undertake projects that enhance the environment of NSW. Since 2001, over \$15.5 million Australian dollars have been spent by the Environmental Trust on cleaning up orphan sites in NSW.

21. Do you have an idea of the annual budget allocated to Soil Contamination Management?

- a. How is it divided between public, private and others?
- b. What are the main financial / funding systems in place in your country? (e.g. Financial guarantees, insurance, public – private partnerships, special foundation, industrial consortium, enforcement, ...).
- c. Between the different steps of management (investigation, remediation, monitoring...)?

a) No

b) All of those described

c) Decreasing expenditure: Remediation, investigation, monitoring

ORGANISATIONAL ISSUES

22. How are stakeholders and in particular communities involved in the approach?

The NSW EPA maintains the contaminated land public record which is a searchable database of significantly contaminated land in NSW and regulatory actions related to these sites. For large remediation projects proponents may be required to consult with the local community as a condition of their approved remediation works.

23. Is there a specific approach for:

- a. Brownfields?
- b. Megasites?
- c. Widespread pollutions?
- d. Reuse of excavated soils? (e.g., in relation to their quality)

a) All sites that are contaminated enough the warrant regulation are managed consistently under the CLM Act. However a statutory authority or corporation maybe established to coordinate large scale redevelopment ie Barangaroo Development Authority, Sydney Olympic Parks Authority, Hunter Development Corporation



- b) See (a) above.
- c) Land contamination is managed on a site-by-site basis; however the NSW EPA has a preventative approaches program which targets certain high-contaminating industries to ensure that these sites do not become contaminated sites in the future
- d) Uncontaminated excavated soils can be reused on site under the NSW EPA's General Exemption for Excavated Natural Material (ENM) which provides an exemption to the Protection of the Environment Operations (Waste) Regulation 2005. This exemption minimises the amount of waste being sent to NSW landfills.

24. Does your national policy include any accreditation system for consultants or service providers? If yes, please provide some details.

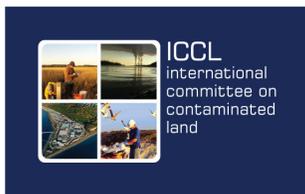
There is no National consultant accreditation scheme although there are moves to develop one. The NSW site auditor scheme is administered by the EPA under Part 4 of the CLM Act. The scheme provides a pool of accredited 'site auditors' who can be engaged to review investigation, remediation and validation work conducted by contaminated land consultants. The aim of the scheme is to ensure the protection of the environment and human health through proper management of contaminated land, particularly during changes in land use. The scheme improves stakeholders' access to competent technical advice by providing for site auditor review of the investigation and remediation of contaminated land. There is some mutual recognition between Australian States and territories.

25. Do you have any training / capacity building programme, any management accountability and performance measurement?

NSW EPA undertakes training forums for other parts of government as well as specific private sector groups. Nationally, there are training opportunities coordinated under the AELERT group <https://aelert.net/>. The University of Technology Sydney presents the Contaminated Site Assessment, Remediation and Management (CSARM) Short Courses Series in collaboration with the NSW EPA. The purpose of the courses is to allow environmental professionals to update their expertise on contaminated land management, extend their knowledge base and network with colleagues in industry and government.

26. How is the necessary inter-governmental coordination for CLM organized? (e.g. with Health Protection Department, with the public site owners, with state or local public sector environmental organizations, with special interest advocacy groups,)

Council of Australian Governments (COAG) Standing Council on Environment and Water Senior Officials Committee, State and Territory regulators via the Seamless



Environmental Regulation Thematic Oversight Group (SERTO) Contaminated Environments Network,

CRUCIAL DEVELOPMENTS IN THE FUTURE

Are there any additional issues to be further developed in the following months/years whatever they are (Research and Development needs, organisational issues, ...)?

Greater harmonisation of environmental regulation between Australian jurisdictions (States and Territories). Pilot projects related to land contamination include establishment of the Contaminated Environment Network, a National Remediation Framework and a risk based regulatory approach.

Unofficially or officially, do you see any opportunities for collaboration in the coming months or years that may improve overall coordination among international organizations? (e.g., conferences, workshops, international (technical or policy) initiatives, growing alliances (e.g., in support of redevelopment /reuse of contaminated lands, etc.).

