



REMEDIATION OF CONTAMINATED LAND IN SOUTH AFRICA

WORKSHOP FOR WASTE LICENSING PROCESS AND EXCLUSION REGULATIONS

DFFE Environment House, Conference Centre
27 February 2025



forestry, fisheries
& the environment

Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA



Presentation outline

- ❖ Legislative Background
- ❖ Part 8 of the National Environmental Management: Waste Act
- ❖ Norms and Standards for Remediation of Contaminated Land and Soil Quality
- ❖ Conclusion



Land Remediation Directorate



Legislative Background

- ❖ **RSA Constitution Bill of Rights:** states that “Everyone has a right to an environment that is not harmful to their health and well being”
- ❖ **National Environmental Management Act (NEMA) (1998):** framework legislation for environmental management and provides all environmental principles that inform all environmental legislation in the country
- ❖ **National Environmental Management: Waste Act (2008):** Part 8 of the NEM:WA provides a detailed approach to the management of contaminated land in the country
- ❖ **National Norms and Standards for the Remediation of Contaminated Land and Soil Quality (2014):** provides a uniform national approach to determine the contamination status of an investigation area



Part 8 of the Waste Act

- ❖ Sec 35 – Application
- ❖ Sec 36 – Identification and Notification
- ❖ Sec 37 – Consequences of Identification and Notification
- ❖ Sec 38 – Consideration of SARs and RAPs
- ❖ Sec 39 – Orders/ Remediation Orders
- ❖ Sec 40 – Transfer of Remediation sites
- ❖ Sec 41 – National Contaminated Land Register



Part 8 Definitions

- ❖ **Contaminant:** means **any substance** present in an environmental medium at concentrations in excess of natural background concentrations that has a potential to cause harm to human health or the environment;
- ❖ **Contaminated:** in relation to Part 8 of Chapter 4, means the presence in or under any land, site, buildings or structures of a substance or micro-organism above the concentration that is normally present in or under that land, which substance or micro-organism directly or indirectly affects or may affect the quality of soil or the environment adversely;
- ❖ **Remediation:** means the management of a contaminated site to prevent, minimise, or mitigate harm to human health or the environment



Part 8 of the Waste Act

- ❖ The Act came into effect on 2 of May 2014
 - It outlines the processes that must be followed in management of contaminated land in the country
 - It applies a Source-Pathway-Receptor Model
 - It applies to historic and current contaminated land
 - Governed by Polluter-Pay (Polluters remediate at own cost); Duty of Care and Sustainability Principles



Identification and Notification of investigation area

- ❖ High-risk activities (Consultative processes in terms of S72 and 73)
- ❖ An owner of the land that is likely contaminated must notify the department
- ❖ The department may issue written notice to a person who might be contaminating

Note: DFFE and Provincial departments of Environment are responsible for implementation of Part 8 of NEM:WA



Consequence of Identification and Notification

- ❖ Once the investigation area has been identified and notified a site assessment should be conducted, and a site assessment report (SAR) and remediation plan (if applicable) should be submitted
- ❖ Where the findings of the site assessment report are that the investigation area is contaminated, the site assessment report must at least contain information on whether—
 - (i) the contamination has already impacted on health or the environment
 - (ii) the substances present in or on the land are toxic, persistent or bioaccumulative or are present in large quantities or high concentrations or occur in combinations



Consequence of Identification and Notification Con...

(iii) there are exposure pathways available to the substances

(vi) the acceptable exposure for human and environmental receptors in that environment have been exceeded

(vii) any applicable standards have been exceeded

(viii) the area should be remediated, or any other measures should be taken to manage or neutralise the risk



