

Dumping at Sea Disposal of Waste in South African Waters

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Coastal Pollution Management



Oceans and Coasts

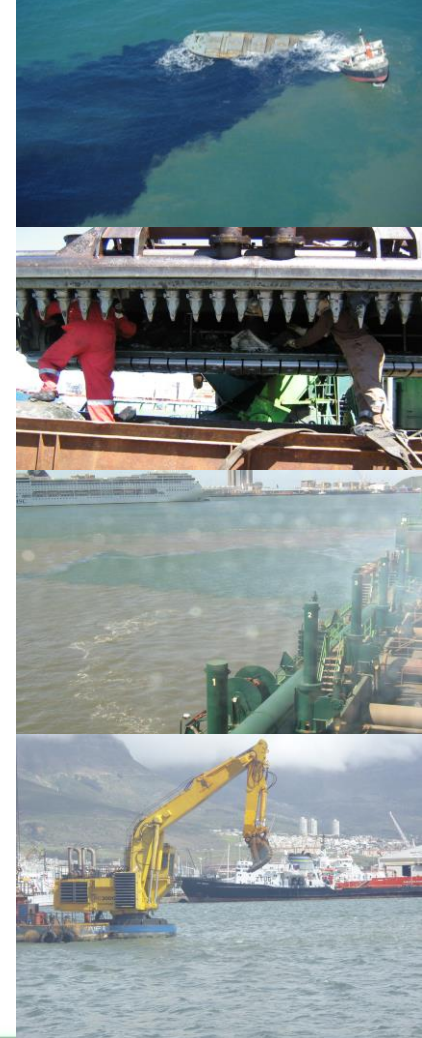


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Overview

- National Arrangements
- National Legislation and Regulations
- Implementation of the Waste Assessment Guidelines and Waste Assessment Audit
- South African waste reduction achievements
 - Dumped volumes
 - Sediment health trends (port health)
 - Current Waste Reduction Approaches



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An aerial photograph of a coastal city, likely San Francisco, serves as the background. The city's skyline, including the Golden Gate Bridge and surrounding hills, is visible. Overlaid on this image is a Venn diagram consisting of three overlapping red circles. The top circle is labeled 'National'. The bottom-left circle is labeled 'Local' with the number '284' below it. The bottom-right circle is labeled 'Provincial' with the number '9' below it. The circles overlap in the center, but no text is present in the intersection areas.

National

Local
284

Provincial
9



Legislative mandate

- National Legislation for Environmental Governance:
National Environmental Management Act, 1998 (Act No. 107 of 1998)
(NEMA)

Specific Legislation Under this Act enforcing Dumping at Sea Governance:

- Repealed- 1980: Dumping at Sea Control Act which informed – London Convention
- 2008: National Environmental Management: Integrated Coastal Management – London Protocol
 - National Action List for dredged material proposed for disposal
 - Regulations to the Act



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Permitting and Requirements

- The Minister may issue a dumping permit for a period of not more than five years where after a new application must be made.

Minimum information for assessment of applications in terms of the ICMA Regulations

- (1) An applicant must, in an application for a dumping permit, provide all the information required by the application form, including the following—
 - (a) the type of waste or other material intended for dumping;
 - (b) a detailed description and characterisation of the waste or other material intended for dumping;



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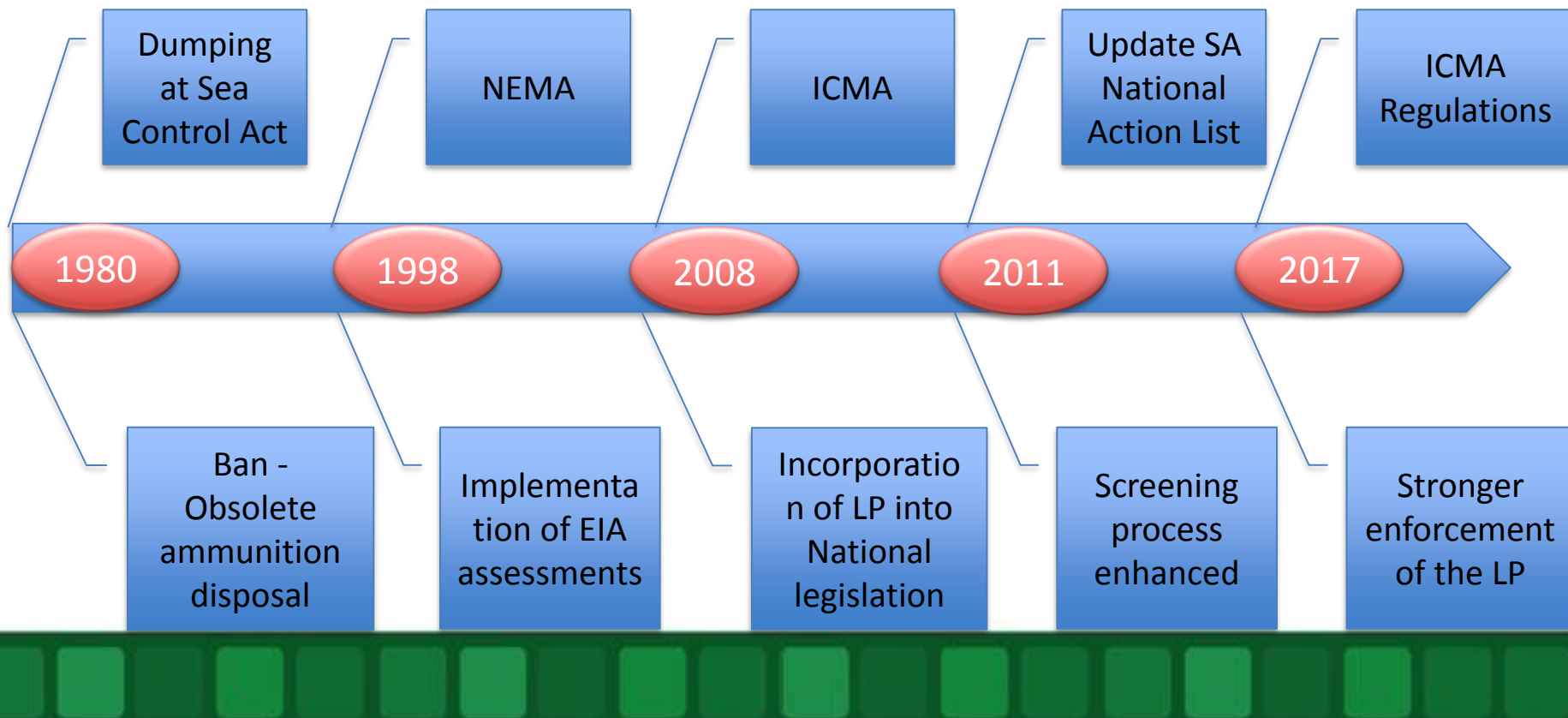
Permitting and Requirements

