

Stakeholder perspectives regarding implementation of Part 8 NEM:WA

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WE ARE ALL AFRICANS

WE ARE ALL RECEPTORS

WE ARE ALL STAKEHOLDERS





SEALED MINE SHAFT - EAST RAND.
Mine Closed 1976
Property Foreclosure ?
Liability for Remediation transferred to
the lender



Remnants of mine
rock dump



**THESEN ISLAND'S
KNYSNA**

INTRODUCTION

Applicable Legislation:

- National Environmental Management: Waste Act of 2008 (Waste Act)
 - Part 8
- Framework for the Management of Contaminated Land (Framework)
 - National Norms & Standards – practical implementation of remediation activities in compliance with Section 7 (2) (d)
 - SSVs are an integral component of the remediation framework Gazetted GN331 2 May 2014

WHAT IS CONTAMINATED LAND?

Legal Definition of 'Contaminated' in SA environmental practice:

- 'Contaminated' means the presence in or under any land, site buildings or structures of a substance or microorganism above the concentration which is normally present in or under that land, and which substances directly or indirectly affect or may affect the quality of soil or the environment adversely.
- Definition is very inclusive and conservative. Hence it is informed in terms of risk to human and environmental in the 'Norms and Standards' of GN331 2 May 2014.
- .

INTRODUCTION

- **The 'Framework for the Management of Contaminated Land in South Africa' (2010) provides decision-support measures and is intended to provide the foundation for:**
 - Nationally consistent methods and numerical values for the assessment of contaminated land
 - A consistent policy on future land use and related activity patterns for human receptors for contaminated sites
 - Enabling the development of a contaminated land register
- **Framework consists of the following components:**
 - Section 2: Protocol for Site Risk Assessment
 - Section 3: Norms and Standards for Site Assessment Reporting
 - Section 4: The derivation and use of Soil Screening Values

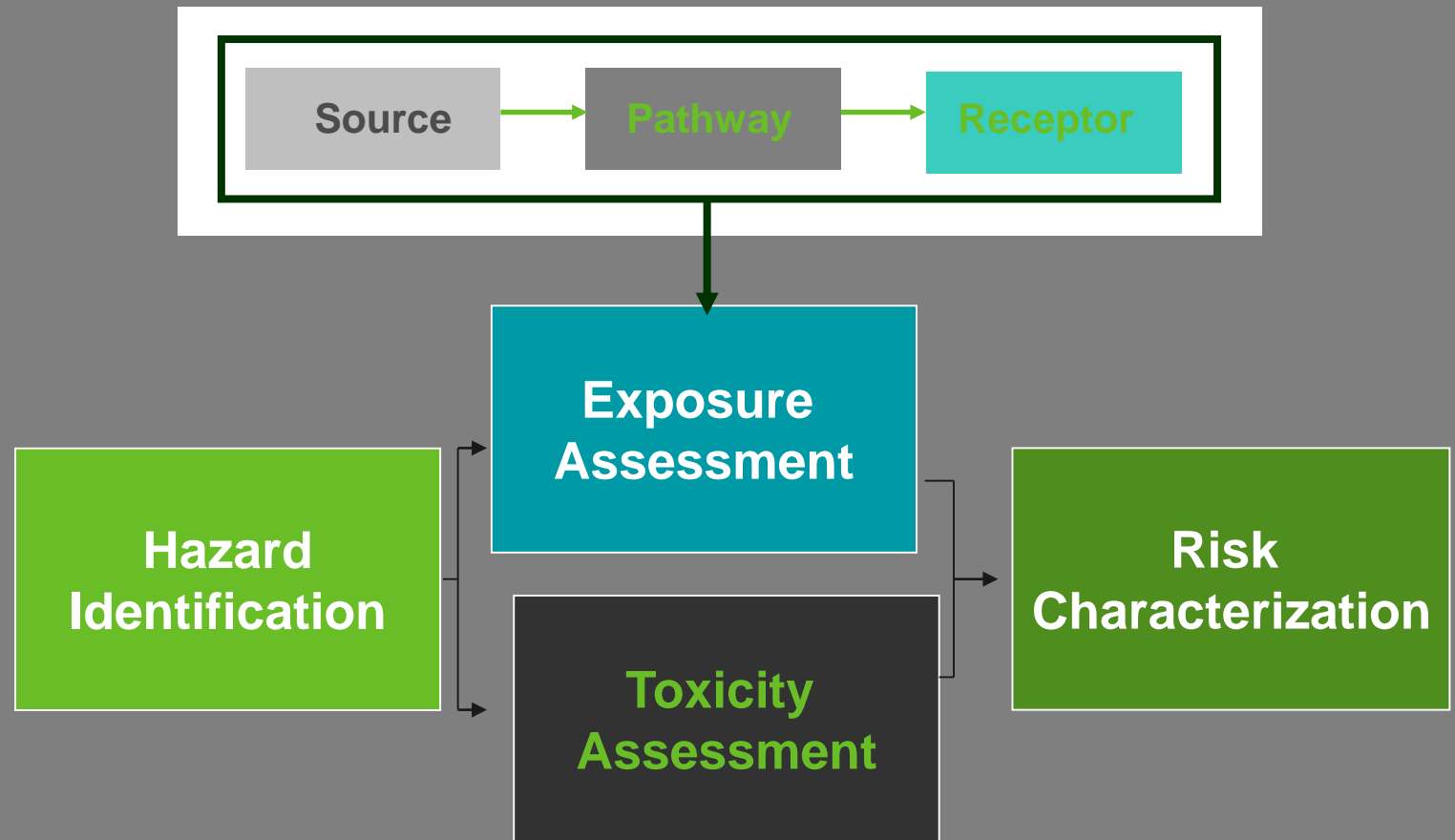
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METHODOLOGY