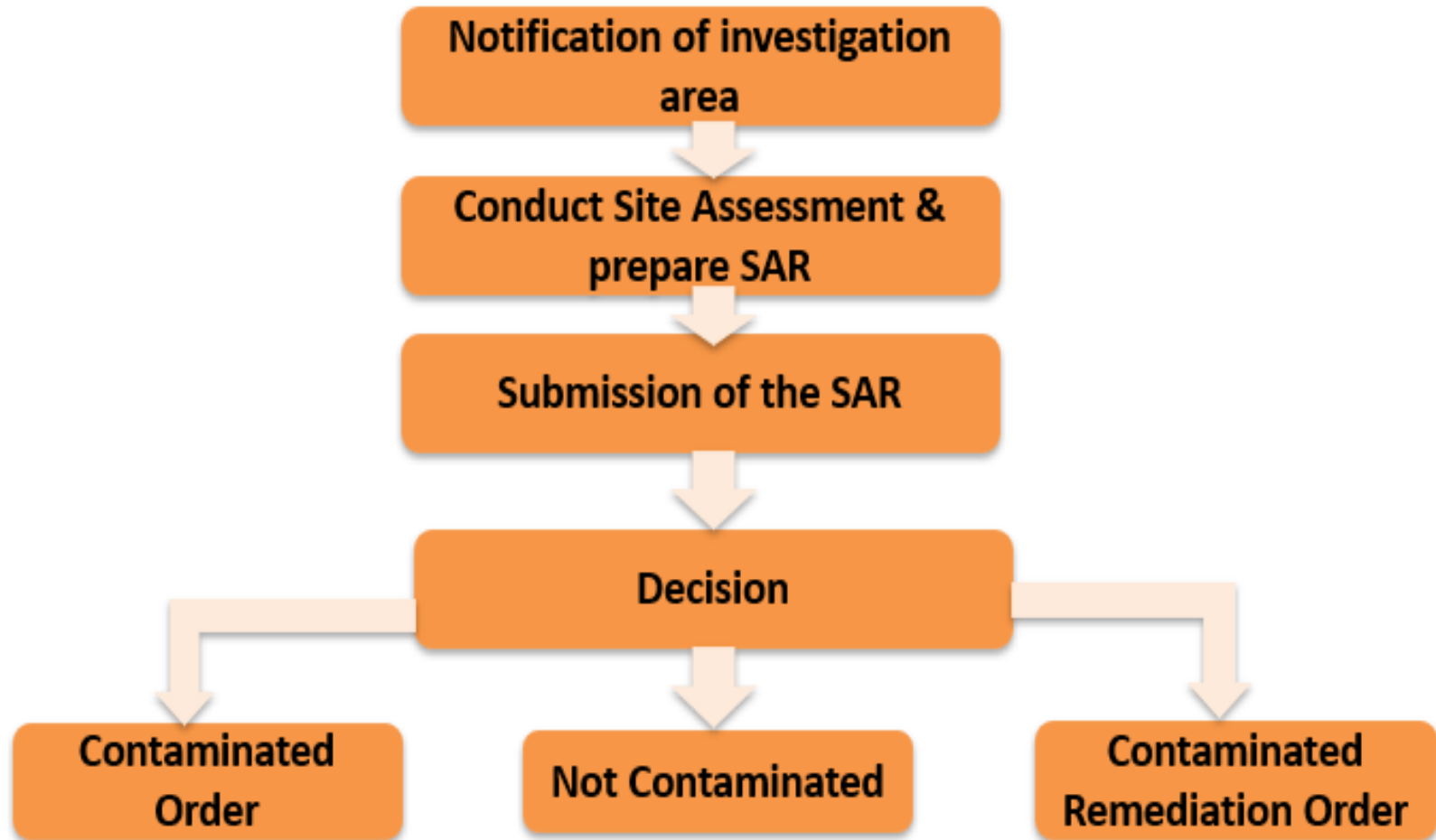
Consideration of Site Assessment Report

❖ On receipt of a site assessment report and remediation plan (if applicable) the department may, after consultation with the Department of Water and Sanitation and any other organ of state concerned, decide that—

- (a) Urgent Remediation Order
- (b) Remediation Order
- (c) Order
- (d) The investigation area is not contaminated.



