



**Quarterly Monitoring REPORT**  
**August - November 2022**

FOR

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**M12 Motorway Central Package**

**Contract No: 20.0000303606.2284**

**Transport for New South Wales**

**TfNSW Client Report**

Reviewed and Approved  
Environment and Sustainability Manager  
Tom Bath

Monthly Progress Report – August 2022  
M12 Motorway – Central Package

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### EDITION / REVISION REGISTER – QUARTERLY PROGRESS REPORT

The following revision register provides details on all versions of this Quarterly Progress Report.

Rev	Rev Date	Rev Details	Approved by
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## 1. ENVIRONMENTAL MONITORING

### 1.1. Overview

This Quarterly Construction Monitoring Report has been prepared to report on the results of Environmental monitoring that has been undertaken to validate the impacts predicted for the M12 Central package, measure the effectiveness of environmental controls and to address approval requirements. The monitoring requirements are included in the relevant issue-specific environmental management plans and summarised in Table 1-1 below.

Table 1-1

NSW CoA and REMM	Description	Relevant plan	Reporting requirements
CoA A16(e)	Program for monitoring the performance outcomes, including a program for noise monitoring consistent with the requirements of NSW CoA C14	Site Establishment Management Plan	See Section 2.5 and Appendix A4
CoA C11(a)	Noise and vibration monitoring	Construction Noise and Vibration Monitoring Program	See Appendix B of Appendix B2
CoA C11(b) SWH05	Surface water monitoring program	Construction Soil and Water Monitoring Program	See Appendix C of Appendix B4
CoA C11(c)	Groundwater monitoring program	Construction Soil and Water Monitoring Program	See Appendix C of Appendix B4

### 1.2. Weather and Rainfall

An Automatic Weather Station (AWS) was established at the Site Compound on Clifton Avenue (AF4) on 06/08/2022. The site received lower than average rainfall during August with September, October and November generating higher than average rainfall. The results of monthly weather monitoring are summarised below:

#### 1.2.1. August

Minimum Temperature: 1.2°C

Maximum Temperature: 24.4°C

Total Rainfall: 19.2 mm

Maximum 24-hour rain: 0.6 mm to 9am on 24/08/22

Maximum wind gust: 47.3 km/h on 24/08/22.

#### 1.2.2. September

Minimum Temperature: 3.3 °C

Maximum Temperature: 24.1°C

Total Rainfall: 94.6 mm

Maximum 24-hour rain: 21.4 mm to 9am on 16/09/22

Maximum wind gust: 49.7 km/h on 30/09/22.

### **1.2.3. October**

Minimum Temperature: 6.0°C

Maximum Temperature: 24.1°C

Total Rainfall: 187.2 mm

Maximum 24-hour rain: 51.2 mm to 9am on 09/10/22

Maximum wind gust: 48.5 km/h on 01/10/22.

### **1.2.4. November**

A high intensity rainfall event of 40.8mm was experienced on 14/11. Post-rainfall inspections indicated that no basin overtopping had occurred.

Minimum Temperature: 3.3 °C

Maximum Temperature: 6.1 °C

Total Rainfall: 69 mm

Maximum 24-hour rain: 40.8 mm to 9am on 14/11/22

Maximum wind gust: 62.7 km/h on 22/11/22.

## **1.3. Noise and Vibration**

Works outside of standard construction hours (OOH) have been undertaken for gate construction, utility relocation/ installation and oversize deliveries. OOH activities are undertaken in accordance with the conditions of EPL 21596

### **1.3.1. Noise and Vibration – complaints.**

There have been no complaints related to noise or vibration during the reporting period.

