

Incident report

Legacy Way

Discharge from water treatment plant with dissolved oxygen levels– Thursday 16th August 2018



Dissolved oxygen level for Water Treatment Plant discharge

1.1 Purpose

This incident report is submitted in accordance with Coordinator-General's Change Report No 8 Appendix 1, Schedule 3, Part 3, condition 32(c)(IV) for the Northern Link Road Tunnel Project (now the Legacy Way Toll Road).

This incident report is further to the notification of the event made by Transurban Queensland (TQ) to the DES Pollution Hotline email address on Friday 17 August 2018 (Customer Reference Number CR84992) regarding dissolved oxygen readings recorded at the Legacy Way water treatment plant.

1.2 Name of the operator

The operator of the activity is Queensland Motorway Services Pty Ltd (also referred to herein as, 'TQ').

The person responsible for the activity is Phillip Deschamps.

1.3 Designated contact person

Vicki Hoskins, Assets Commercial Manager.

Office phone – 3182 2587

Mobile – 0409 541 418

1.4 Location of the release

The event was recorded at the Legacy Way Water Treatment Plant located adjacent to the western portal of the Legacy Way tunnel. The release occurred from the Legacy Way water treatment plant into the Dean Street culvert of the stormwater drainage system (under authority from the Brisbane City Council), and eventually into the Brisbane River via the Patrick Lane culvert.

1.5 Date and time of the release

The event was identified on or around 11:30am on Thursday 16 August 2018.

1.6 Time the operator became aware of the release

TQ became aware of the dissolved oxygen reading on or around 10:30am on Thursday 16 August 2018. This reading was made as part of independent sampling by SAS Laboratories during their regular weekly monitoring event.

1.7 Monitoring results

On or around 10:30am on Thursday 16 August 2018, monitoring of the discharge water from the Legacy Way water treatment plant recorded a dissolved oxygen value of 100.7% saturation.

In response, at 2:31pm on Thursday 16 August 2018 a reading of dissolved oxygen levels in the Brisbane River was taken at the culvert where the stormwater system discharges into the Brisbane River. This reading recorded a dissolved oxygen level of 92.5% saturation. At this time, the tide was at the top of the culvert outlet and the discharge water from the Legacy Way water treatment plant would have been mixing with water from the Brisbane River. This recorded dissolved oxygen level is within the dissolved oxygen range (85-105%) of the water quality objective for the Brisbane River (mid-estuary), as set in the Queensland Environmental Protection (Water) Policy 2009.

1.8 Statement of corrective actions and mitigation measures

Upon identifying that the dissolved oxygen was at 100.7% saturation, immediate arrangements were made for the plant to cease discharging. Ongoing groundwater seepage flows were contained during this time in the under-road sumps. This corrective action ensured no further discharge of water with an elevated dissolved oxygen level occurred.

Initial investigations identified the cause of the elevated dissolved oxygen was that the in-line sensor for the treatment plant was reading in the order of 89% saturation at the time, causing the control logic for the treatment plant to continue running the aerator. The treatment plant logic is programmed to turn off the aerator once dissolved oxygen levels reach 90% saturation.

The treatment plant's in-line dissolved oxygen sensor was replaced and recalibrated. The SAS Laboratories dissolved oxygen probe was used to confirm that the replacement in-line probe was providing stable and accurate results (within an acceptable range of variation (<3%) between the two sensors), and that these were being received correctly by the plant's control system.

At approximately 5:15pm on Friday 18 August, the plant was returned to operation, and monitored to ensure the required dissolved oxygen levels were maintained. During the operation of the plant over the next two days (Saturday 18 August 2018 and Sunday 19 August 2018), the SAS Laboratories dissolved oxygen probe will be used twice during each shift (four times every 24hrs) to ensure that the in-line probe continues to provide accurate values to the control system for the plant. In the event that there should be a deviation between the two probes, instructions have been given that the plant is to be shut down until further investigation can occur.

For further details, please contact:

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