**Abstract Title:**

Record breaking Bluegreen Algae Event for Richmond River, Casino, January – March 2019

**Abstract:**

Casino is located in the Northern Rivers NSW approximately 150km south of the Gold Coast. During Summer 2019 Casino was subjected to record extended periods of extreme high temperatures. All but 1.0mm of rain was received during the entire month of January significantly reducing the flow of the Richmond River, which is used to supply the township of Casino’s drinking water. The river also has several private water extraction licences for surrounding farms. A preliminary assessment Friday 18 January 2019 of the Richmond River that showed early signs of algae growth through odour and visual assessment (small algae particles floating in water and a distinctive earthy, algae scent). Temperatures were high throughout January 2019 and over the following weekend temperatures hit maximums of 41.5°C on 19 January 2019 and 34.7°C on 20January 2019. Optimum variables gave life to an extensive algae bloom covering an approx. 4km stretch of the Richmond River, Casino towards Kyogle (located to the west of Casino). Toonumbar Dam, located in Kyogle Shire, releases water into the Richmond River. The rivers flow fell well below the Jabour Weir even with the efforts of daily releases from upstream Toonumbar Dam, which were suffering algae events of their own at the time. This led to water restrictions for the Casino township impacting on local businesses and residents. Restrictions reached Level 3, 5 being the most restrictive, highlighting the severity of the local water crisis. The Richmond River which is used for recreational and drinking water, turned shades of fluorescent and deep green throughout the three-month blue-green algae event duration. Public access areas to the river were closed and extensive cell count and toxin sampling took place within the waterbody itself and drinking water reservoirs. Sample results showed the presence of cyanobacteria species *Cylindrospermopsis raciborskii* and *Dolichospermum circinale.* Drone footage shows the prominent green discolouration of the approx. 4km stretch of river and the harshly dry surrounding land. Collaboration with the Richmond Valley Councils Casino Water Treatment Plant operators and Environmental Health section, Water NSW, NSW Health, the local Richmond Water Laboratories and Forensic and Scientific Services Laboratory (FSS Labs) was undertaken in efforts to monitor and ensure public health and safety. To ensure the safety of the drinking water, the operators at the Water Treatment Plant ran a powdered activated carbon filter prior to the water being treated with flocculants and chlorine. There were several complaints regarding the discolouration and odour/taste of the water during this event with many reporting the water tasted like dirt or metallic. The event was finally eased with approximately 80mm rainfall event which occurred in March and proceeding smaller rainfalls to flush the river.

**Contact Details**

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**Biography:**

Abbey Eggins is a trainee Environmental Health Officer based on Richmond Valley Council (RVC). She is currently in her third year of training and studies of a Bachelor Natural Science (Environment & Health) at Western Sydney University. She has recently been involved in the sampling and monitoring of the Richmond River, Casino NSW the duration of its 3-month blue-green algae event. Abbey has a joint scholarship with the RVC and NSW Health under the Aboriginal Environmental Health Officer Training Program initiated by the NSW Health Aboriginal Environmental Health Unit.

**Presentation:**

Available to present in any format.