Process flow of Part 8 of the Waste Act



Norms and Standards for Remediation of Contaminated Land and Soil Quality

- ❖ Has Table 1 (**Soil Screening Values for Metals and Organics**) and Table 2 (**Soil Screening Values for Anions**)
- ❖ Where a contaminant is not listed in Table 1 or Table 2, International guidelines are being used for screening and development of remediation objectives
- ❖ The standards do not apply in circumstances where natural background concentration exceeds the values provided in the standards



Table 1: Soil Screening Values for Metals and Organics

Parameter	Units	SSV1 All Land-Uses Protective of the Water Resource	SSV2 Informal Residential	SSV2 Standard Residential	SSV2 Commercial/ Industrial
<i>Metals and metalloids</i>					
Arsenic	mg/kg	5,8	23	48	150
Cadmium	mg/kg	7,5	15	32	260
Chromium (III)	mg/kg	46 000	46 000	96 000	790 000
Chromium (VI)	mg/kg	6,5	6,5	13	40
Cobalt	mg/kg	300	300	630	5 000
Copper	mg/kg	16	1 100	2 300	19 000
Lead	mg/kg	20	110	230	1 900
Manganese	mg/kg	740	740	1 500	12 000
Mercury	mg/kg	0,93	0,93	1,0	6,5
Nickel	mg/kg	91	620	1 200	10 000
Vanadium	mg/kg	150	150	320	2 600
Zinc	mg/kg	240	9 200	19 000	150 000
<i>Alkanes</i>					
C7-C9	mg/kg	2 300	2 300	2 400	23 000
C10-C14	mg/kg	440	440	500	4 400
C15-C36	mg/kg	45 000	45 000	91 000	740 000



Table 1: Soil Screening Values for Metals and Organics Con...

Benzo(a)pyrene	mg/kg	0,34	0,34	0,71	1,7
MTBE	mg/kg	0,0036	360	370	5 800
Organics					
Carbon Tetrachloride	mg/kg	0,25	0,27	0,26	4
Chlorobenzene	mg/kg	620	620	1 200	10 000
Chloroform	mg/kg	0,11	0,11	0,11	1,7
2 Chlorophenol	mg/kg	140	150	320	2 600
1,2 Dichlorobenzene	mg/kg	89	2 700	5 800	47 000
1,4-Dichlorobenzene	mg/kg	26	1 100	1 200	19 000
1,2-Dichloroethane	mg/kg	0,23	0,23	0,24	3,7
1,1 Dichloroethene	mg/kg	10	10	10	150
1,2,3-Trimethylbenzene	mg/kg	0,28	53	55	860
1,2 Dichloroethene	mg/kg	0.4	620	1,200	10,000
Trichlorobenzenes (total)	mg/kg	0,069	310	650	5 300
Nitrobenzene	mg/kg	2,8	2,8	2,9	45
1,1,2,2 Tetrachloroethane	mg/kg	0,32	0,32	0,34	5
2,4,6-Trichlorophenol	mg/kg	4	210	320	1 800
Vinyl Chloride	mg/kg	0,0037	0,10	0,11	1,5
PCBs	mg/kg	0,61	1,7	3,6	11
Cyanide	mg/kg	14	620	1 200	10 000



Table 2: Soil Screening Values for Anions

Anions	Soil Screening Level (mg/kg)
Chlorides	12 000
Fluorides	30
Nitrates-nitrite	120
Sulphates	4 000



Transfer of remediation site

- ❖ No person may transfer contaminated land without informing the person to whom that land is to be transferred that the land is contaminated and, in the case of a **remediation site**, without **notifying the Department**



National Contaminated Land Register

❖ **The National Department must keep a National Contaminated Land Register (NCLR) of contaminated land areas that includes information on—**

- (a) the owners and any users of contaminated land areas
- (b) the location of contaminated land areas
- (c) the nature and origin of the contamination