- (c) where applicable, the chemical, physical and biological composition and properties of the waste or other material intended for dumping;
- (d) full details of the identity of the applicant;
- (e) the volume or mass of the waste or other material intended for dumping;
- (f) the location of the intended disposal site;
- (g) a report on the assessment of the availability of alternatives to disposing of the waste or other material in the sea and a demonstration in the report that the dumping at sea is, in light of that assessment, the best environmentally, socially and economically viable option for disposal;



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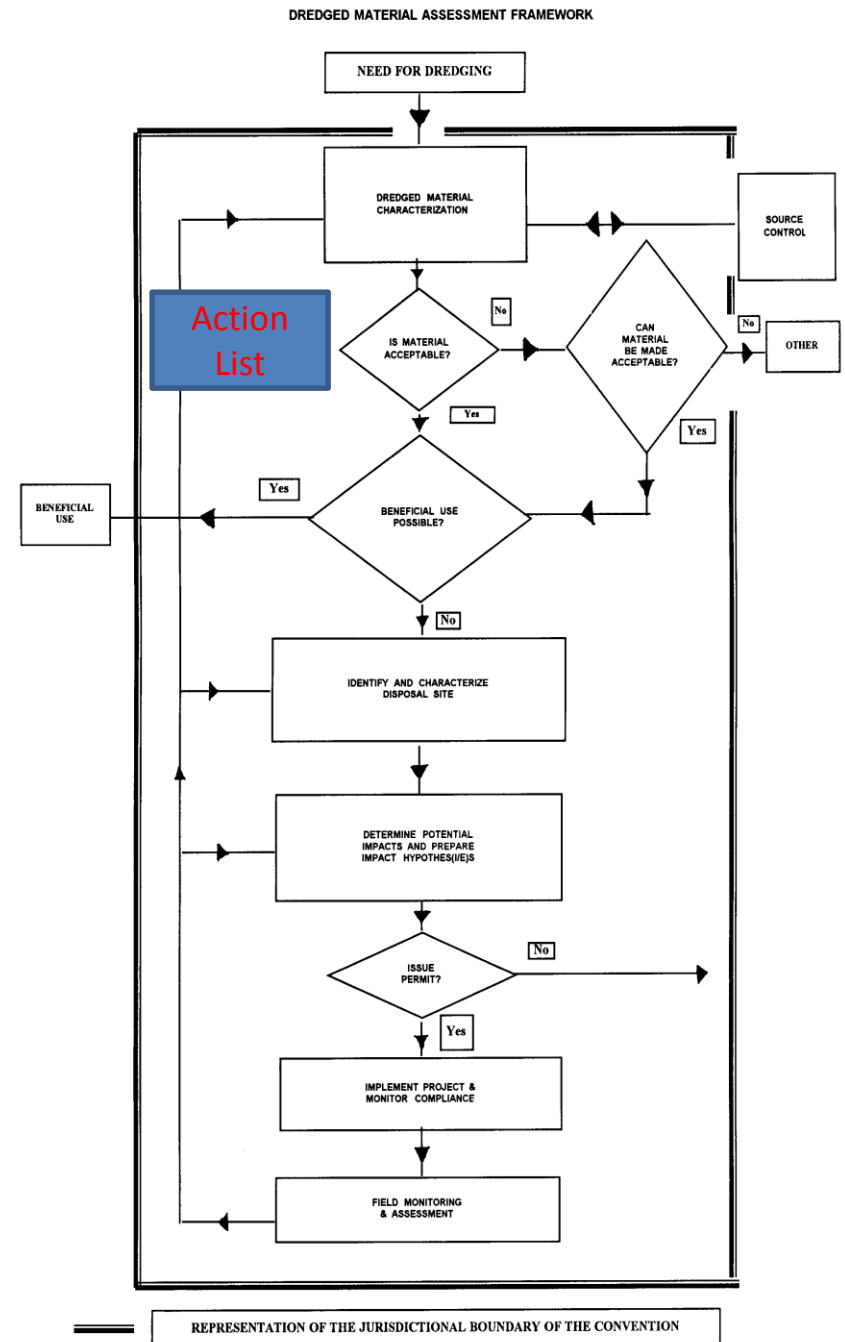


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- **Integrated Coastal Management Act** (Act 24 of 2008): ‘The Minister must progressively and subject to available resources, develop a national action list to provide a mechanism for screening waste and other material on the basis of their potential effect on human health and the marine environment.’

