EC Dilution – for Estuarine Water Samples

When measuring salinity, some samples may exceed the limit of salinity the meter can measure – for an EC High meter this will be >20,000µS/cm. An '**Or'** will appear in the screen (over range). The sample will need to be diluted in order to get a reading.

Method:
Dilute the sample so that the meter can accurately record salinity. For estuarine water, a 1:5 dilution factor and a high range EC meter is recommended.

Example:

Dilution 1:5 (sample after dilution 50mL)
Original sample 10mL
Deionised water 40mL

Note: A 1:5 solution is 1 part sample water and 4 parts deionised water

Diluting the sample:

1. Measure 10mL of the sample into the 50mL specimen tube or measuring cylinder.
2. Add deionised (distilled) water to make up to 50mL.
3. Pour the diluted sample into a clean specimen tube and mix thoroughly by rotating the beaker.
4. Carry out the EC test using the EC meter as usual (see 3a).
5. Record the number displayed on screen.
6. Rinse the probes of the meter with deionised water.
7. Calculate the result by multiplying the no. on screen by 5 (dilution factor).
8. Convert the result from milliesiemens/cm to microsiemens/cm (for high range meter) by multiplying by 1000.

No. on Screen	Dilution Factor	milliesiemens/ cm	Convert to microsiemens/ cm	µS/cm
X	=		x 1000	

9. Record your result on the database in µS/cm.

NSW Waterwatch

ESTUARY SAMPLING RESULT SHEET

Name: _____ Date sampled: _____

Site Name: _____ Time sampled: _____

Last rainfall: ☐ within 24 hours ☐ 1-7 days ☐ > 7 days
Rainfall description: ☐ light ☐ medium ☐ heavy

Comments: (weather conditions, visible pollution, wildlife present, odour, algae etc.)

_____

_____

_____

Test	Units	Results	Results according to the ANZECC guidelines for Estuary sites *(tick the box)*	
Temperature	^{o}C		-	
pH	pH units		≤6.5	☐ POOR
			7-8.5	☐ HEALTHY
			≥ 9	☐ POOR
Electrical Conductivity* (Salinity)	µS/cm		< 1500 µS/cm	☐ FRESHWATER
			1510-4800 µS/cm	☐ BRACKISH
			> 4800-51,500 µS/cm	☐ ESTUARY
			> 51,500 µS/cm	☐ MARINE or ESTUARY (high tide)
Turbidity	NTU		≤ 10 NTU	☐ HEALTHY
			> 15 NTU	☐ MAY AFFECT ESTUARY HEALTH

Calculating readings in millisiemens/centimetre (mS/cm) –

If the result is given in mS/cm, then multiply your result by the dilution factor, then multiply by 1000, to return the result to measure in µS/cm.

No. on Screen	Dilution Factor	EC mS/cm	Convert to mS/cm (x1000)	* EC µS/cm
			x 1000	

This is the number you upload to the database for EC

Don't forget to upload your data to the NSW Waterwatch Atlas of Living Australia Database at http://root.ala.org.au/bdrs-core/nswww/home.htm