

Chapter 24: Water quality monitoring and public health protocol

1. Management issue

Monitoring of beach water quality at designated beaches within the City of Cape Town jurisdiction in accordance with national guidelines is necessary to ensure that users of the beaches are not exposed to health risks associated with polluted water. Samples are to be collected at listed beaches twice per month throughout the year. Since beaches are also utilised during winter by surfers and kite boarders, there will be no restriction of monitoring to a “summer bathing period”.

2. Roles and responsibilities

Sport and Recreation is responsible for management of the City’s designated beaches and City Health (Environmental Health) is responsible for monitoring the quality of water to ensure that the public are not exposed to health risks while utilising these beaches.

Environmental Health must, in cooperation with Sport and Recreation, place health warning signs at closed beaches and Law Enforcement must ensure that the public do not utilise these closed beaches.

The Stormwater & Sustainability branch co-ordinates and funds the coastal water quality monitoring programme.

Scientific Services and Environmental Health officials collect samples at the various designated sampling points in accordance with a Service Level Agreement between Scientific Services and City Health (Health Sub- Districts).

Scientific Services undertakes the analysis of the water samples in terms of a Service Level Agreement with the abovementioned funding line function.

The Environmental Resource Management Department assists with coastal management advice and is responsible for the compilation and implementation of Coastal Management Plans that are required in terms of the NEM: Integrated Coastal Management Act.

3. Recreational Water Quality Guidelines

From 2015, coastal water quality results will be assessed and measured against national guidelines set by the Department of Environmental Affairs (DEA) for safe recreational use. These are currently merely “guidelines” and have not been legislated. The DEA guidelines replace the Department of Water Affairs guidelines which have been in place since 1995. During 2014 the City will implement the monitoring and laboratory reporting protocols necessary for the transition between these two guidelines.

In terms of the new DEA guidelines, the “Sufficient/Fair” grade will be applied as the minimum requirement for determining acceptable water quality over the long term (90th percentile statistic to be calculated over a minimum consecutive period of 12 months).

GRADE	INTERPRETATION	INTESTINAL ENTEROCOCCI (counts per 100 ml)	<i>E. coli</i> (counts per 100 ml)
Excellent (2.9% GI illness risk)	ACCEPTABLE	≤ 100 (95 percentile)	≤ 250 (95 percentile)
Good	ACCEPTABLE	≤ 200	≤ 500

(5% GI illness risk)		(95 percentile)	(95 percentile)
Sufficient/Fair (8.5% GI illness risk)	ACCEPTABLE	≤ 185 (90 percentile)	≤ 500 (90 percentile)
Poor (>8.5% GI illness risk)	UNACCEPTABLE	> 185 (90 percentile)	> 500 (90 percentile)

Table 1: Microbial quality grades as stipulated in the RSA DEA interim guidelines for recreational waters of South Africa's COASTAL marine environment (RSA DEA 2011).

4. Monitoring Procedure

Water samples will be taken every second week at pre-determined locations on designated beaches (Annexure A) by trained personnel. Sampling procedure and equipment utilised follows protocols defined by the City's Scientific Services laboratory.

The water samples are tested by Scientific Services using standard accredited methods for the following indicator organisms:

- *Escherichia coli*
- Enterococci

The results are assessed by Scientific Services microbiological technical personnel who advise internal City role players regarding any public health concerns so that appropriate action can be taken (see section 5 below).

5. Procedure to be followed for non-compliant sample results

Investigation and resolution of pollution issues is to be undertaken co-operatively with affected line departments. Such investigations could include the following departments: Environmental Health; Stormwater and Sustainability; Sports and Recreation; Environmental Resource Management; and Water and Sanitation (Scientific Services, Reticulation, Water Pollution Control). Investigations will be led by Stormwater and Sustainability.

Media releases notifying the public about beach closures and other related information may be required in certain cases and these are to be issued by City Health. The Executive Director City Health authorises the relevant Health District Manager to make arrangements to prepare and disseminate such media releases.

6. Reporting

The City will disseminate Coastal Water Quality statistics for public information as part of the biennial State of the Environment Report.

Annexure A

The following is a list of Cape Town's beaches where water quality monitoring takes place:

Atlantic Coast

1. Silwerstroom tidal pool
2. Melkbosstrand
3. Blouberg Beach (big bay)
4. Blouberg Beach (small bay)
5. Tableview Beach
6. Milnerton Beach
7. Granger Bay Beach
8. Mouille Point Beach
9. Three Anchor Bay
10. Rocklands Beach
11. Milton Tidal Pool
12. Sunset Beach pool
13. Saunders Rocks Beach
14. Saunders Rocks Tidal Pool
15. Clifton 4th Beach
16. Clifton Maidens Cove
17. Maidens Cove Tidal Pool 1
18. Maidens Cove Tidal Pool 2
19. Camps Bay Beach
20. Camps Bay Pool
21. Horne Bay
22. Bakoven Bungalows
23. Oudekraal Resort
24. Llandudno Beach
25. Hout Bay Beach, East
26. Kommetjie, Long Beach
27. Kommetjie, the Kom
28. Scarborough Beach

False Bay

29. Millers Point
30. Fisherman's beach
31. Boulders beach
32. Seaforth beach
33. Long Beach Simons Town
34. Glencairn beach
35. Fish Hoek beach
36. Silvermine River Mouth
37. Kalk Bay Harbour beach
38. Kalk Bay tidal pool
39. Kalk Bay beach
40. Dalebrook Pool
41. St James Pool
42. Sandowne Hotel
43. Muizenberg Station
44. Muizenberg Pavilion
45. Sunrise Beach
46. Lifebox 21
47. Lifebox 23
48. Sonwabe
49. Ribbon Parking Area
50. Lifebox 30
51. Strandfontein Point
52. Strandfontein Pool
53. Lukannon Drive
54. Mnandi beach east
55. Mnandi beach west
56. Monwabisi tidal pool
57. Monwabisi Beach
58. Macassar Beach
59. Strand – Lourens River Mouth
60. Strand – Woltemade Street
61. Strand – Springbok Café
62. Strand – Pier
63. Strand – Harmony Resort
64. Gordons Bay – Sir Lowry's River
65. Gordon's Bay – van Riebeek Hotel
66. Gordon's Bay – Harbour
67. Gordon's Bay – Bikini Beach
68. Kogel Bay Beach