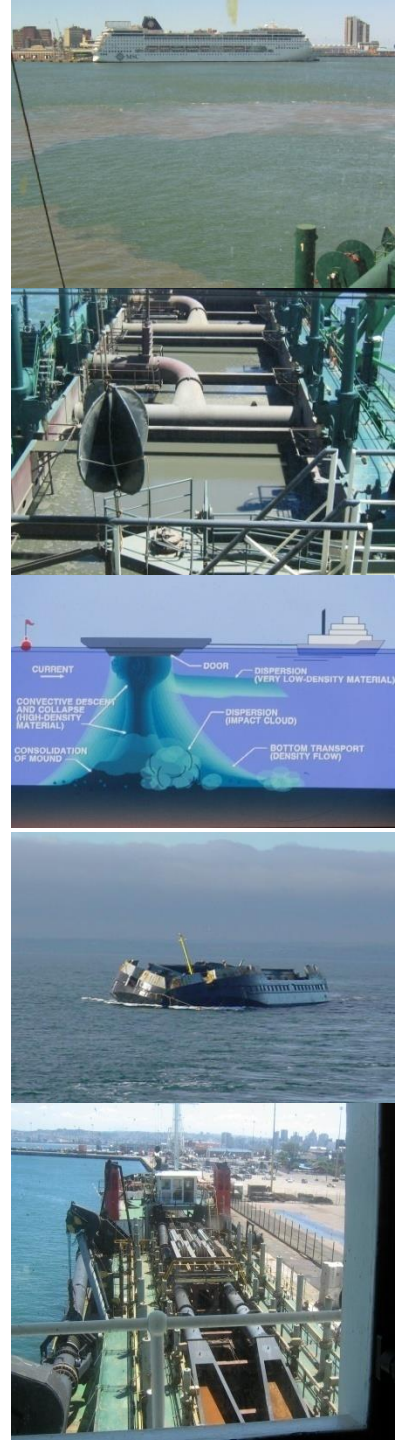
- Assessment of Dredged Material
 - Evaluate using LC Assessment Framework,
 - Management decision based on technical recommendation.
 - (Action List)**



Previous National Action List

- South Africa current previous action list limitations:
 - The national action list were adopted from sediment quality guidelines derived for application in certain jurisdictions and countries. Some limitation of the current action list are:
 - Some guidelines are inappropriate for South African coastal waters,
 - Some Guidelines are over-protective and some possibly under-protective,

Current National Action List		
Metal	Level 1	Level 2
Arsenic	30 - 150	>150
Cadmium	1.5 – 10.0	>10
Chromium	50 - 500	>500
Copper	50 - 500	>500
Mercury	0.5 – 5.0	>5.0
Nickel	50 - 500	>500
Lead	100 - 500	>500
Zinc	150 - 750	>750

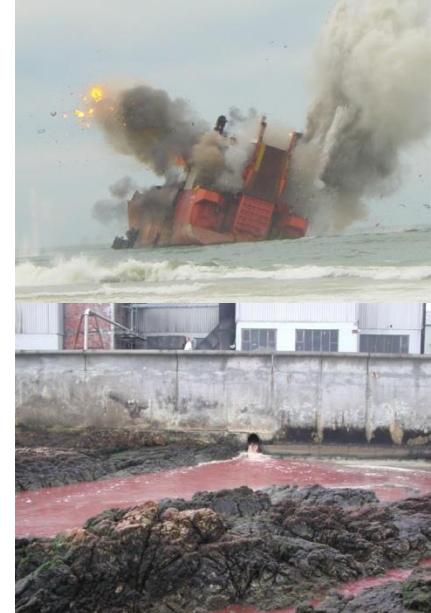


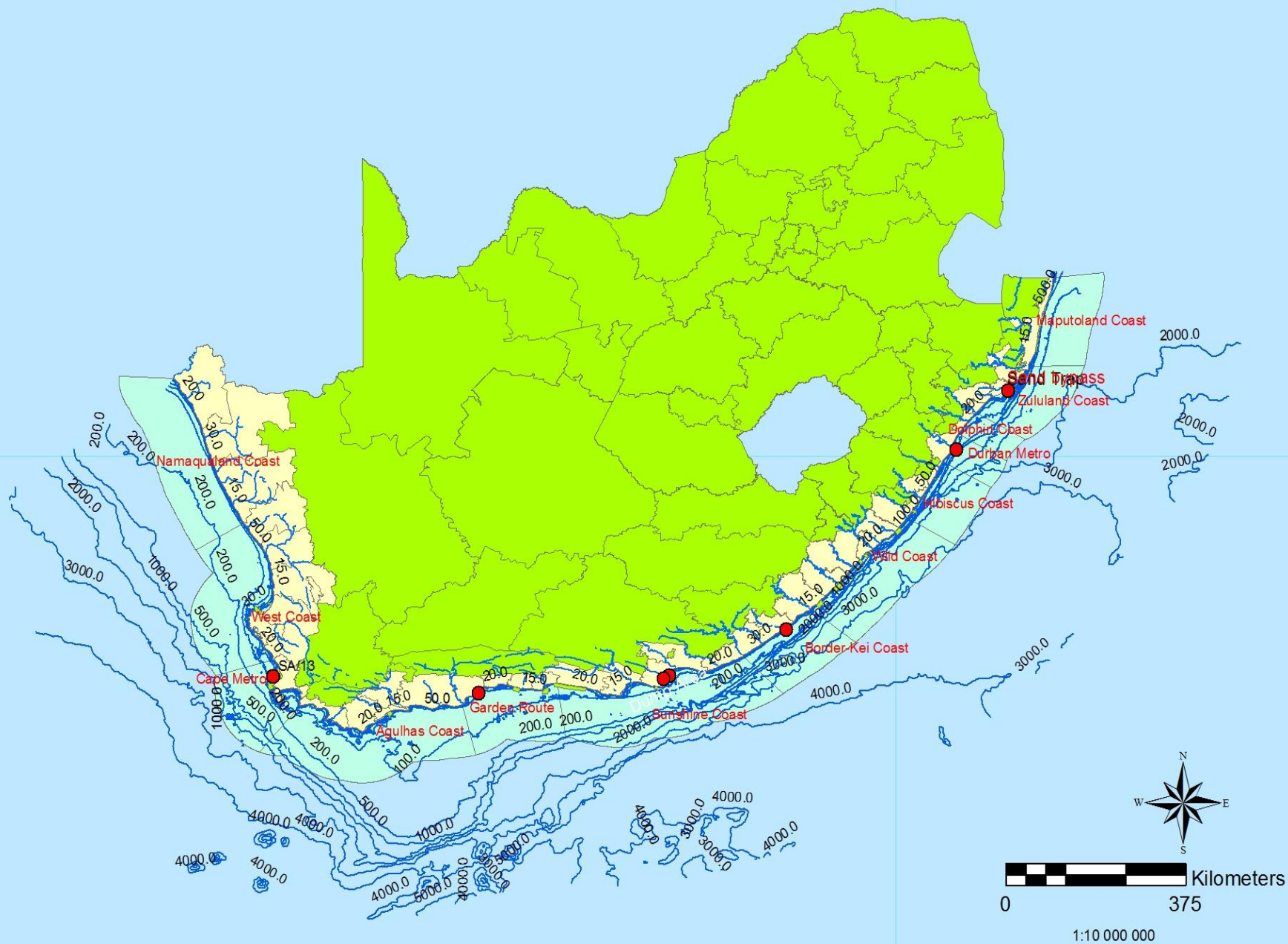
Update of South Africa's National Action List

