



JULY 2022 MONITORING DATA

Notes on Monitoring Data

Environment Protection Licence: 11781

Date Published: 8th August 2022

Date Sampled: 1st, 3rd, 4th, 5th, 6th, 10th, 13th, 14th July 2022

Date Sample Results Released: 25th July 2022

In relation to the monitoring data, IPL notes:

- The automatic sampler only triggers when a specified volume of rainfall has occurred. Sampling is currently initiated when the following two conditions are met:
 - A minimum 2 mm rainfall depth is measured in the preceding 60-minute period by the tipping bucket rain gauge; and
 - Stormwater flow over is detected by the flow sensor installed inside the drainage line.
 - Provided these conditions continue to be met, stormwater is sampled from the monitoring pit every 15 minutes and stored in sample bottles housed in a carousel within the auto sampler unit.
- Prior to analysis of collected stormwater samples “composite stormwater samples” are produced. Composite sampling consists of a collection of numerous individual discrete samples collected in a common container over a sampling period. Composite samples are collected from the discharge point and sent for analysis. The current sampling period is ‘per rainfall event’. This is defined as a continuous period where the flow and rainfall conditions are continued to be met and the time between sample collection is 15 minutes.
- EPA Licence 11781 sets no specific pollutant limit on the site’s water discharges.
- IPL Newcastle has recently concluded the improvement works conducted within the Northern Drain network. These works included the diversion of clean roof water and the re-lining of all existing stormwater pipes. All stormwater flow is now diverted to the Central drain.

JULY 2022 MONITORING DATA

Central Drain Storm Water Drainage Analysis (EPL 7)

| Pollutant | Units of Measure | Monitoring Frequency Required | No of Samples Analysed in month | Min. Value | Mean Value | Median Value | Max. Value |
|---|------------------|-------------------------------|---------------------------------|------------|------------|--------------|------------|
| pH | pH Unit | Monthly during discharge | 13 | 6.60 | 6.96 | 6.94 | 7.32 |
| Total Suspended Solids | mg/L | Monthly during discharge | 13 | 6.0 | 41.4 | 20.0 | 229.0 |
| Sulfur as S | mg/L | Monthly during discharge | 13 | 30.0 | 246.2 | 160.0 | 730.0 |
| Sulfate as SO ₄ | mg/L | Monthly during discharge | 13 | 28.0 | 225.3 | 132.0 | 734.0 |
| Total Zinc | mg/L | Monthly during discharge | 13 | 0.151 | 0.397 | 0.377 | 1.120 |
| Ammonia as N | mg/L | Monthly during discharge | 13 | 4.5 | 36.3 | 35.6 | 97.4 |
| Nitrite as N | mg/L | Monthly during discharge | 13 | 0.050 | 0.278 | 0.250 | 0.580 |
| Nitrate as N | mg/L | Monthly during discharge | 13 | 0.99 | 7.03 | 1.97 | 35.30 |
| Nitrite and Nitrate as N | mg/L | Monthly during discharge | 13 | 1.1 | 7.3 | 2.2 | 35.8 |
| Total Kjeldahl Nitrogen as N | mg/L | Monthly during discharge | 13 | 7.8 | 63.8 | 37.2 | 164.0 |
| Total Nitrogen as N | mg/L | Monthly during discharge | 13 | 8.9 | 71.1 | 48.9 | 169.0 |
| Phosphorus (Total) as P | mg/L | Monthly during discharge | 13 | 4.1 | 13.8 | 13.8 | 28.2 |
| Phosphorus (Reactive) as P | mg/L | Monthly during discharge | 13 | 2.7 | 11.1 | 12.5 | 23.4 |
| Phosphate (Calculation from Total Phosphorus) | mg/L | Monthly during discharge | 13 | 12.5 | 42.2 | 42.4 | 86.5 |

Not detected values defined as half the detection limit for the purpose of calculating the mean and median

Rainfall & Flow Data

Each drain has a rain gauge and flow sensor. The rain gauge and flow sensor transmit the rain and flow information to a controller which then initiates the automatic sampler to take a sample in accordance with the site's EPL licence (EPL 11781).

