Legacy Way in-tunnel air quality

Monthly trend report – November 2019

The table below sets out the in-tunnel air quality criteria for the Legacy Way tunnel as set out in the Environmental Authority (EPPR02587314).

Table 1: In-tunnel air quality criteria

Parameter	Criteria
Carbon monoxide (CO)	70 ppm generally 90 ppm in peak traffic congestion
Nitrogen dioxide (NO_2)	1 ppm (average)
Visibility coefficient (K)	0.005 m^{-1} for free flowing traffic (greater than 50km/hr) 0.007 m^{-1} otherwise

Notes:

1. Monitoring and measuring protocols for each criteria as set out in the PIARC guidelines, as current December 2012.
2. Tunnel sensor average concentrations reported for Carbon Monoxide and Nitrogen Dioxide.
3. Peak traffic congestion occurs when traffic flows are less than 10 km/h.
4. Visibility coefficient (K-value) may fluctuate with peak conditions.

Visibility

Figure 1: In-tunnel visibility extinction coefficient – Eastbound (15 minute averaged data)

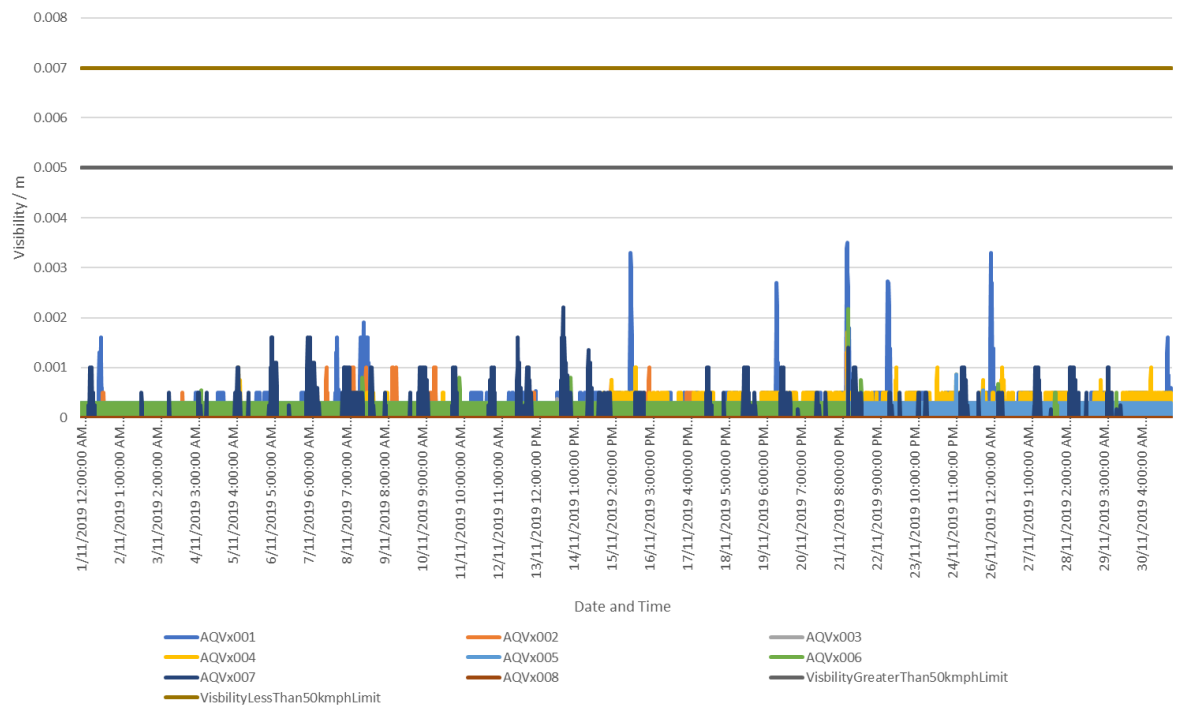
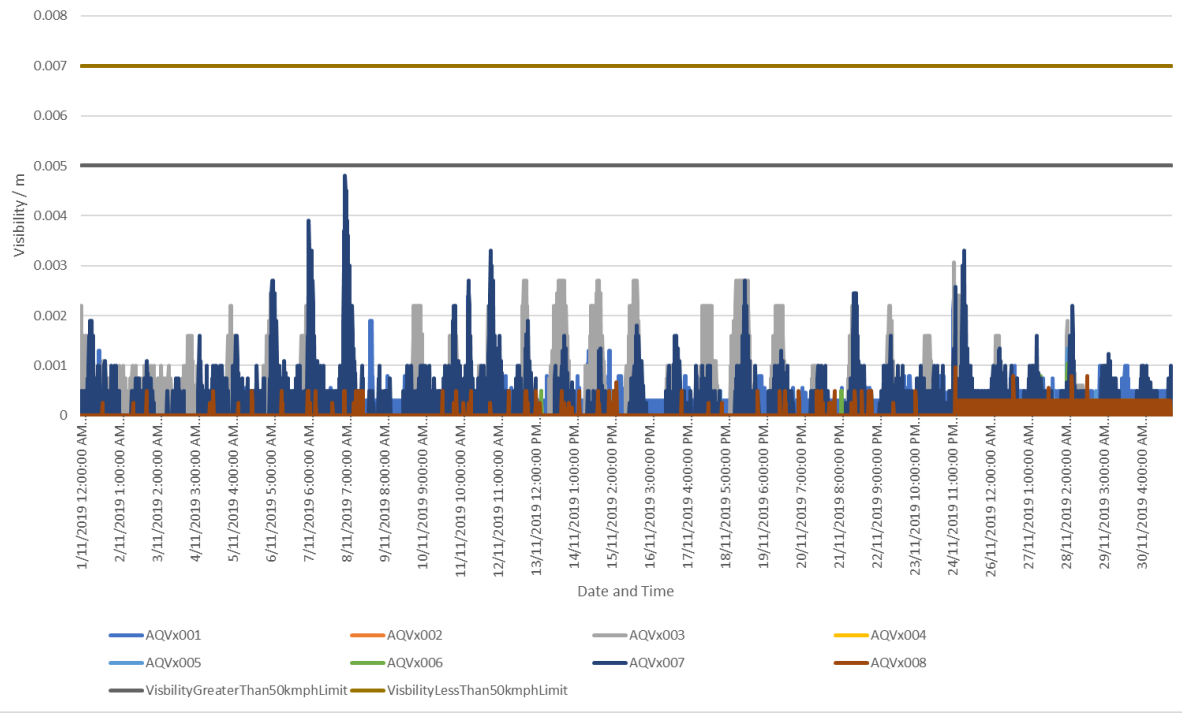