- In 2010 Dr Brent Newman (CSRI) was contracted to update the current unofficial National Action List.
- A draft action list was developed and in December 2011 this the action list was adopted for SA.

Updated National Action List			
Metal	Warning Level	Level 1	Level 2
Arsenic	42 ^a	57 ^b	93 ^b
Cadmium	1.2 ^c	5.1 ^b	9.6 ^c
Chromium	135 ^d /250 ^e	260 ^b	370 ^c
Copper	110 ^a	230 ^a	390 ^b
Mercury	0.43 ^b	0.84 ^b	1.5 ^c
Nickel	62 ^d /88 ^e	140 ^b	370 ^b
Lead	110 ^a	218 ^c	530 ^b
Zinc	270 ^a	410 ^b	960 ^b

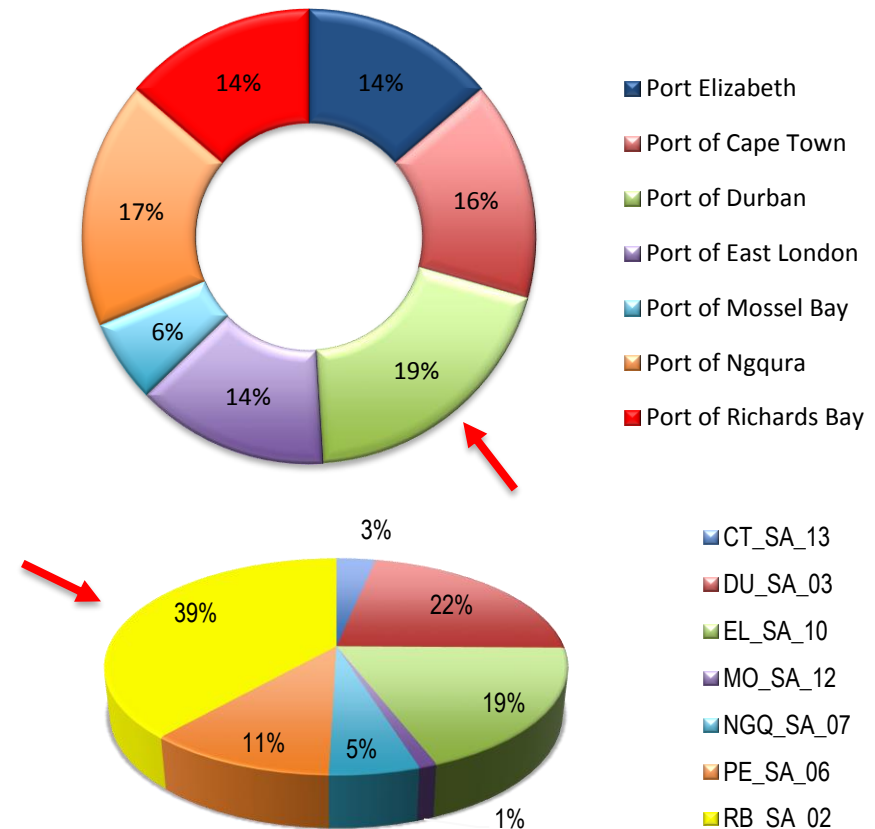
a - Environment Canada and MDDEP (2007), b - USACE (2006), c
- Long et al. (1995), d - for Eastern Cape, e - for KwaZulu-Natal





Permits issued (Review period, 2008 – 2014)- Dredged Spoil

- Port of Durban was issued the most permits (19%) followed by Port of Ngqura.
- The Port of Richards Bay has the highest dumped volume.
- The three biggest dumpers:
 - Port of Richards Bay
 - Port of Durban
 - Port of East London



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	Volume
Volume Permitted	30285347
Volume Dumped	17740989

