



ENVIRONMENT PROTECTION LICENCE NO: 21029

May 2019 Monthly Report

FOR

**Princes Highway Upgrade
between Berry and Bomaderry**

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1 INTRODUCTION

The Downer Seymour Whyte Joint Venture (DSWJV) is contracted by Roads and Maritime Services (Roads and Maritime) to upgrade 10.3 kilometres of the Princes Highway between Mullers Lane (south of Berry) and Cambewarra Road, Bomaderry in New South Wales (NSW) (the Project). The project will provide a four-lane divided highway (two lanes in each direction) with median separation.

The project is one of a series of upgrades to sections of the Princes Highway which aims to provide a four-lane divided highway between Waterfall and Jervis Bay Road, Falls Creek. This would improve road safety and traffic efficiency, including for freight, on the NSW South Coast.

Figure 1 provides an overview of the project location.

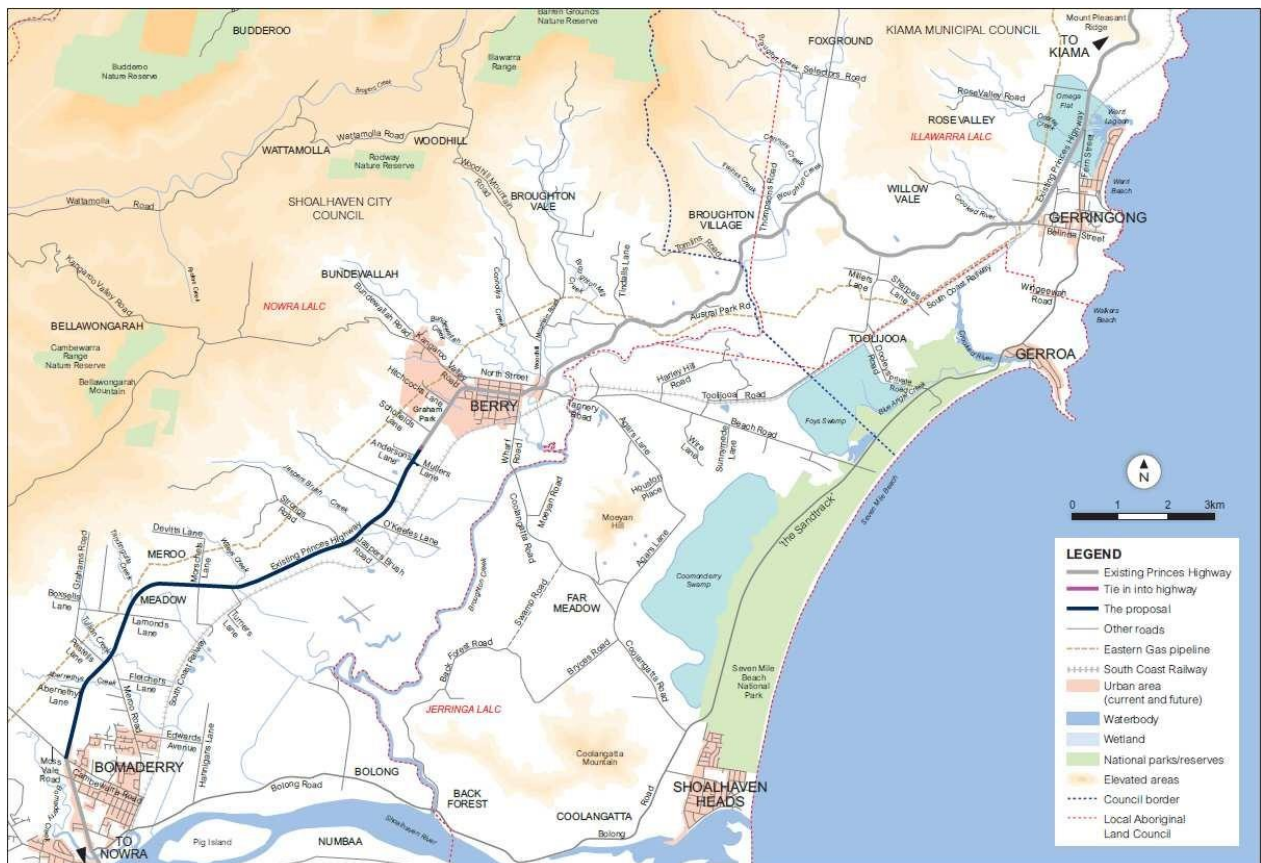


Figure 1-1 Project location

This report provides the results of monitoring undertaken during May 2019 as required by the project’s Environment Protection Licence (EPL 21029) Condition R4.1.