### 1.3.2. Noise and Vibration - Results

Date	OOHW Permit no.	Description of works	Stage and location of works	Time	NCA/NML	Modelled Value	Background	LAeq	Comments
28/08/22	1	Gate construction	Site establishment - construction of gate access on Elizabeth Drive	0:15	NCA 04 Night NML: 42 dB(A)	61 dB(A)	Night RBL: 38 dB(A)	60.2	Predominant noise is traffic on Elizabeth Drive.
29/11/22	2	Dechlorination and Flushing of Sydney Water main.	Construction - Clifton Avenue	8:00	NCA 07 Day NML: 39dB(A)	39dB(A)+	Day RBL: 34 dB(A)	50.6	No noise generating works (lfushing only) - predominant noise from passing airplanes/helicopters.
08/12/22	3	Telstra Conduit installation - saw cutting	Construction - Cnr Mamre Road and Elizabeth Drive	21:15	NCA 04 Evening NML: 53 dB(A)	51 dB(A)	Evening RBL: 49 dB(A)	67.4	Ambient noise 52dB(A). Predominant noise source from public vehicles. No fluctuation in levels observed when works commenced.
14/12/22	4	750t Crawler Crane assembly	Construction - Bridge 7 piling pad, Clifton Avenue	5:00	NCA07 Night NML: 36	31 dB(A)	Night RBL: 36 dB(A)	52.1	Prior to commencement of the activity, background levels were recorded as 48-50dB(A). Background noise from Mamre Road. No discernible increase in noise levels observed during the activity.

## 1.4. Soil and Water

Construction surface water was used primarily on site for dust suppression or irrigation to ground within the site during the month.

### 1.4.1. Soil and Water – Surface Water

Surface water sites across the Project area have been sampled by the TfNSW appointed consultant on a monthly basis since April 2019 to establish baseline conditions for the receiving waters in the vicinity of the M12 Central Package. The sites were selected on the basis of having persistent water flow and at locations upstream and downstream of receiving waterways that might be impacted by the construction activities. Refer Section **Error! Reference source not found.** for further description of the surface water monitoring sites.

Ongoing monitoring of the sites will be carried out by the TfNSW appointed consultant on a monthly basis during construction to detect any changes in water quality compared to baseline conditions that might be attributable to Project activities.

Data for the monitored parameters will be analysed by the TfNSW appointed consultant and presented in Overarching Construction Surface Water and Groundwater Monitoring Program Reports.

### 1.4.2. Wet Weather Sampling

In addition to routine sampling, wet weather sampling is being undertaken by the TfNSW appointed consultant during the pre-construction and early works construction phases in accordance with the Guideline for Construction Water Quality Monitoring (RTA 2004).

### 1.4.3. Groundwater

The Project groundwater monitoring sites that are to be monitored during construction are listed in Table 0-1 and their locations shown on **Error! Reference source not found.**

Groundwater boreholes BH145 will be monitored by TfNSW during construction whilst Seymour Whyte will monitor groundwater in Cut 9 during construction. No groundwater inflows have been observed at Cut 9 to date.

Table 0-1: Groundwater monitoring locations

Site ID*	Sampling type	Frequency	Responsibility
<b>Construction monitoring locations</b>			
BH145	Groundwater quality and level	Monthly	TfNSW
<b>M12 Central</b>			
Clifton Avenue (Cut 9)	Groundwater inflows and quality <sup>^</sup>	Monthly	Seymour Whyte

<sup>^</sup> If groundwater inflows are observed groundwater quality from the cut will be sampled.

## 1.5. Discharge Quality

Surface water discharge has been limited due to re-use of construction surface water for dust suppression on site.

A permit system is implemented to ensure all surface water discharges meet the water quality parameters outlined in EPL 21596.

Results of water quality monitoring for discharge events are as follows:

Permit no.	DATE	NTU	pH	Visible Oil/ Grease (Y/N)	Volume (L)	Location	Comments
25	28/10/22	16.5	8.35	None visible	3000000	West of South Creek SB21060W	Discharge sediment basin to achieve Blue Book capacity
28	02/11/22	33.2	8.06	None visible	100000	Basin at the 'Black Gate'	Basin discharge offsite via clean water diversion channel.
44	17/11/22	25.3	8.06	None visible	400000	Range Rd Sediment Basin	to offsite flow lines post-rainfall
45	17/11/22	28.5	7.27	None visible	2900	Sediment Basin 2 - East of South Creek	to return basin to Blue Book capacity following rainfall event
46	17/11/22	12.6	7.42	None visible	200000	range road west	needs to be drained out for next rain fall
54	29/11/22	5.5	7.49	None visible	1500	Sed Basin 10 adjacent to Elizabeth drive	To empty the basin before next rain event.