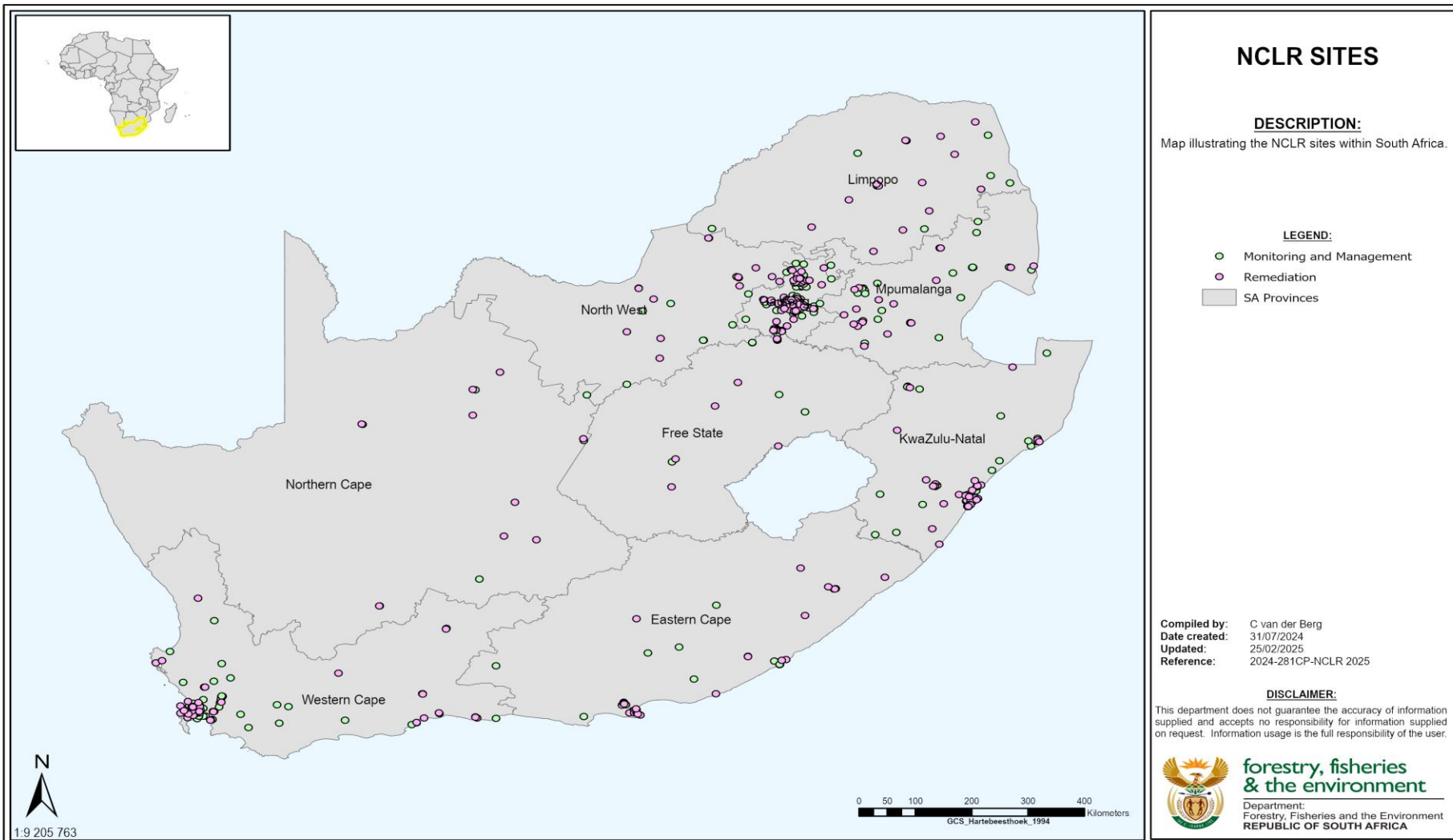
National Contaminated Land Register Con...

(d) whether contaminated land area—

- (i) presents a risk to health or the environment, and must be remediated urgently
- (ii) presents a risk to health or the environment, and must be remediated within a specified period
- (iii) does not present an immediate risk, but measures are required to address the monitoring and management of that risk