2 NON-COMPLIANCES

One non-compliance with air quality criteria was observed during the month. The rolling average for total insoluble matter at air quality monitoring site DDG-H was just above the annual criteria at 4g/m²/month. Refer to Section 5 of this report for further details.

3 RAINFALL AND WEATHER

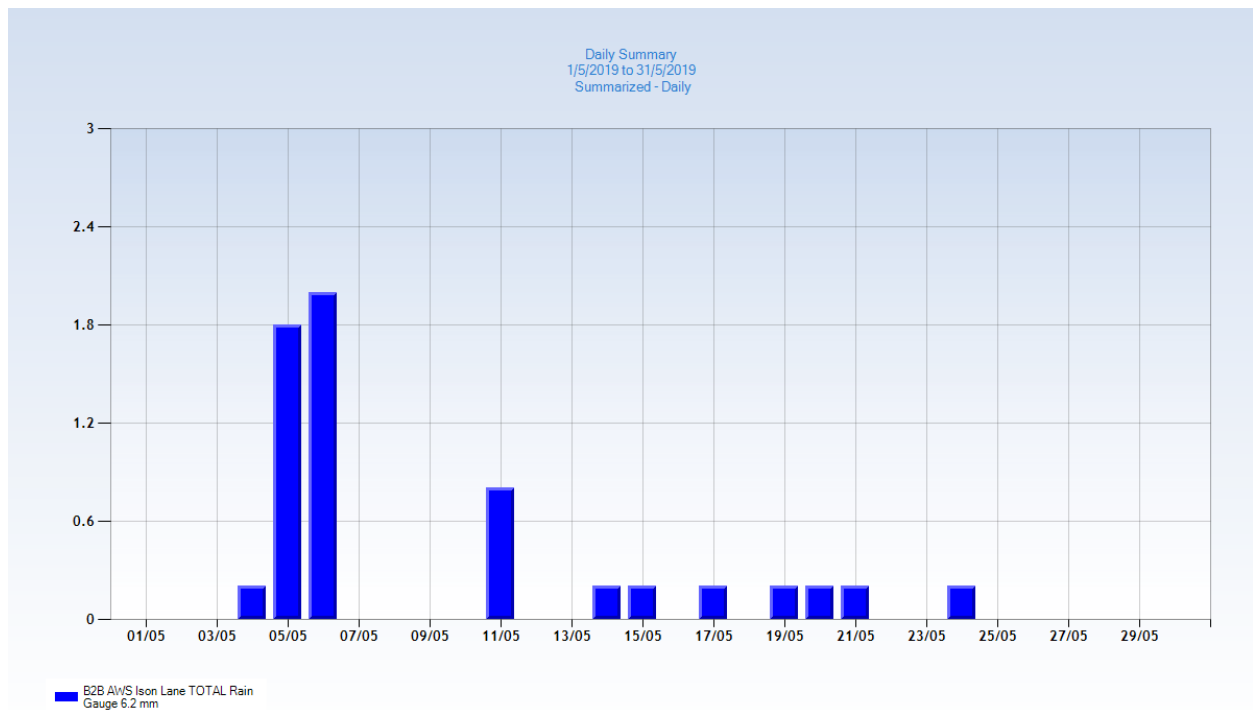
The RMS automatic weather station is situated at Ison Lane, Jaspers Brush, located adjacent to the project's main ancillary compound (Ison Lane Compound) for the project. The results of rainfall monitoring for May 2019 are provided in Figure 3-1 and Figure 3-2 below.