## 1.6. Air Quality

Dust mitigation and air quality has been a strong focus for the M12 Central package.

### 1.6.1. Air Quality Complaints

The site has received 2 complaints related to dust and 3 complaints relating to wet roads from dust suppression and street sweeper activity. SWC have responded to all complaints in a timely fashion, made improvements to controls to minimise or prevent dust/ tracking from occurring and increased monitoring to verify the effectiveness of the controls.

Results summary and analysis of the environmental monitoring

Review of monitoring data against relevant air quality criteria

Performance of this Monitoring Program

Summary of any complaints received that are related to air quality complaints.



## Dust Complaint Summary

Complaint Identification	Date received	Time received	Complaint Method	Location of complaint	Issue	Construction site/work complaint relates to	Response provided to stakeholder by community team
2	02/09/22	9:40am	Email in	Clifton Avenue	Sydney water contacted the resident and asked if he had any issues with their works and he mentioned that water cart is "making the road muddy and dirtying his truck and cars"	Dust suppression requirements	Advised that we will have cattle grids in place in the next 2 weeks with rocks placed before and after the grids to remove any soil/ dirt from our vehicles exiting our work sites. <i>Note: Cattle grid in place and street sweeper actively cleaning road</i>
4	27/09/22	1:29pm	Email in	Clifton Avenue	Requested that the dust caused by trucks on Clifton Avenue needs to be addressed, as they need to wash their cars and trucks every day from all the mud that is dragged onto the road. Also, advised that trucks are pulling out of driveways without looking and they have experienced many near misses.	Dust, mud and trucks pulling out of construction driveways without giving way	Email response provided back on 28/09/22 advising that the project takes containing dust and mud tracking seriously and is being managed by regularly having water trucks wet the road to suppress dust and truck sweepers to clean any mud off the road. Cattle grids have been installed at all work and compound entrances to help remove any dirt or mud off vehicles prior to entering the road. It was also noted that the property owner's driveway is holding a lot of water at the moment due to the recent rain fall and appears not to be draining. There are currently several construction projects being undertaken off Clifton Avenue with Fulton Hogan's driveway next door to the Seymour Whyte main compound at Clifton Avenue. With regards to workers pulling out of Seymour Whyte's main compound and work gates, there are numerous signs advising workers to 'Stop' prior to exiting driveways, as well as being advised during Induction Training to ensure they give way to motorists already on the road before pulling out. A reminder has been sent to all site workers as well. An email was sent to Fulton Hogan to alert them of the complaint on 28/09/22.

7	19/10/22	10.57am	Phone call received	Clifton Avenue	Advised that they are not happy that they need to wash their cars and truck and dog constantly due to the amount of mud on Clifton Avenue caused by the water truck wetting the road. Requested that the water truck stop wetting the road.	The resident was advised that it is a requirement under the project's EPL to use water trucks to suppress dust and truck sweepers to clean any mud off the road. Cattle grids have been installed at all work and compound entrances to help remove any dirt or mud off vehicles prior to entering the road. It was also mentioned that there has been a lot of rain and all resident's driveways and frontages are muddy and there are a number of projects also being undertaken off Clifton Avenue with Fulton Hogan's driveway next door to their property and Sydney Water works as well. The resident was offered the use of the Seymour Whyte's wash bay to use if they wanted. Which they accepted and advised that this would be a good solution for them to have a where they could wash down their truck.
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8	10/11/22	9.30am	Phone call received	490 Elizabeth Dr, Kemps Creek	Expressed concerns about the smell from earthworks drifting into the club and dust from stockpiles blowing into their club, and gaming areas will possible damage to gaming machines due to dust getting into electrical components.	Dust and smell	<p>After an initial conversation with the stakeholder over the phone, a follow-up email was sent on 11/11/22, advising that in accordance with the project's Conditions of Approval and Construction Site plans a nominated topsoil mound is currently being built to provide screening to the Bowling Club while the M12 Motorway is built. During construction of this temporary topsoil mound, a water cart has been deployed to provide dust suppression, until sufficient vegetation cover is achieved. SWC are reviewing the frequency and intensity of the water cart usage to ensure its effectiveness.</p> <p>Once the topsoil mound is built and shaped, SWC will apply spray grass (grass seed and polymer) to seal the topsoil mound to minimise the potential for dust and erosion. The area will also be used to store mulch, which may produce odour that cannot be easily masked with polymers or vegetative covering and anticipate that this will quickly reside and will be regularly checked and monitored for dust and odour. Should odour continue, SWC will investigate further treatments to neutralise odour.</p> <p>As a further screening measure, the shade cloth screening was extended on the existing fence line on the 10/11/22. SWC will undertake additional monitoring and inspections to verify the effectiveness of these controls.</p> <p>It was highlighted that there are heavy truck traffic movements along Elizabeth Drive to local tips and quarries including to the west end of Range Road to the Brandown Quarry, which is directly adjacent to the Bowling Club. Heavy truck traffic on Elizabeth Drive which has existing unsealed shoulders and accumulated debris on the roads and shoulders also contributes to the dust and odour issues in the area.</p> <p>SWC have requested a meeting with the stakeholder onsite to discuss their concerns further.</p>
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11	25/11/22	2.30pm	Phone call received	Clifton Avenue	Resident requested that the water carts are more regular with wetting the ground to stop the dust. As they are continually cleaning their back patio and his wife cannot put the clothes out on the clothes line.	Dust from earthworks	The resident was advised that Seymour Whyte will be deploying water carts immediately to the area to suppress the dust within the work area behind the resident's property. From Monday there will be two water carts on regular rotation wetting down the area as well. The project's environment team will also increase surveillance of the area as well.
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## 1.7. Air Quality Monitoring Results