Flow rate information is recorded on a continual basis via flow sensors located inside the discharge drain. A magnetic flow sensor has recently been installed to measure the flow at the Central drain.

Figure 1 summarises the rainfall for July 2022: it is noted that the data is sourced from Nobby's BOM station due to a memory issue with the site's rain gauge.



JULY 2022 MONITORING DATA

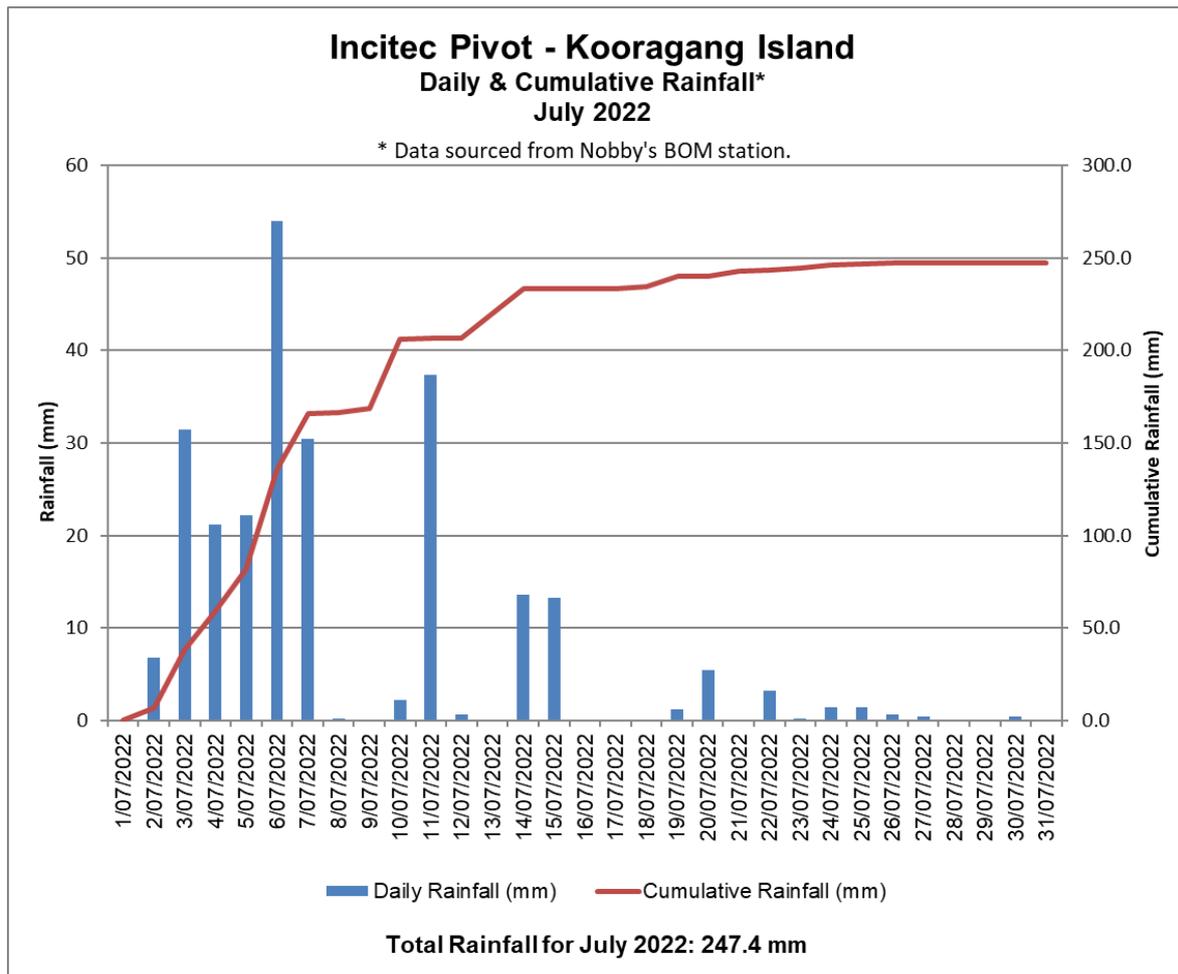


Figure 1 July 2022 Rainfall Summary