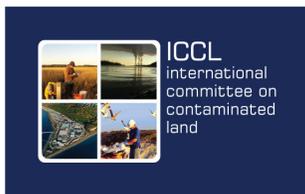
Yes – NSW EPA engages with regional EPA's ie South Korea, Singapore, Malaysia, Thailand, Vietnam to divest knowledge/experience. Often NSW EPA seeks advice from other regulators ie Environment Agency (UK) and USEPA.

REFERENCES

Please give most important references (documents, website, projects, and case studies) that could be relevant for explaining your national approach

1. Guidelines made by the EPA

- Guidelines for the NSW Site Auditor Scheme
<http://www.environment.nsw.gov.au/clm/servicestation.htm>
- Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997
<http://www.environment.nsw.gov.au/resources/clm/09438gldutycontclma.pdf>
- Guidelines for Consultants Reporting on Contaminated Sites
<http://www.environment.nsw.gov.au/resources/clm/20110650consultantsglines.pdf>
- Sampling Design Guidelines
<http://www.environment.nsw.gov.au/resources/clm/95059samppgdline.pdf>
- Guidelines for Assessing Service Station Sites
<http://www.environment.nsw.gov.au/clm/servicestation.htm>



- Guidelines for the Assessment and Management of Groundwater Contamination <http://www.environment.nsw.gov.au/resources/clm/groundwaterguidelines07144.pdf>
- Guidelines for Assessing Banana Plantation Sites <http://www.environment.nsw.gov.au/resources/clm/bananaplantsite.pdf>
- Guidelines for the Vertical Mixing of Soil on Former Broad-acre Agricultural Land <http://www.environment.nsw.gov.au/clm/verticalmixing.htm>
- Guidelines for Assessing Former Orchards and Market Gardens <http://www.environment.nsw.gov.au/resources/clm/orchardgdline05195.pdf>

2 Guidelines used by EPA

ANZECC publications

- Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites, published by Australian and New Zealand Environment and Conservation Council (ANZECC) and the National Health and Medical Research Council (NHMRC) (January 1992)
- Australian and New Zealand Guidelines for Fresh and Marine Water Quality, published by ANZECC and Agriculture and Resource Management Council of Australia and New Zealand, Paper No 4 (October 2000)

EnHealth publications (formerly National Environmental Health Forum monographs)

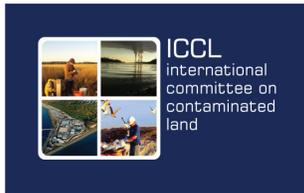
- Composite Sampling, Lock, W. H., National Environmental Health Forum Monographs, Soil Series No.3, 1996, SA Health Commission, Adelaide
- Environmental Health Risk Assessment: Guidelines for assessing human health risks from environmental hazards, Department of Health and Ageing and EnHealth Council, Commonwealth of Australia (June 2004)

National Environment Protection Council publications

- National Environment Protection (Assessment of Site Contamination) Measure 1999

The Measure consists of a policy framework for the assessment of site contamination, Schedule A (Recommended General Process for the Assessment of Site Contamination) and Schedule B (Guidelines).

Schedule B guidelines include:



- B(1) Guideline on Investigation Levels for Soil and Groundwater
- B(2) Guideline on Data Collection, Sample Design and Reporting
- B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils
- B(4) Guideline on Health Risk Assessment Methodology
- B(5) Guideline on Ecological Risk Assessment
- B(6) Guideline on Risk-based Assessment of Groundwater Contamination
- B(7a) Guideline on Health-based Investigation Levels
- B(7b) Guideline on Exposure Scenarios and Exposure Settings
- B(8) Guideline on Community Consultation and Risk Communication
- B(9) Guideline on Protection of Health and the Environment During the Assessment of Site Contamination
- B(10) Guideline on Competencies and Acceptance of Environmental Auditors and Related Professionals

Other documents

- Guidelines for the Assessment and Clean Up of Cattle Tick Dip Sites for Residential Purposes, NSW Agriculture and CMPS&F Environmental (February 1996)
- Australian Drinking Water Guidelines, NHMRC and Natural Resource Management Ministerial Council of Australia and New Zealand (2004)