Figure 3-1 May 2019 Rainfall monitoring results

Location	Monthly rainfall recorded (mm)
Ison Lane, Jaspers Brush (RMS automatic weather station)	6.2mm

May 2019 was an exceptionally dry month with only 6.2mm of rainfall during the period. There were only two events when rainfall of greater than 1mm were recorded at the project specific weather station (Ison Lane, Jaspers Brush (RMS automatic weather station)). The largest rainfall event occurred on Sunday 5th of May when 2.0mm of rainfall was recorded.

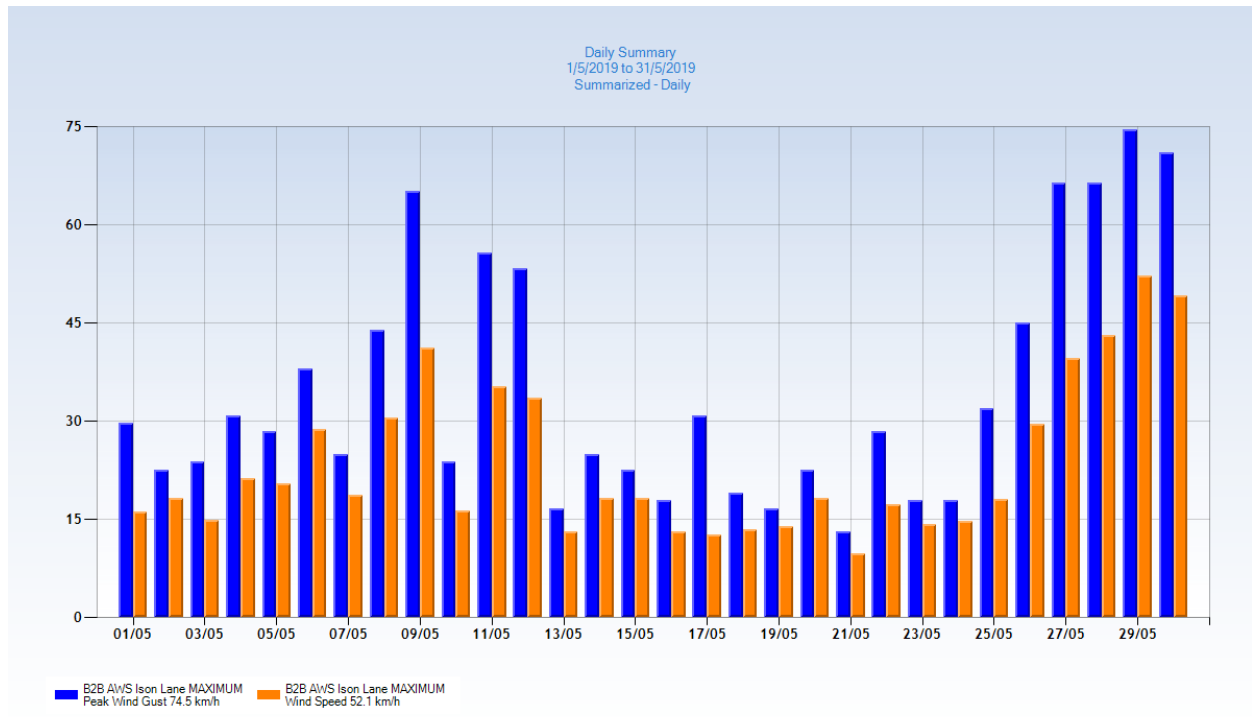
Figure 3-2 May Rainfall Results Ison Compound Weather Station



During May there were several days that recorded high winds across the project area and this was characterised by two high wind periods spanning several days each. During the first period from 9th-12th May wind gusts of greater than 50 km/h were recorded while in the second period from the 27th-30th of May wind gusts of greater than 65 km/h were recorded on each day.

The predominant wind for May was from the south-southwest. The highest wind gust recorded was 74.5 km/h and maximum wind speed was 52.1 km/h (refer Figure 3-3). DSWJV continue to monitor site activities, implement dust suppressant across site, utilise a fleet of water carts during working hours and limit dust generating activities on days of high wind.