(f) restrictions of use that have been imposed on contaminated land areas

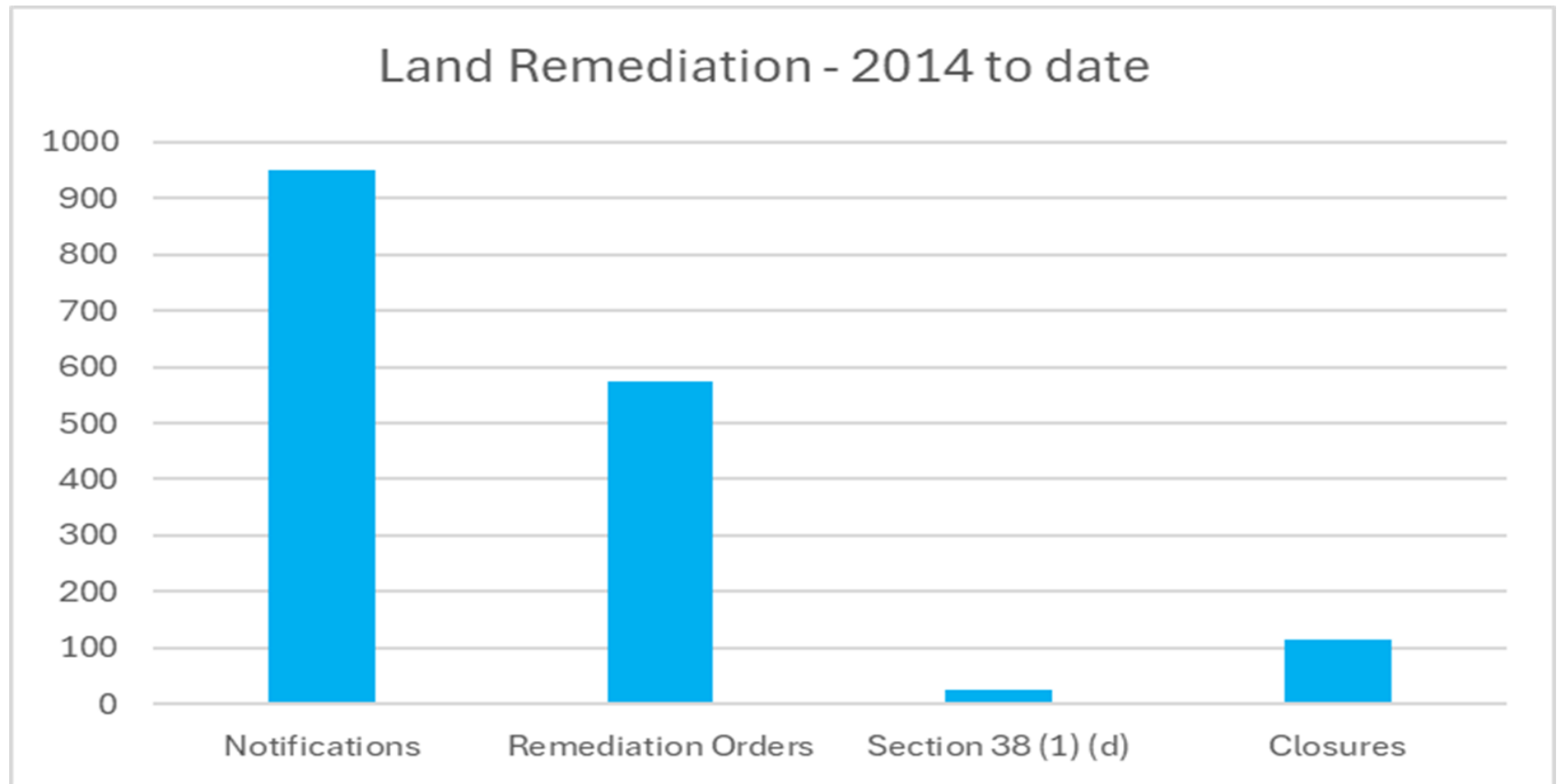




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Land Remediation at Glance - 2014 to date



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Remediation Technologies

- ❖ Air Sparging
- ❖ Bioremediation
- ❖ Phyto Remediation
- ❖ Permeable Reactive Barriers
- ❖ Natural Source Zone Depletion
- ❖ Soil Vapor Extraction
- ❖ Biosparging/ Bioventing
- ❖ In-situ Chemical Oxidation



Land Remediation online



❖ Land Remediation page link

<https://sawic.dffe.gov.za/SAWIC/landremediation>

- Land Remediation: NCLR and Part 8 Notification Form.
- IWMF and Workshops presentations.
- Online application platform: April 2025!



THANK YOU!

Directorate: Land Remediation

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Thank You



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