CONCEPTUAL APPROACH

- International best practice with definition of pathways and receptors applicable to South African context



PURPOSE OF SSVS

→ Soil Screening Values are not:

- Default remediation standards
- Applicable to every site under all circumstances – only valid if underlying assumptions are consistent with actual site conditions
- Absolute minimum values
- Screening values applicable to occupational exposures
- Applicable to risk of property damage
- A substitute for a thorough conceptual and qualitative understanding of a site's condition and the risks it might pose to human health and the environment

NEM:WA (Act 59 of 2008)

- Section 35 – application of this Part
- Section 36 – **identification/notification of investigation areas**
- Section 37 – consequences of identification/notification
- Section 38 – **consideration of site assessment reports**
- Section 39 – orders to remediate..
- Section 40 – **transfer of remediation sites**
- Section 41 – contaminated land register

WHAT IS CONTAMINATED LAND?

Legal Requirements of the Waste Act:

→ Chapter 4 Part 8 of the Waste Act - Contaminated Land

S36	Identification and notification of investigation areas.
36(5)	An owner of land that is significantly contaminated or a person who undertakes an activity that caused the land to be significantly contaminated must notify the Minister and MEC of that contamination as soon as that person becomes aware of that contamination.

Disclosure of Status

- **Voluntary disclosure.** A number of owners have notified the DEA of their contamination status, some with requests for remediation orders.
- **Non-disclosure.** Owners reluctant to disclose question the definition of 'significantly contaminated' as their defence position. Alternatively site characterisation is in-draft, incomplete and data requires verification.
- Does exceeding the appropriate SSV for soils provide a definition of significance?

DEA Notification Form

- Notification of contaminated land
-
- The following information should be supplied to the Minister or MEC by the owner of the contaminated land, or person who undertakes the activity that caused contamination of land:
- Information required should be typed in the space provided
- Name and Signature of delegated person
- The following should be attached:
- Current site plan - with scale bar showing north direction, local water drainage and other locally significant features on-site and immediate off-site. The plan should also show the historical location of structures that may have affected the distribution of contamination (e.g. building, underground storage tanks, treatment baths, etc);
- Locality map

Site Map



Stakeholder Impressions to Date

- **NOTIFICATION PROCESS**
- Simple and clearly understood
- Problem – voluntary disclosure has created a backlog of historic site notifications with widely varying degree of site characterisation information.
- Is there a 'triage' system to identify applications for urgent remediation orders and high risk sites and separate out the low risk sites?
- What timeframes for issuing of remediation orders are acceptable in terms of responsible governance and procedural fairness?
- Sign-off and close-out documentation?
- The Contaminated Land Register?

Supporting the Framework for the Management of Contaminated Land

- The 'Framework'
- A starting point
- What's missing?

Groundwater.....?

- The original SA Framework project was initiated by Department of Water Affairs in 2004.
- The intention was a set of holistic remediation guidelines that were integrated with surface and groundwater resource protection measures.
- South Africa was set to revise and update water quality guidelines at this time.
- Neither the remediation guidelines or the updated water quality guidelines were completed.
- Department of Environmental Affairs (DEA) took over the mandate for waste management and contaminated land and completed the Framework in 2010 and issued norms and standards in 2014.
- DEA Mandate does not extend to remediation guidelines for groundwater.