Figure 3-3 May 2019 Wind Results Isons Compound Weather Station



4 SEDIMENT BASIN DISCHARGE

Eighteen sediment basins were licensed under the EPL during May 2019. The list of basins is provided in Table 4-1 below. Three sediment basins were commissioned during May; TB2575N - south of Devitts Lane and north of Tandingulla Creek, TB2170S – at the intersection of Jaspers Brush Road and the Princes Highway, TB2190S – located east of Jaspers Brush Road within a project ancillary facility at this location.

On the 20th of May in accordance with licence condition L2.6, DSWJV began to use a statistical correlation for the calculation of TSS (mg/L) from Turbidity (NTU). The correlation uses the formula of $TSS (mg/L) = 0.43 * (NTU) + 1.00$. The values of TSS modelled using this formula have been noted in the table below. DSWJV will continue to collect data from one in every ten discharges to verify the statistical relationship and will notify EPA of any required amendments.

Table 4-1 May 2019 Sediment basin discharge(s)

EPA Identification No.	Location (adjacent address)	Discharge Date	pH (6.5-8.5)	Total Suspended Solids (<50mg/L)	Oil and Grease (none visible)
PB19820.S	Mullers Lane	No discharges during May 2019			
TB21150.S	Opposite O'Keeffe's Lane	01/05/2019	7.66	8	None visible
		06/05/2019	8.3	9	None visible
TB21500.N	Opposite Jaspers Brush Road	03/05/2019	7.6	24	None visible
		08/05/2019	7.5	28	None visible
		13/05/2019	7.1	23	None visible
		16/05/2019	7.39	27	None visible
		22/05/2019	72.9	22^	None visible
TB21700.S	Intersection at Jaspers Brush Road	No discharges during May 2019			
TB21900.S	Jaspers Brush Road Compound	No discharges during May 2019			
TB22100.N	Strongs Road	No discharges during May 2019			
TB22250.S	Opposite Strong's Road	No discharges during May 2019			
TB22650.S	Opposite Isons Compound	No discharges during May 2019			
TB22800.N	Ison Compound	No discharges during May 2019			
TB23400.S	Jaspers Brush North of Wileys Creek	No discharges during May 2019			
TB23450.S	Jaspers Brush North of Wileys Creek	No discharges during May 2019			
PB24.45.N	South of Wileys Creek	No discharges during May 2019			
TB23800.S	Wileys side track compound	No discharges during May 2019			
TB25100.N	Devitts Lane	No discharges during May 2019			
TB25700.N	South of Devitts Lane	No discharges during May 2019			
TB25750.N	South of Devitts Lane	No discharges during May 2019			
TB26150.S	North of Tandingulla Creek	No discharges during May 2019			
TB28900.N	Abernethy's Lane	No discharges during May 2019			