Sediment analysis



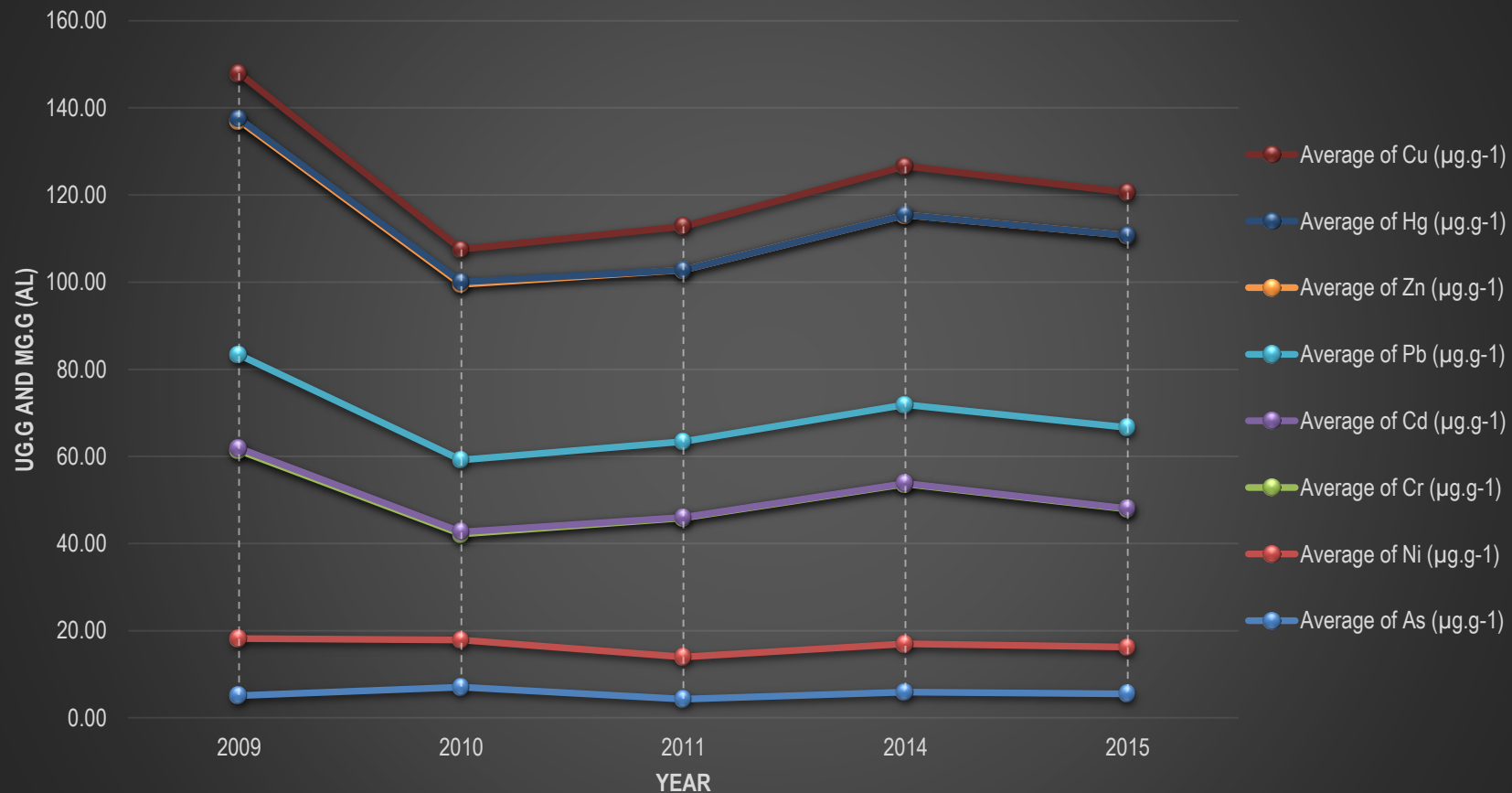
- Average heavy metal concentrations
 - Per port
 - Per year
- This is **not** a comparison
 - Between Ports
 - Between Metals
- Note:
 - Some metal annual results are being processed and may not be reflected in the data
 - Gaps in the years may further be the results of data loss over time (earlier years)



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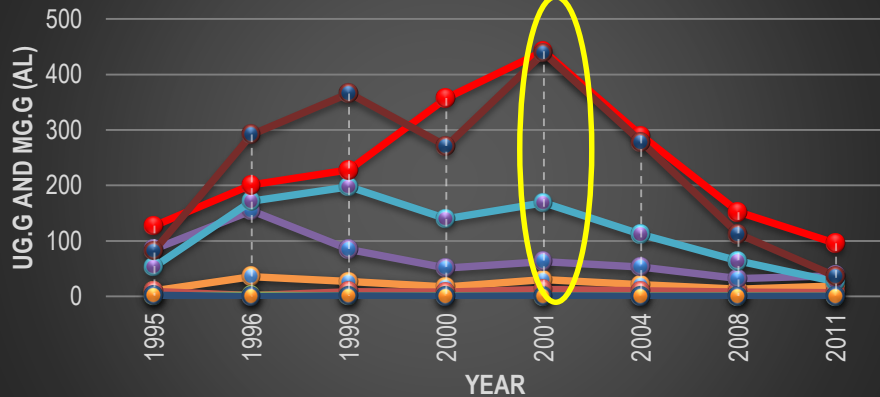
Port of Ngqura



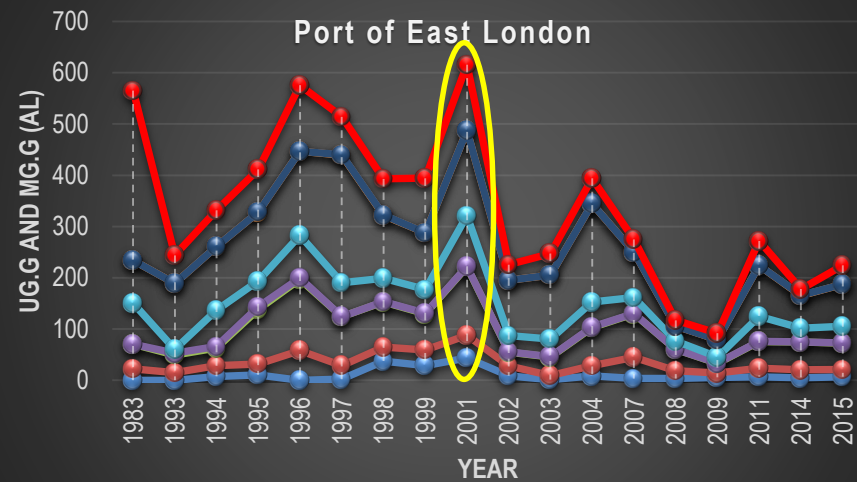
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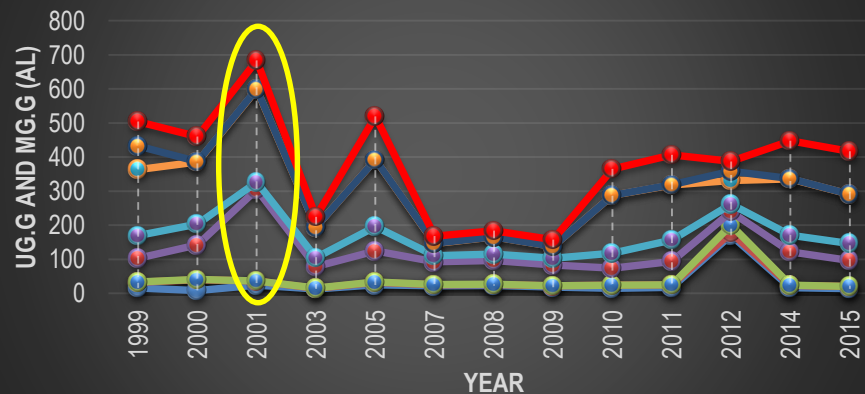
Port of Cape Town