Groundwater.....

- The current SA Framework provides a very simple generic source-pathway-receptor risk equation for groundwater.

Calculation Method: Soil Screening Values for Protection of Water Resources

$$Y = C_w \times K_d \times DAF$$

Where: Y = total contaminant concentration in soil at equilibrium with pore water at defined water quality standard

C_w = water quality standard (aquatic ecosystem / domestic drinking water use guideline)

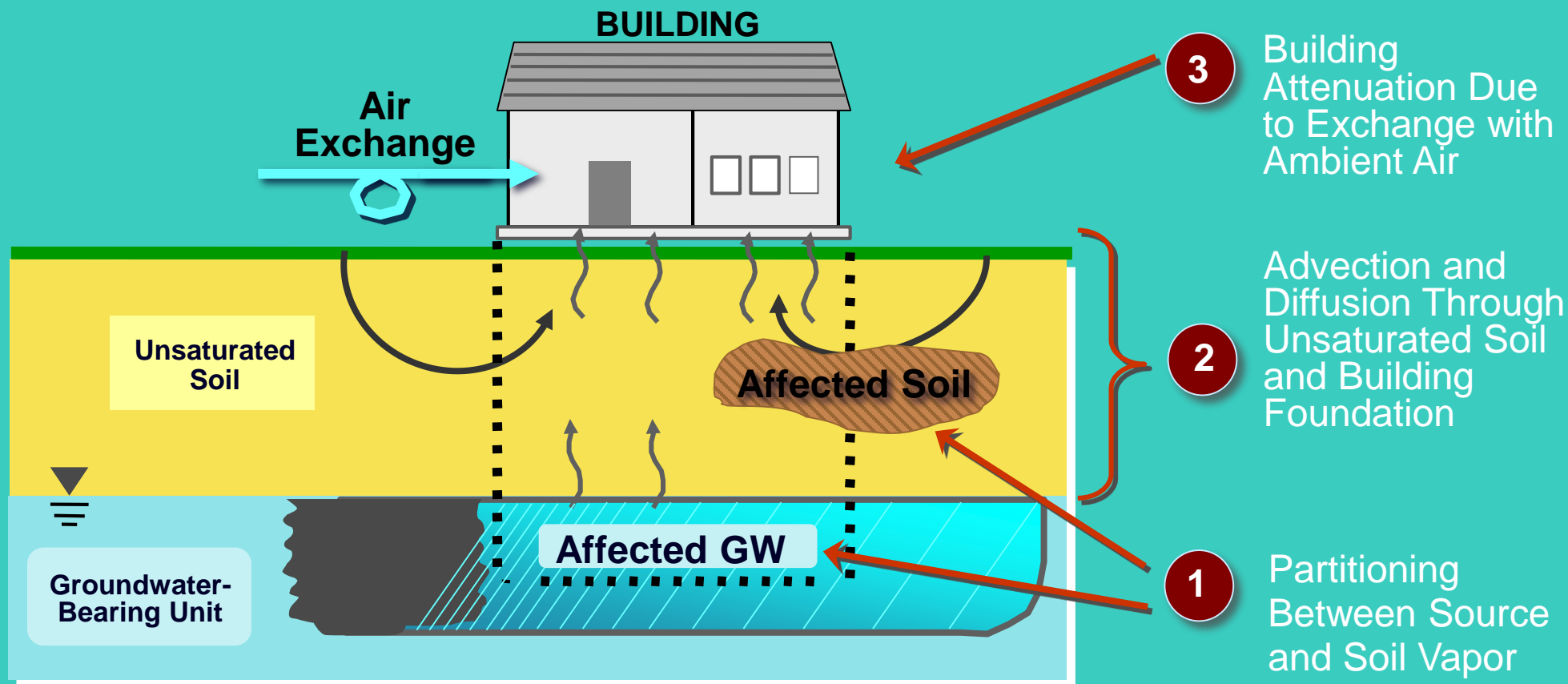
K_d = partition coefficient

DAF = dilution attenuation factor

Groundwater.....