***Lab results for Total Suspended Solids limit of reporting = 5 mg/L**

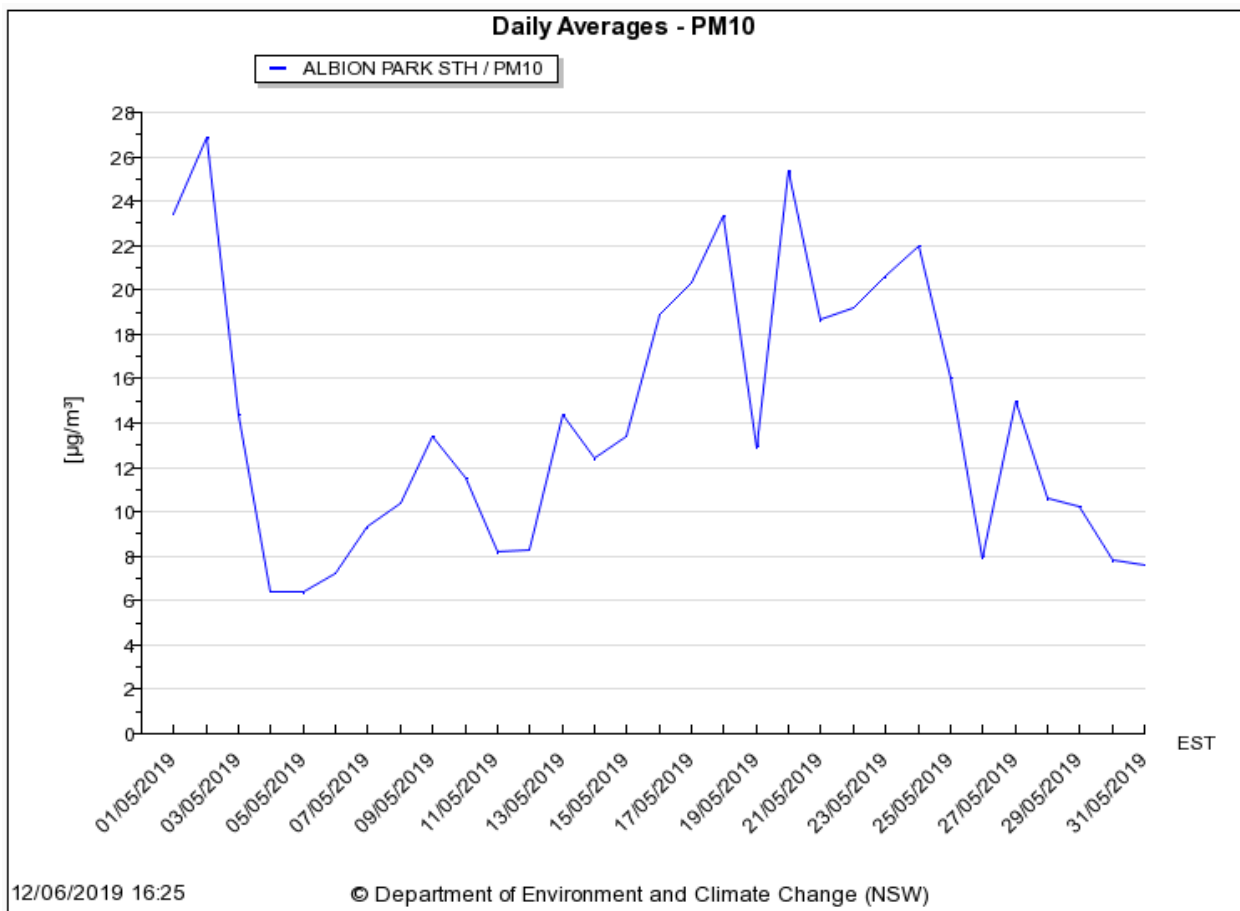
^TSS (mg/L) modelled from Turbidity (NTU) based on approved correlation formula of $TSS = 0.43^*(NTU) + 1.00$

5 AIR MONITORING RESULTS

Dust deposition gauges for the project were installed on 29 April 2019 and changed on 31 May 2019 within the NATA accredited window (30 days +/- 2 days). Air quality has been assessed according to the *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (EPA, 2016). Results are summarised in Table 5-1 below.

Figure 5-1 provides air quality data at the nearest OEH ambient air quality monitoring station to the project (Albion Park, approximately 25 km north of the project area).

Figure 5-1 - Daily Average PM10 levels at Albion Park South NSW Air Quality Monitoring Station, courtesy of NSW Office of Environment and Heritage



Due to the high winds across the project area during May there were several exceedances of the monthly deposited dust criteria. Exceedances were recorded at deposition gauges at Lamonds Lane, 265 Princes Highway (near to Pestells Lane), and two locations at Jaspers Brush Road. Exceedances are noted in **bold** in Table 5-1 below.

To mitigate the generation of dust from the high wind events during May dust suppressant polymer was applied across the premises to areas that had not been previously stabilised and water carts were used continually during construction hours. Dust generating construction activities were reduced across the project area during windy conditions and ceased in areas where required.

Despite several exceedances during May, twelve of the thirteen monitoring points remain below the threshold value of 4 g/m² per month based on a rolling average. Monitoring point DDG-H (10 Lamonds Lane) is currently above the annual criteria and additional control measures are being implemented (such as soil stabilisation and dust suppressant) to improve air quality at this location.