### 1.7.1. Unattended Monitoring

PM 2.5	Averaging Time	Month	November-2022		
		Location	AF 5 (Unattended) HiQuality_ER0922002	AF4 (Unattended) Clifton Av._ER0922003	Irfan College (Unattended) DuffRoad_ER0922004
Criteria: 21.000ug	24 hours	Minimum	1.875	1.199	1.219
		Maximum	4.418	4.550	3.896
		Average	2.829	2.650	2.552
Criteria: 190.000ug	1 hour	Minimum	0.575	0.354	0.612
		Maximum	9.924	11.039	12.231
		Average	2.975	2.752	2.693

PM 10.0	Averaging Time	Month	November-2022		
		Location	AF 5 (Unattended) HiQuality_ER0922002	AF4 (Unattended) Clifton Av._ER0922003	Irfan College (Unattended) DuffRoad_ER0922004
Criteria: 21.000ug	24 hours	Minimum	7.675	5.292	5.171
		Maximum	20.408	17.154	17.656
		Average	13.576	9.750	9.952
Criteria: 190.000ug	1 hour	Minimum	2.627	1.495	1.917
		Maximum	88.974	58.431	60.246
		Average	13.900	10.056	10.319

### 1.7.2. Attended (Handheld) Monitoring

PM 2.5	Averaging Time	Month	November-2022						
		Date	05/12/22	05/12/22	05/12/22	05/12/22	05/12/22	05/12/22	05/12/22
Criteria = 0.190 mg/m3	15 minutes	Location	South Creek	Salisbury Av. (AF 13)	Kemps Creek	Elizabeth Dr (near AF5)	Range Rd (AF15)	Range Road	Water Tower Access Road
		Minimum	0.000	0.001	0.001	0.000	0.001	0.001	0.000
		Maximum	0.003	0.003	0.003	0.001	0.005	0.003	0.002
		Average	0.001	0.001	0.001	0.001	0.002	0.001	0.001

PM 10.0	Averaging Time	Month	November-2022						
		Date	05/12/22	05/12/22	05/12/22	05/12/22	05/12/22	05/12/22	05/12/22
Criteria = 0.190 mg/m3	15 minutes	Location	South Creek	Salisbury Av. (AF 13)	Kemps Creek	Elizabeth Dr (near AF5)	Range Rd (AF15)	Range Road	Water Tower Access Road
		Minimum	0.003	0.001	0.004	0.001	0.005	0.004	0.001
		Maximum	0.054	0.037	0.023	0.011	0.069	0.033	0.012
		Average	0.021	0.011	0.012	0.004	0.017	0.013	0.004