Figure 2: In-tunnel visibility extinction coefficient – Westbound (15 minute averaged data)



Carbon monoxide

Figure 3: In-tunnel carbon monoxide (CO) concentrations – Eastbound (15 minute averaged data)

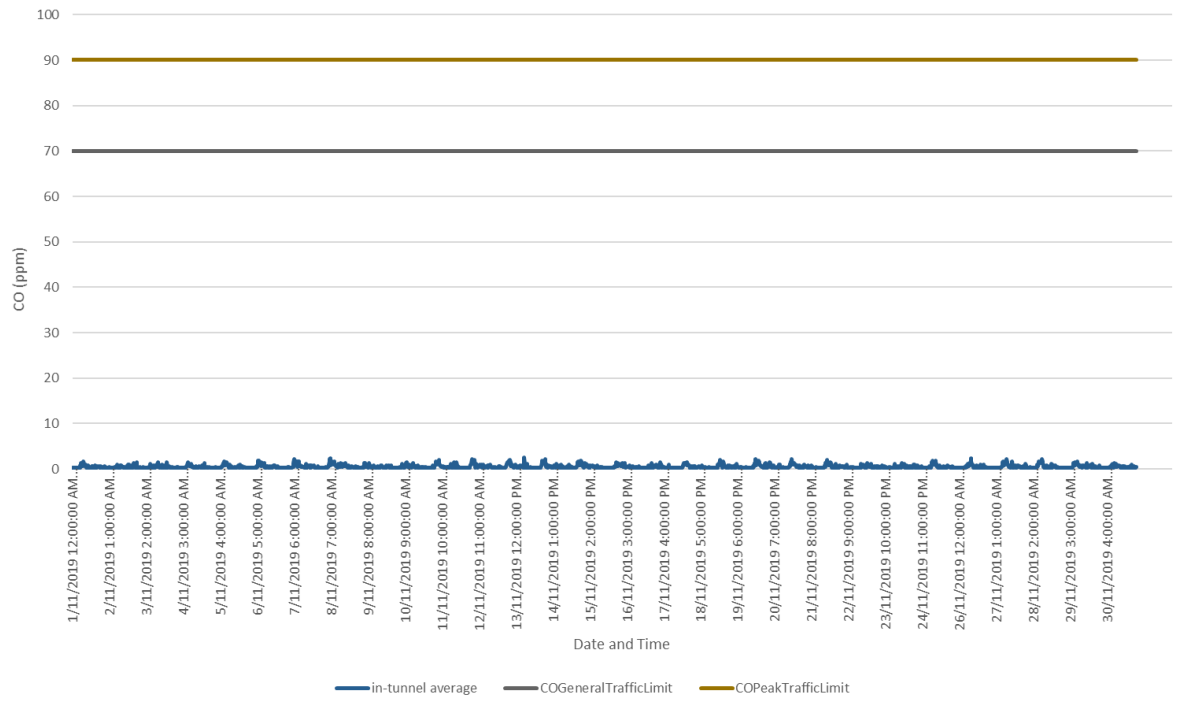
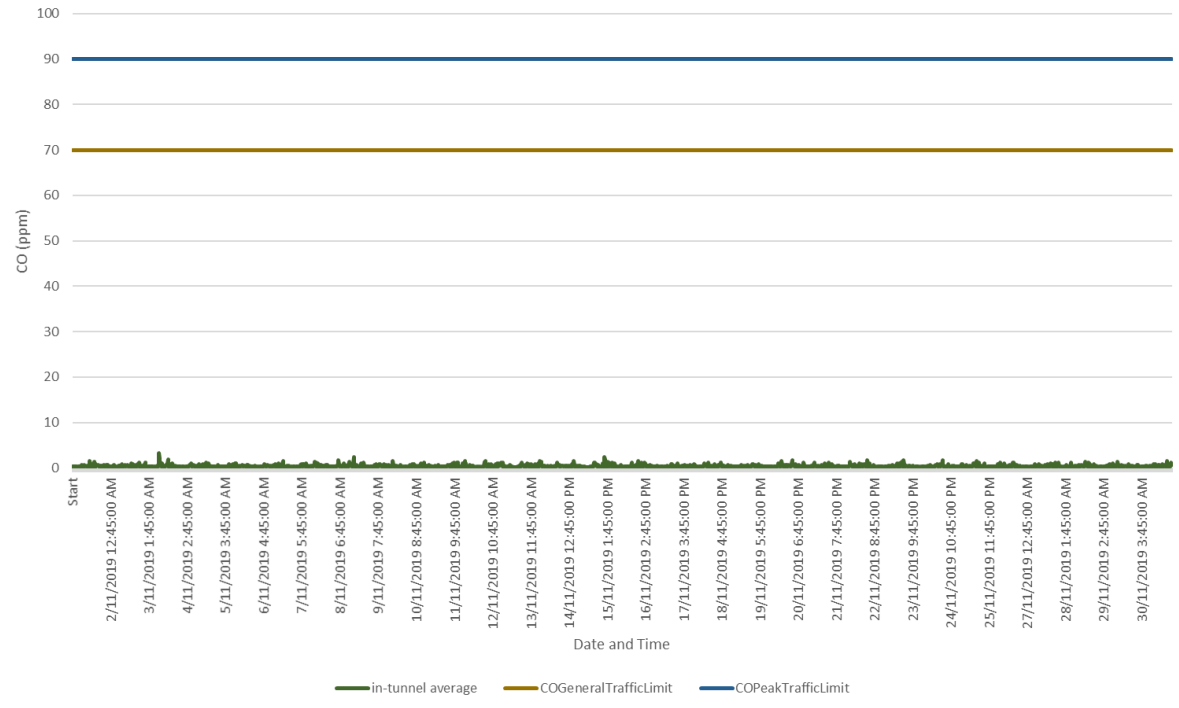
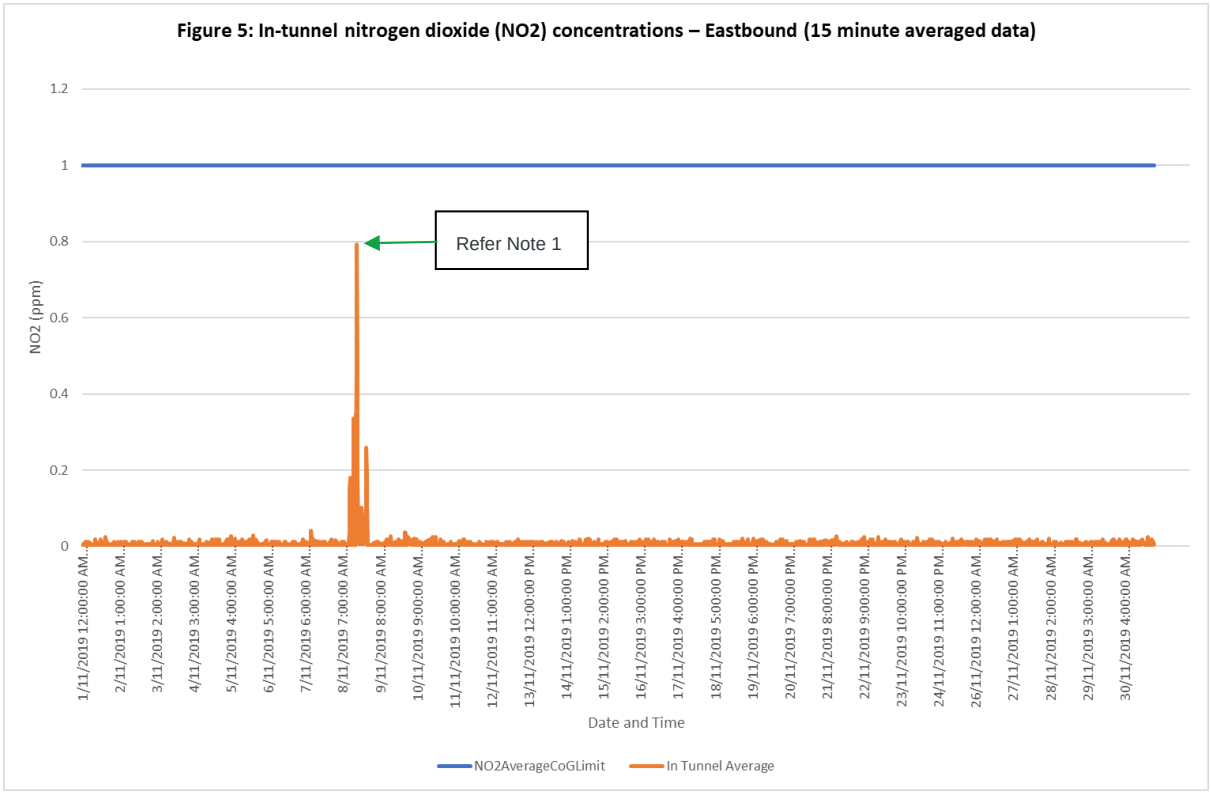