- What about NAPL ?
- There is no definitive technical statement or policy position from the DEA or DWS to groundwater contaminated with NAPL
- Does the presence of NAPL define 'significant' levels of contamination
or
- Does the risk posed by the NAPL define its significance
- These are not unique questions for regulators to face, it is however difficult to formulate answers in a norms and standards approach

Vapour Intrusion Human Health Risk Assessment



Vapour intrusion model

- SA Framework based on VOC concentration in soil and is based on the Johnson-Ettinger model. Conservative pathway assumption of vertical separation of 1m and no allowance for breakdown of VOCs
- Need to consider NAPL and dissolved phase VOCs as potential sources.
- Need to allow for greater vertical separation outside the realms of the simple generic assumptions and to delineate lateral inclusion zones.
- Need to allow for vapour intrusion attenuation factors.
- Adopt Bio-vapour model or similar for trial on SA sites.

Policy position on NAPL Remediation?



SSVs and Waste Classification

- The SA Framework SSVs were adopted as the first tier TCT0 values for GN635 Waste Classification ie define the difference between inert waste and Type 3 Hazardous Waste.
- Except in cases where no SSV was available. Arbitrary selection of waste TCT0 should have been avoided.
- Need to re-visit this relationship and to expand both listings to form an internally consistent database.
- SSVs have already been reviewed and updated between the release of the 'Framework' document and the Norms and Standards.
- Need to formalise the review process and update the listings to respond to changes in international toxicological data and in response to local needs.

Asbestos in soils

- Short annexure in the SA Framework.
- Norms and Standards not developed.
- Reduction of risk approach suggested but not formalised.
- Global problem and SA Framework should be updated to reflect latest thinking on the issue.

BUSINESS IMPLICATIONS FOR STAKEHOLDERS



→ New driver in the marketplace

Changing legislation and the implementation of 'Norms and Standards.'

Requires awareness and improved risk management for investment in industrial properties.

Need for improved due diligence in transactions.

Valuations may need to include provisions for remediation of environmental contamination.

A SOLUTION FOR STAKEHOLDERS AND REGULATORS

- **NICOLA – Network for Industrially Contaminated Land in Africa**
- **Provides for a legitimate stakeholder forum promoting sustainable remediation by formulating and applying good practice through transfer of scientific and technological knowledge.**
- **Working Groups already in place to develop position papers and guideline documents.**



NICOLA

Network for Industrially Contaminated Land – Africa

NICOLA is a forum on contaminated land management in Africa, promoting co-operation between industry, academia and service providers on the development and application of sustainable technologies.

NICOLA FOCUSES ITS ACTIVITIES IN THREE MAIN AREAS:

- Provide an African forum for the dissemination and exchange of good practice, practical and scientific knowledge and ideas to manage contaminated land in a sustainable way;
- Stimulate coordinated, interdisciplinary projects on collaborative, problem oriented research and knowledge transfer to address identified needs; and
- Develop new relationships and strengthen existing relationships with other networks.



NICOLA MEMBERS ALREADY INCLUDE:



TOTAL

srk consulting



ENVIRON
environcorp.com

AECOM



USK Environmental & Waste Engineering

Specialist Environmental Sciences & Engineering
Environmental & Geotechnical Drilling Specialists



WSP



**Golder
Associates**

MEMBERSHIP ENQUIRIES:

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**PARSONS
BRINCKERHOFF**



Network for Industrially Contaminated Land in Africa (NICOLA)



Invitation to NICOLA's Inaugural Annual Conference: The regulatory-technical-implementation nexus of contaminated land management in South Africa

NICOLA invites you to its inaugural annual conference taking place on Tuesday, 3 and Wednesday, 4 November in Sandton, Johannesburg.

Please join us for two days of inspiration, knowledge sharing and networking!

NICOLA is a forum on contaminated land management in Africa, promoting co-operation between government, industry, academia and service providers on the development and application of sustainable technologies. The overall objective of NICOLA is to pro-actively enable the African Industrial and Mining Sector to identify, assess and manage contaminated land efficiently, cost-effectively, and within a framework of sustainability.

Conference Themes:

- Successes and challenges related to the implementation of Part 8 of NEMWA and the related norms and standards
- Emerging site assessment tools and remediation technologies
- Sustainable remediation
- Development of good practice guidelines and industry norms and standards for groundwater
- Training and capacity building programmes
- Case studies related to the above themes

Date & Time

Tuesday, 3 and Wednesday,
4 November 2015

Programme

A broad programme is included. A detailed programme will be distributed to registered delegate by 9 October 2015

Venue

Auditorium
Norton Rose Fulbright South
Africa Inc,
15 Alice Lane, Sandton
GPS: -26.10815, 28.05004

[Link to a map](#)

Accommodation & Travel

Delegates and speakers are