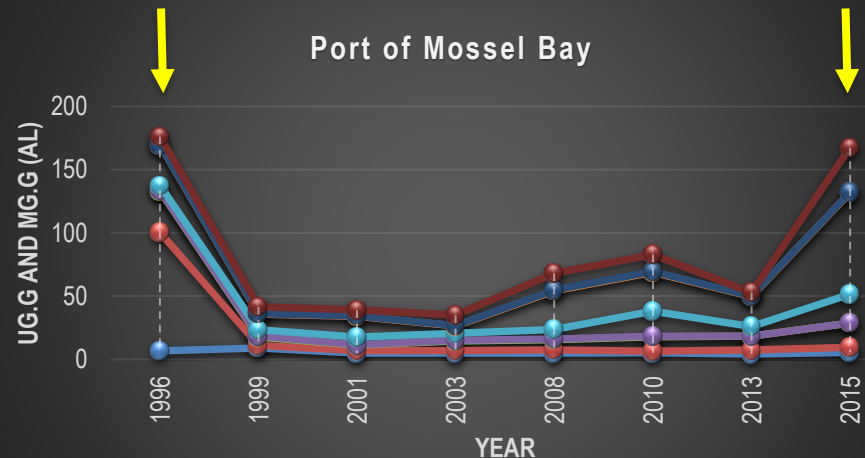
Port of East London



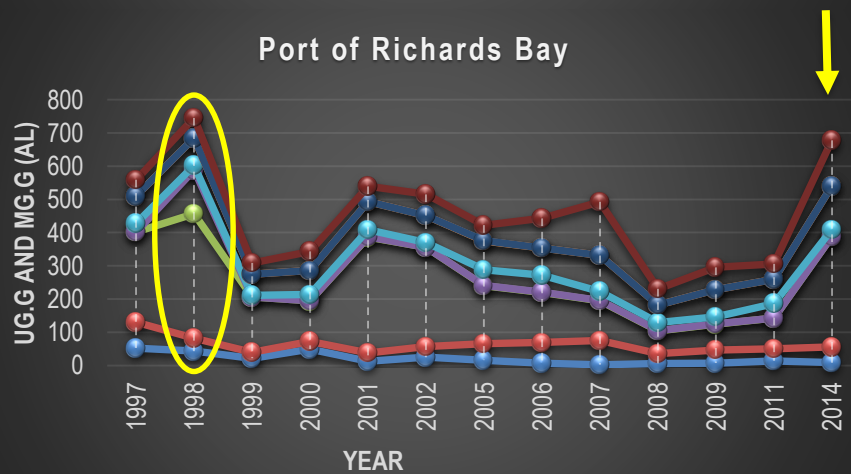
Port of Durban



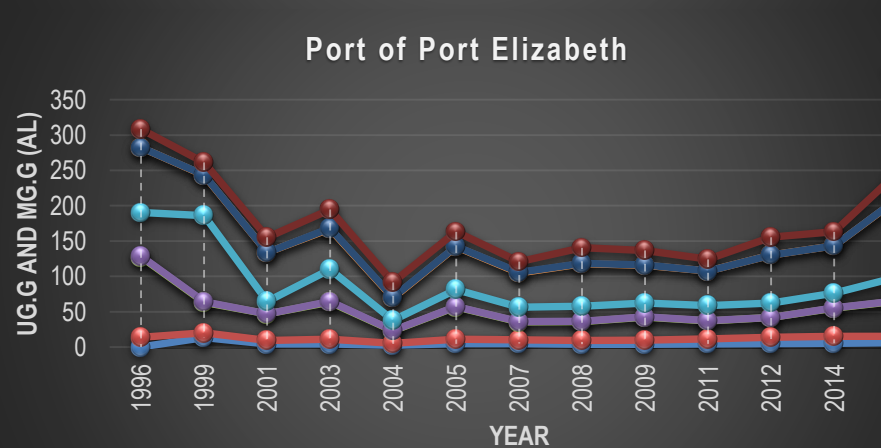
Port of Mossel Bay



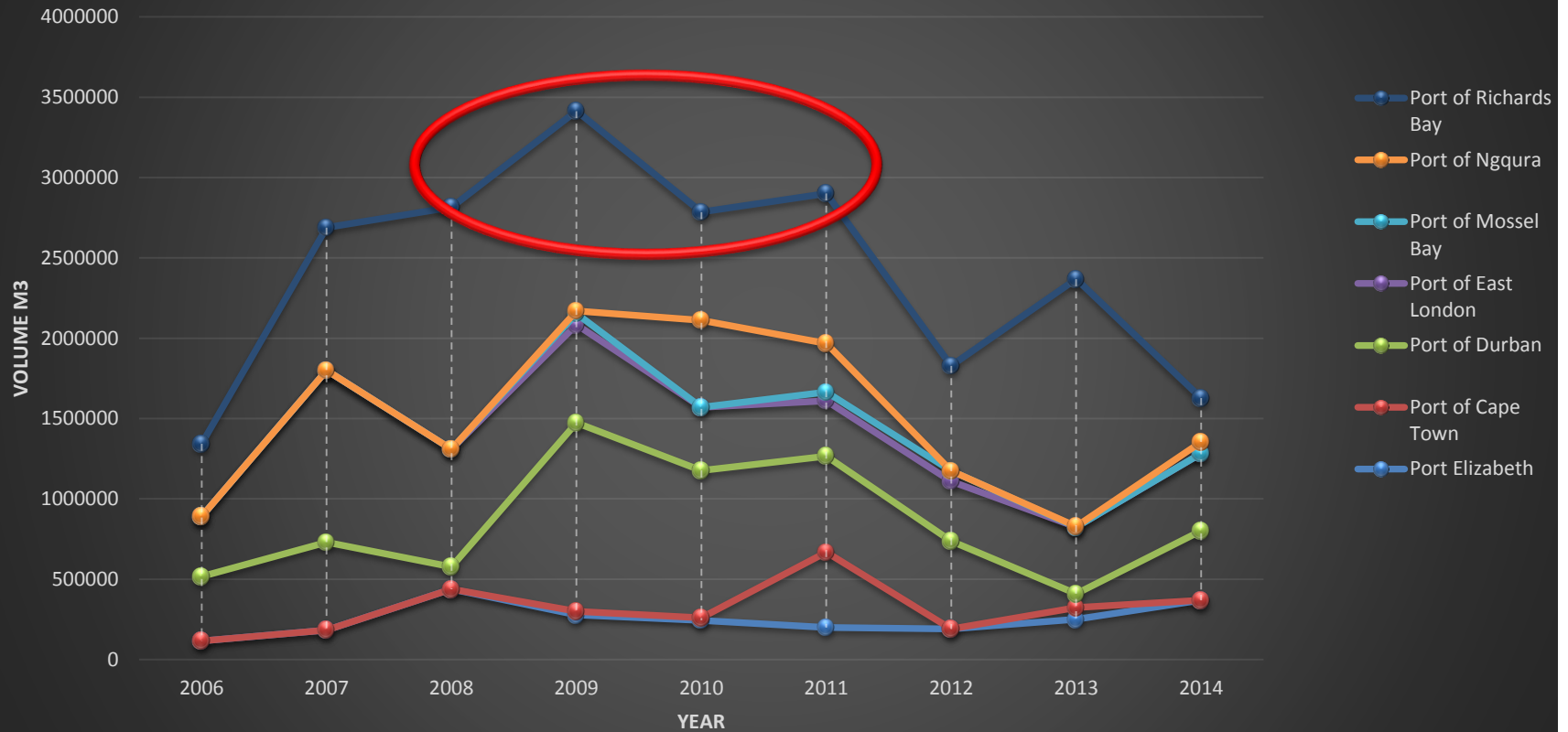
Port of Richards Bay



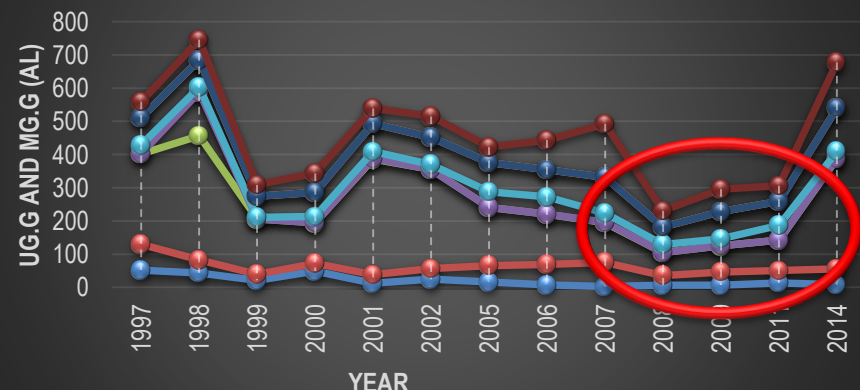
Port of Port Elizabeth



Volume Dumped At Sea



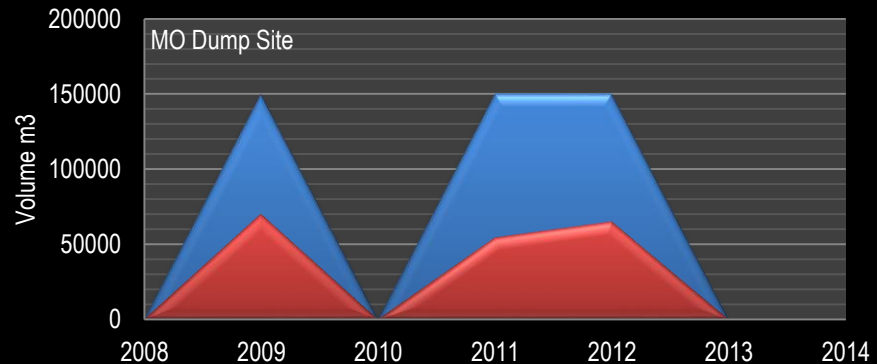
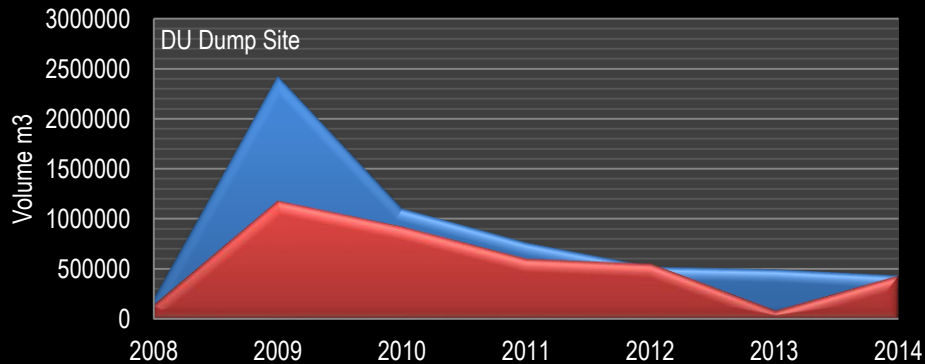