Figure 4: In-tunnel carbon monoxide (CO) concentrations – Westbound (15 minute averaged data)



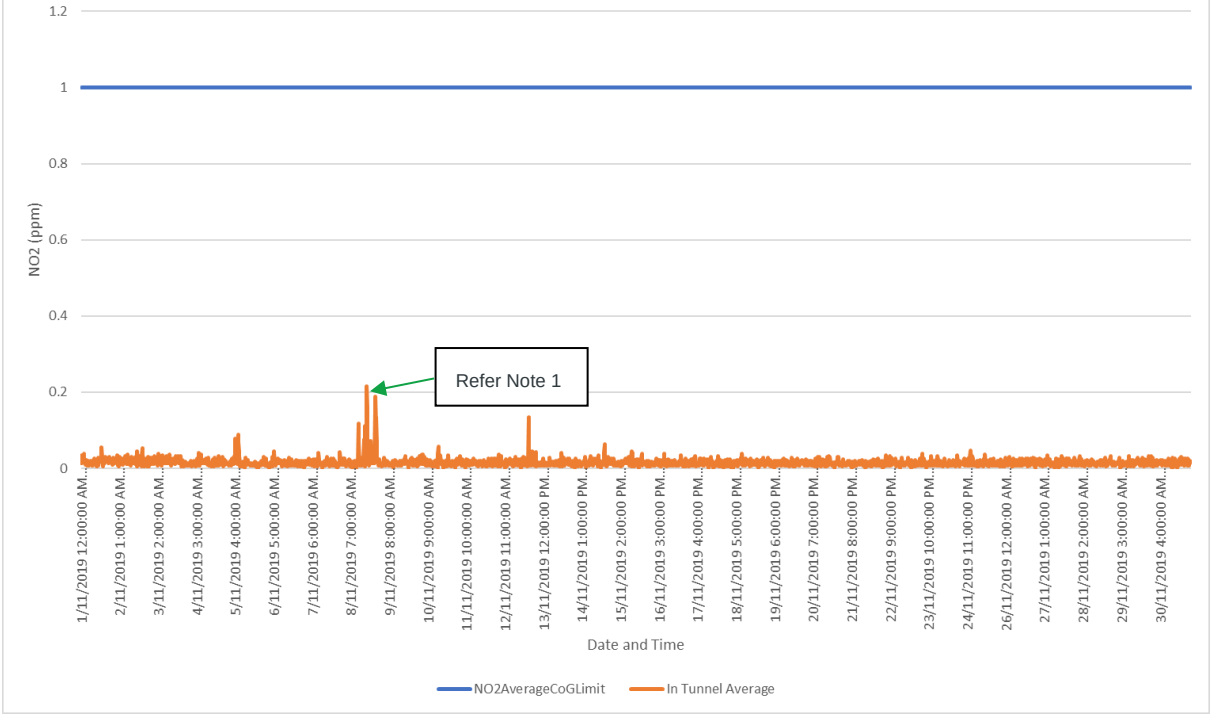
Nitrogen dioxide

Figure 5: In-tunnel nitrogen dioxide (NO2) concentrations – Eastbound (15 minute averaged data)



Note 1: Elevated nitrogen dioxide reading was recorded for AQNx001 and AQNx006 at approximately 16:15-17:00 period. Tunnel CCTV scan showed no obvious vehicles inside tunnel however a truck was observed exiting very slowly on westbound side and blowing large volumes exhaust fumes/smoke from the exhaust. Ventilation was increased and as the fumes pushed down the tunnel several other elevated recordings occurred before concentrations decreased.

Figure 6: In-tunnel nitrogen dioxide (NO2) concentrations – Westbound (15 minute averaged data)



Note 1: Elevated nitrogen dioxide reading was recorded at AQNx008 at approximately 16:15-17:15. Refer to Figure 5 notes for further details.