

Results of the Seasonal Kendall Test for water quality trends in the Port Shelter WCZ, 1986 – 2005

Monitoring Station		PM1	PM2	PM3	PM4	PM6	PM7	PM8	PM9	PM11
		1986	1986	1986	1986	1986	1986	1986	1986	1986
Monitoring Period		2005	2005	2005	2005	2005	2005	2005	2005	2005
Parameter	Water Depth									
Temperature (°C)	Surface	↗	↗	↗	↗	↗	↗	↗	↗	-
	Middle	↗	↗	↗	↗	↗	↗	↗	↗	-
	Bottom	↗	↗	↗	↗	↗	↗	↗	↗	-
	Average	↗	↗	↗	↗	↗	↗	↗	↗	-
Salinity	Surface	-	-	-	-	-	-	-	-	-
	Middle	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-	-	-	-	-	-
	Average	-	-	-	-	-	-	-	-	-
Dissolved Oxygen (mg/L)	Surface	↘	↘	↘	↘	↘	↘	↘	↘	↘
	Middle	-	-	-	-	-	-	-	-	-
	Bottom	↗	-	↗	-	-	-	-	-	-
	Average	-	-	-	-	-	-	-	-	-
Dissolved Oxygen (%)	Surface	↘	↘	↘	↘	↘	↘	↘	↘	↘
	Middle	-	-	-	-	-	-	-	-	-
	Bottom	↗	↗	↗	↗	↗	↗	↗	↗	-
	Average	-	-	-	-	-	-	-	-	-
pH	Surface	-	-	↘	-	↘	-	-	-	-
	Middle	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-	-	-	-	-	-
	Average	-	-	-	-	↘	-	-	-	-
Secchi disc depth (m)	↗	↗	-	-	↗	-	-	-	-	-
Turbidity (NTU)	Surface	↗	↗	↗	↗	↗	↗	↗	↗	↗
	Middle	↗	↗	↗	↗	↗	↗	↗	↗	↗
	Bottom	↗	↗	↗	↗	↗	↗	↗	↗	↗
	Average	↗	↗	↗	↗	↗	↗	↗	↗	↗
Suspended Solids (mg/L)	Surface	-	-	↘	-	↘	-	↘	-	-
	Middle	↘	-	↘	-	↘	-	↘	-	-
	Bottom	-	-	-	-	-	↗	↗	-	-
	Average	-	-	↘	-	↘	-	↘	-	-
Total volatile solids (mg/L)	Surface	-	-	-	-	↘	-	-	-	-
	Middle	-	-	-	↘	↘	-	-	-	-
	Bottom	-	↘	-	-	↘	-	-	-	-
	Average	↘	↘	↘	↘	↘	↘	↘	↘	↘
5-day Biochemical Oxygen Demand (mg/L)	Surface	-	↘	-	-	↘	-	-	-	-
	Middle	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-	-	-	-	-	-
	Average	-	-	-	-	↘	-	-	-	-
Ammonia nitrogen (mg/L)	Surface	-	-	-	-	-	-	-	-	-
	Middle	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-	-	-	-	-	↘
	Average	-	-	-	-	-	-	-	-	↘
Nitrite nitrogen (mg/L)	Surface	-	-	-	-	-	-	-	-	-
	Middle	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-	-	-	-	-	-
	Average	-	-	-	-	-	-	-	-	-
Nitrate nitrogen (mg/L)	Surface	-	-	-	-	-	-	-	-	-
	Middle	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-	-	-	-	-	-
	Average	-	-	-	-	-	-	-	-	-
Total inorganic nitrogen (mg/L)	Surface	-	-	-	-	-	-	-	-	-
	Middle	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-	-	-	-	-	-
	Average	-	-	-	-	↘	-	-	-	-
Total Kjeldahl nitrogen (mg/L)	Surface	↘	↘	↘	↘	↘	↘	↘	↘	↘
	Middle	↘	↘	↘	↘	↘	↘	↘	↘	↘
	Bottom	↘	↘	↘	↘	↘	↘	↘	↘	↘
	Average	↘	↘	↘	↘	↘	↘	↘	↘	↘
Total nitrogen (mg/L)	Surface	↘	↘	↘	↘	↘	↘	↘	↘	↘
	Middle	↘	↘	↘	↘	↘	↘	↘	↘	↘
	Bottom	↘	↘	↘	↘	↘	↘	↘	↘	↘
	Average	↘	↘	↘	↘	↘	↘	↘	↘	↘
Orthophosphate phosphorus (mg/L)	Surface	-	-	-	-	-	-	-	-	↘
	Middle	-	-	-	-	-	-	-	-	↘
	Bottom	-	-	-	-	-	-	-	-	↘
	Average	-	-	-	-	-	-	-	-	↘
Total phosphorus (mg/L)	Surface	↘	↘	↘	↘	↘	↘	↘	↘	↘
	Middle	↘	↘	↘	↘	↘	↘	↘	↘	↘
	Bottom	↘	↘	↘	↘	↘	↘	↘	↘	↘
	Average	↘	↘	↘	↘	↘	↘	↘	↘	↘
Silica (mg/L)	Surface	-	-	-	-	-	-	-	-	-
	Middle	↘	-	-	-	-	-	-	-	-
	Bottom	↘	-	-	-	-	-	-	-	-
	Average	↘	-	-	↘	-	-	-	-	-
Chlorophyll-a (µg/L)	Surface	-	-	-	-	-	-	-	-	-
	Middle	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-	-	-	-	-	-
	Average	-	-	-	-	-	-	-	-	-
<i>E. coli</i> (cfu/100mL)	Surface	-	↘	-	-	↘	-	-	-	-
	Middle	-	-	-	-	-	-	-	-	-
	Bottom	-	↘	-	-	-	-	-	-	-
	Average	-	↘	-	-	↘	-	-	-	-
Faecal coliforms (cfu/100mL)	Surface	-	-	-	-	-	-	-	-	-
	Middle	-	-	↗	-	-	-	-	-	-
	Bottom	-	-	-	-	-	-	-	-	-
	Average	-	-	-	-	↘	-	-	-	-

Note: 1. Results of the Seasonal Kendall Test statistically significant at $p < 0.05$

2. - indicates no significant trend

3. Test applied to past 20 years' data from each station unless stated otherwise

4. ↗ significant increase

5. ↘ significant decrease