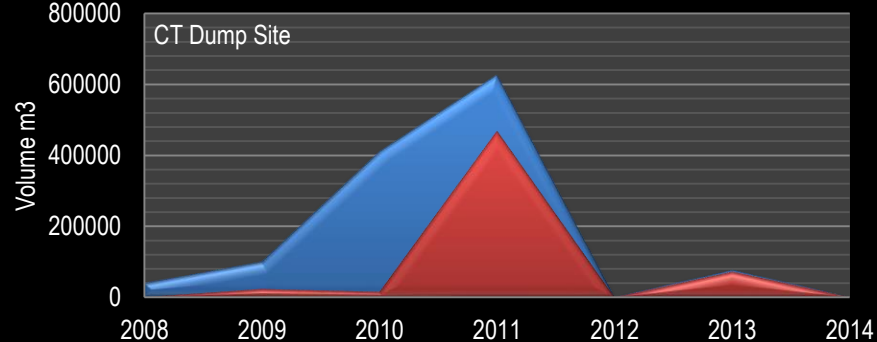
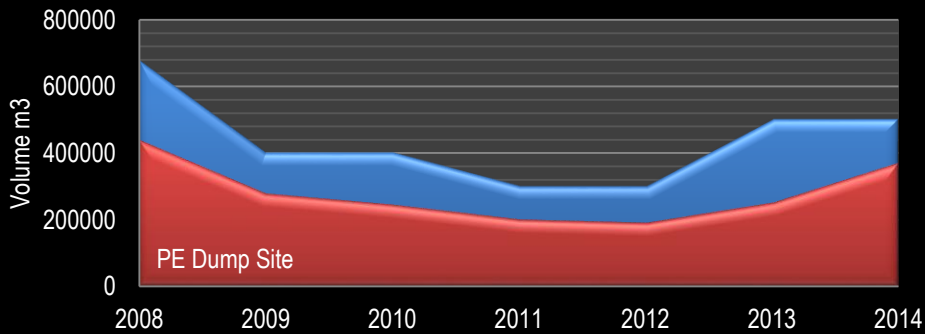
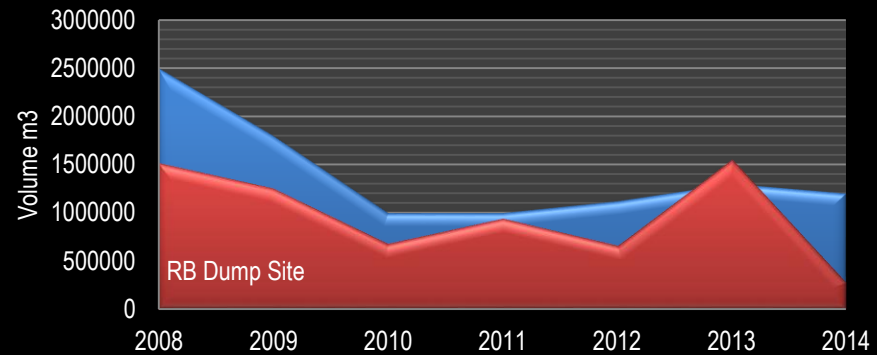
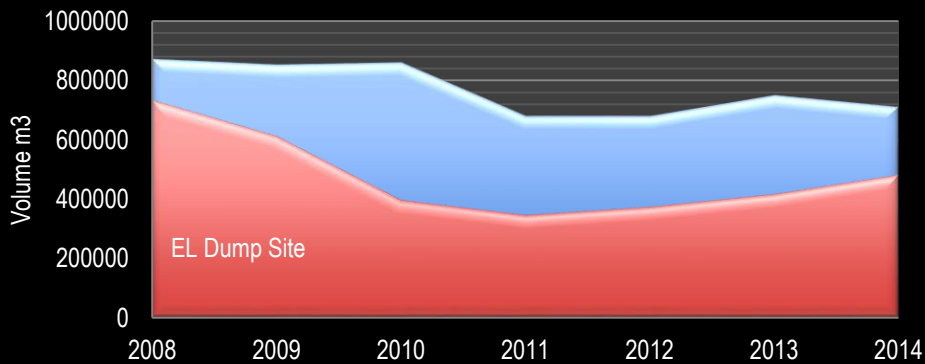
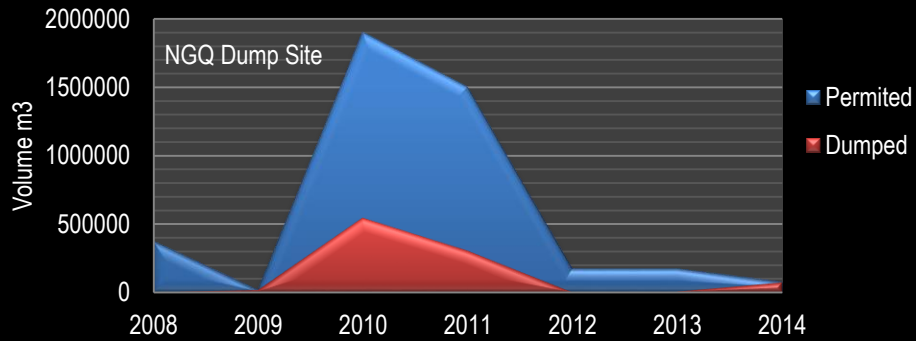
Port of Richards Bay



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Disposal Site Monitoring



Waste Reduction Approaches

1. Beach Nourishment
2. Harbour development infill
3. Cooperative Approach

Government/industry cooperation to reduce the impact of dredged material disposal through better coordination of:

1. Dumping events
2. Monitoring
3. Source control



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**"One does not swat a
gnat while being
charged by elephants"**

- Alvin Winberg (1987)

**Focus on what really
matters, the big
picture, not the
minutiae**



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