Table 5-1 May 2019 Air quality monitoring results

EPA Identification No.	Location (adjacent address)	Ash Content g/m ² ,month	Combustible Matter g/m ² ,month	Total Insoluble Matter g/m ² ,month	Rolling Average (Total Insoluble Matter) g/m ² ,month
1-DDG A	10 Croziers Lane, Jaspers Brush	0.4	0.2	0.6	2.9
2-DDG B	10A Jaspers Brush Road, Jaspers Brush	2.5	2.4	4.9	2.5
3-DDG C	20C Strongs Road, Jaspers Brush	2.9	0.5	3.4	2.9
4-DDG D	10C Jaspers Brush Road, Jaspers Brush	6.1	1.8	7.9	2.8
5-DDG E	30 Ison Lane, Jaspers Brush	0.4	<0.1	0.4	1.2
6-DDG F	Lot 209 DP 1210788	2.0	1.6	3.6	3.0
7-DDG H	10 Lamonds Lane, Meroo Meadow	5.1	0.5	5.6	4.0
8-DDG I	19 Boxsells Lane, Meroo Meadow	0.5	0.2	0.7	1.6
9-DDG J/K	265 Princes Highway, Meroo Meadow	1.2	6.1	7.3	3.7
10-DDG L	1028 Meroo Meadow, Meroo Meadow	0.1	<0.1	0.1	3.1
11-DDG M	32 Elvin Drive, Bomaderry	2.1	0.7	2.8	2.2
12-DDG N	9 Devitt's Lane, Meroo Meadow	1.1	0.7	1.8	1.9
13-DDG P	24 Abernethys Lane, Meroo Meadow	0.4	<0.1	0.4	3.2

Note: bold type indicates a result above the relevant criteria

6 NOISE MONITORING RESULTS

Noise monitoring was undertaken in accordance with the Construction Noise and Vibration Management Plan (CNVMP) for the project in May 2019. No exceedances above predicted levels for the relevant activity were recorded. The noise monitoring location L1 at B210 Princes Highway was modified slightly due to safety concerns. The location has moved approximately 40m west of the previous location as shown in Figure 6-1.

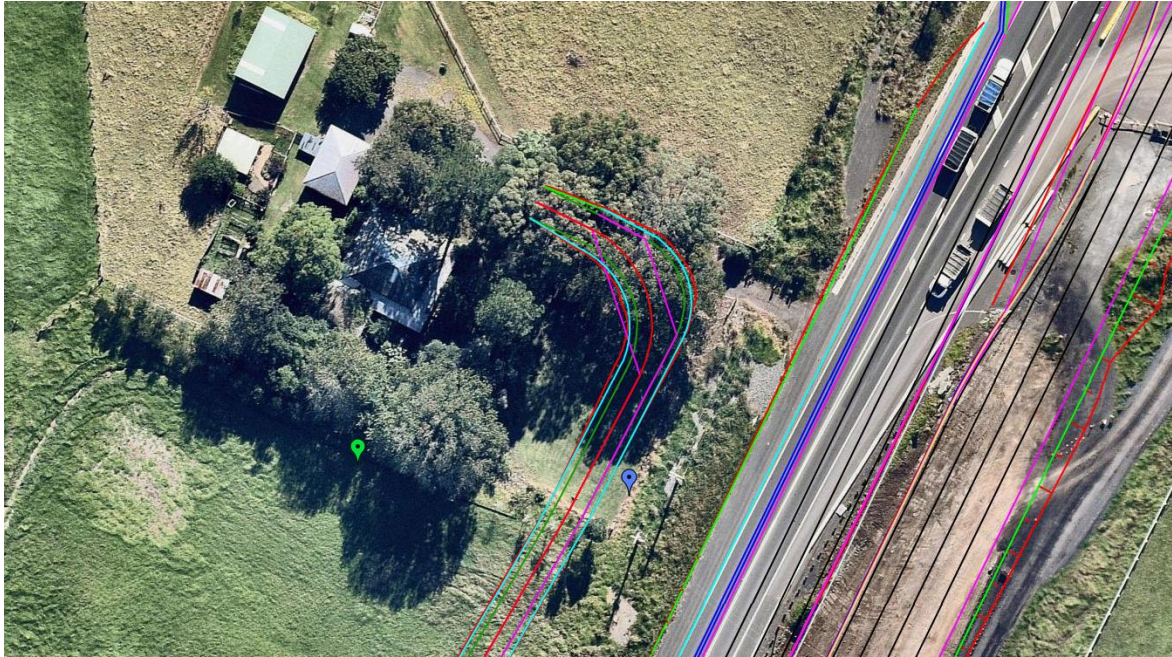


Figure 6-1 Original (blue marker) and revised (green marker) locations for noise monitoring site L1.

