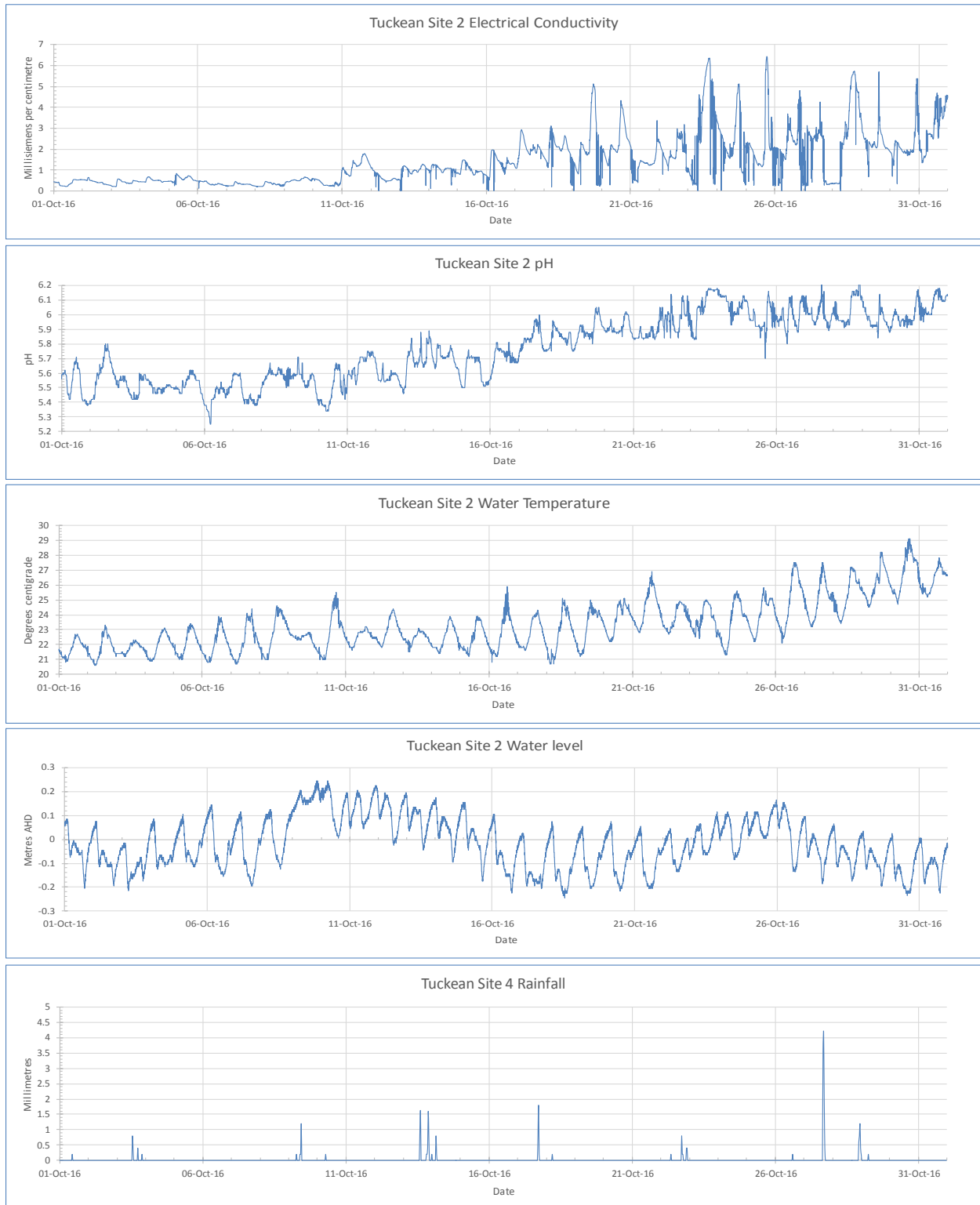


Tuckean site 2 water quality – October 2016

Data logger located upstream of Bagotville Barrage, Tuckean Swamp, NSW.



Interpretation

- **Electrical conductivity (EC)** is related to salinity with EC at site 2 ranging between 0.2 ms/cm and 6.2 millisiemens per centimetre (ms/cm) during October and averaging 1.41 ms/cm, which is considered fresh water and has increased from the September fresh water average of 0.23 ms/cm due to continuing dry weather and increased tidal exchange, however dropouts indicate unreliable data. Water is considered fresh if below 1.8 ms/cm, brackish from 1.8 – 4.8 and saline above 4.8 with seawater approximately 60 ms/cm.
- **pH** in October was recorded between 5.3 and 6.2 and averaged 5.8, which is 1.2 units higher or 16 times less acid than the September average of 4.6 due to reduced rainfall and runoff from the swamp and increased tidal exchange. On the pH scale neutral is at pH 7 and for every consecutive whole number below 7, acidity increases by ten times on a logarithmic scale. pH is affected by surface and groundwater level, drainage, rainfall, runoff and tidal exchange.
- **Water temperature** for October ranged between 20.6°C and 29.0°C giving a range of 8.4°C and averaging 23.3°C, which is 1.9°C higher than the September average of 21.4°C due to seasonal change. Water temperature peaks in the afternoon around 4.30 pm as air temperature and solar radiation decreases. Temperature variations can be caused by a combination of factors, including solar radiation, air temperature, tidal exchange, day /night, shade, turbidity and rainfall.
- **Water level** was recorded between -0.25 and +0.25 m AHD for October giving a range of 0.50 m and averaging +0.02 m AHD, which is equal to the September average of +0.02 m AHD and 0.07 m lower than the site 1 October average of +0.09m. Water height at site 2 fluctuates with tides, degree of sluice gate opening, rainfall in the catchment and to a lesser extent temperature, wind and barometric pressure.
- **Rainfall** recorded during October at the site 4 data logger situated 4 km to the north was 30.0 mm over 13 days, which compares to the September reading of 24.3 mm over 11 days. Peak daily rainfall of 4.2 mm was recorded between 4:00 pm and 4:30 pm on the 27th October. During October, the Rocky Mouth Creek data logger located 19 km to the SSW recorded 38.8 mm over 12 days, while the Ballina AWS located 19 km to the NE recorded 11.4 mm over 9 days.