The results of May noise monitoring are summarised in Table 6-1 below.

Table 6-1 May 2019 Noise Monitoring Results

EPA ID No.	Location description	Construction activity	Date	Time	L(A) _{eq} 15min	Comments
15	L1 - B210 Princes Highway, Jaspers	Earthworks	15/05/19	12:41 12:56	63.5	Two excavators operating on the opposite side of the Princes Highway. Constant traffic noise from the highway dominating.
16	L2 - 20C Strongs Road, Jaspers Brush	Earthworks	15/05/19	12:14 12:29	64.0	Grader operating on opposite side of the highway, workers brining in scaffold material and using power tools. Traffic noise from the Princes Highway.
17	L3 - 30 Ison Lane, Jaspers Brush	Earthworks	15/05/19	11:49 12:04	51.6	Excavator loading fill into bogie truck which were then leaving the compound area.
18	L5 - 15 Turner Lane, Jaspers Brush	Construction works not audible	15/05/19	13:07 13:22	52.7	Traffic noise from Princes Highway dominating.
19	L6 - B710 Princes Highway, Jaspers Brush	Earthworks	15/05/19	11:18 11:33	58.8	Excavator loading out material into Moxy trucks for cut to fill operation. Traffic noise from the Princes Highway.
20	L7 - 310C Princes Highway, Jaspers Brush	Construction works not audible	21/05/19	12:43 12:58	68.9	Traffic noise from Princes Highway dominating.
21	BG08 - 19 Boxsells Lane, Meroo Meadow	No construction activities in vicinity	15/05/19	10:58 11:13	49.1	Traffic noise from Boxsells Lane.
22	BG09 - 1028 Meroo Road, Meroo Meadow	Earthworks	21/05/19	13:05 13:20	60.6	Truck and dogs entering, exiting area, and unloading material. Grader forming material and water cart providing dust suppression. Some intermittent traffic from Meroo Road.
23	L8 - 24 Abernethys Lane, Meroo Meadow	Earthworks	15/05/19	10:32 10:47	61.0	Traffic noise from Princes Highway dominating. Excavators shaking buckets audible during breaks in traffic.
24	BG10 - 35 Gardenia Crescent, Bomaderry	Construction works not audible	21/05/19	13:31 13:46	49.9	Distant traffic noise from Princes Highway.
25	BG11 - 38 Elvin Drive, Bomaderry	Clearing and Grubbing	15/05/19	10:04 10:19	75.6	Excavator loading trees and other vegetation into a mulcher (0-10 mins). Traffic from Princes Highway audible when excavator ceased (10-15 mins).

7 ENVIRONMENTAL COMPLAINTS

There were three environmental complaints received in May, all were closed out within the required timeframes. The complaints were in response to dust generated on the premises which was the result of a long period of dry weather in combination with strong westerly winds. DSWJV continue to limit the generation of dust through progressive rehabilitation of areas, dust suppression via water carts, and the use of dust suppressant polymer when high winds are predicted.

Complaint No.	Date/time complaint received	Nature of Complaint	Actions and due date	Status/timing
1	1/5/19 2.30pm	Dust generated from the premises near Turners Lane, Jaspers Brush	Additional dust suppression was supplied to the area via a water cart. The nearest dust deposition gauge to the resident is below the threshold criteria for deposited dust.	Closed within 2 hours
2	27/5/2019	Dust generated from stockpiles near Jaspers Brush Road	Complaint in response to dust generation on high wind day – additional dust suppression applied via a water cart including the use of dust suppressant polymer.	Responded within 2 hours Closed within 48 hours
3	29/5/2019	Dust generated from the premises near Turners Lane, Jaspers Brush	Additional dust suppression was supplied to the area via a water cart including the use of dust suppressant polymer. Additional air quality monitoring implemented on the premises to the nearest point to the receiver.	Closed within 24 hours