



ENVIRONMENT PROTECTION LICENCE NO: 21029

January 2020 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.

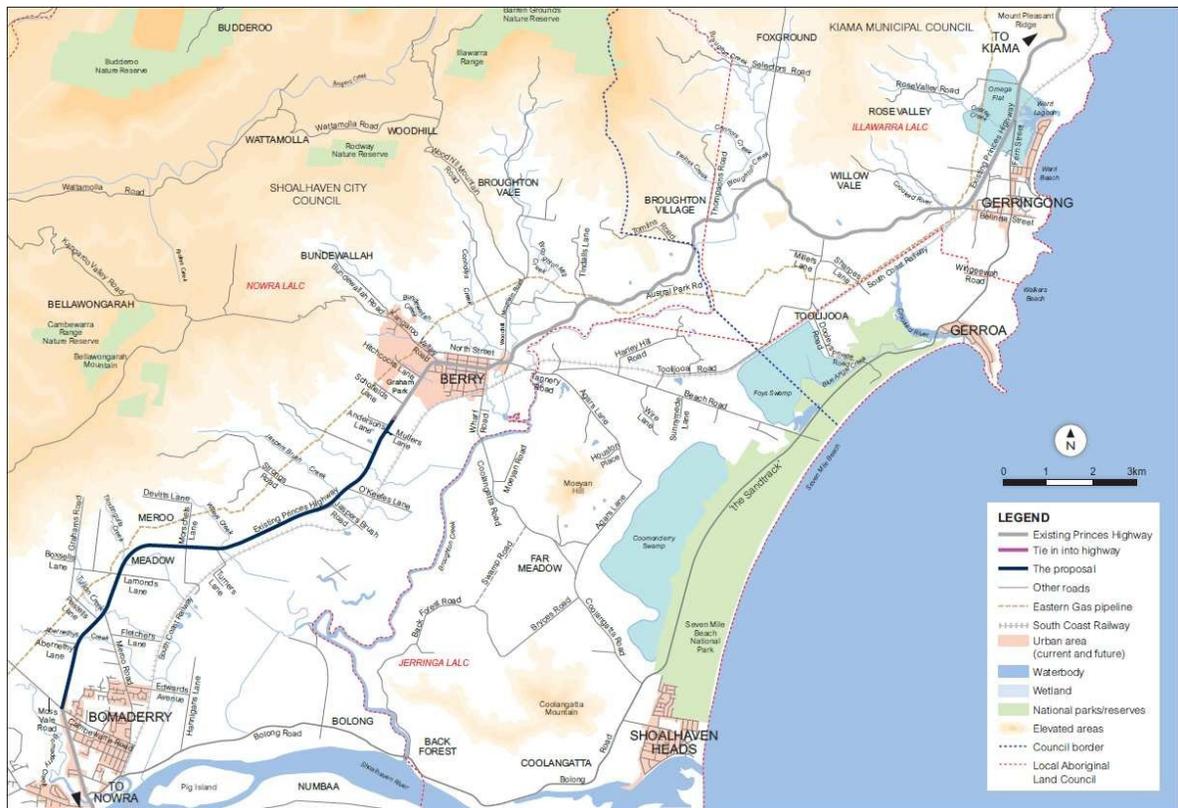


Figure 1-1 Project location

This report provides the results of monitoring undertaken during January 2020 as required by the project’s Environment Protection Licence (EPL 21029) Condition R4.1.

2 NON-COMPLIANCES

One non-compliance with EPL conditions occurred during January. Dust gauges were sampled one day above the recommended NATA accredited window (30 days +/- 2 days) according to the *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (EPA, 2016).

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 January 2020 are provided in Table 3-1 and Figure 3-1 below.

Table 3-1 January 2020 Rainfall monitoring results

Location	Monthly rainfall recorded (mm)
Ison Lane, Jaspers Brush (RMS automatic weather station)	64

January experienced typical precipitation with 64 mm of rainfall recorded at the project specific weather station at Ison Lane, Jaspers Brush (RMS automatic weather station). The long term average expected rainfall is 64.2 mm for January as taken from the Nowra RAN Air Station Bureau of Meteorology Weather Station (Station Number 068076).

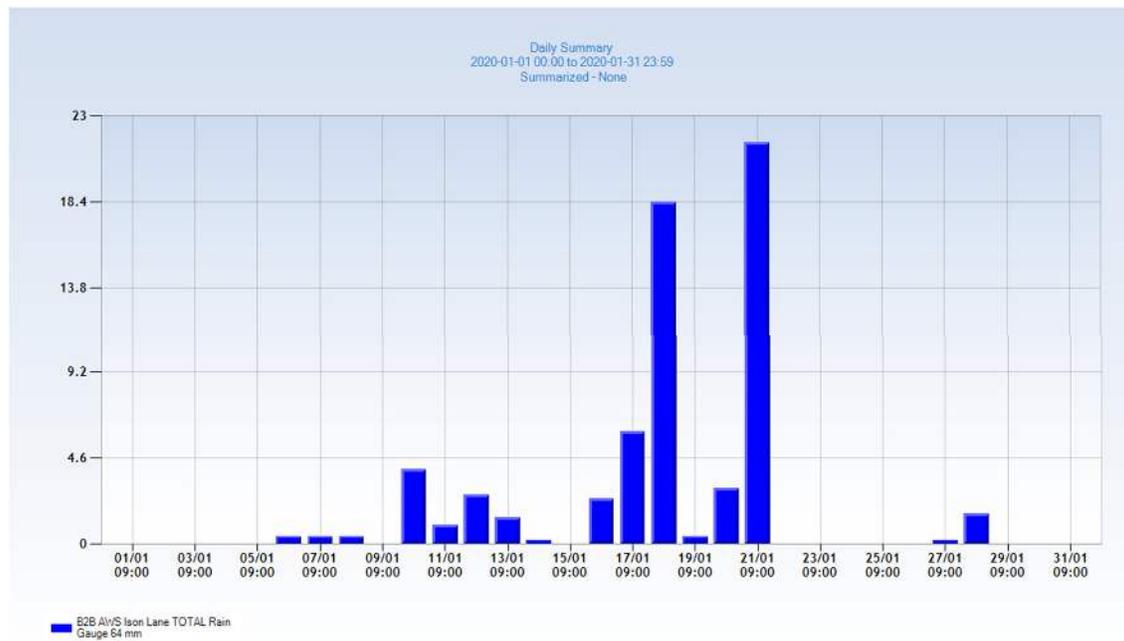


Figure 3-1 January Rainfall Results from Ison Compound Weather Station

Mild conditions prevailed during January with several days of moderate wind speeds. The predominant wind direction for January was from the south-southeast. The highest wind gust recorded was 59.2 km/h and maximum wind speed was 42.6 km/h (refer Figure 3-2). 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 and/or suspend work activities on days of

high wind.

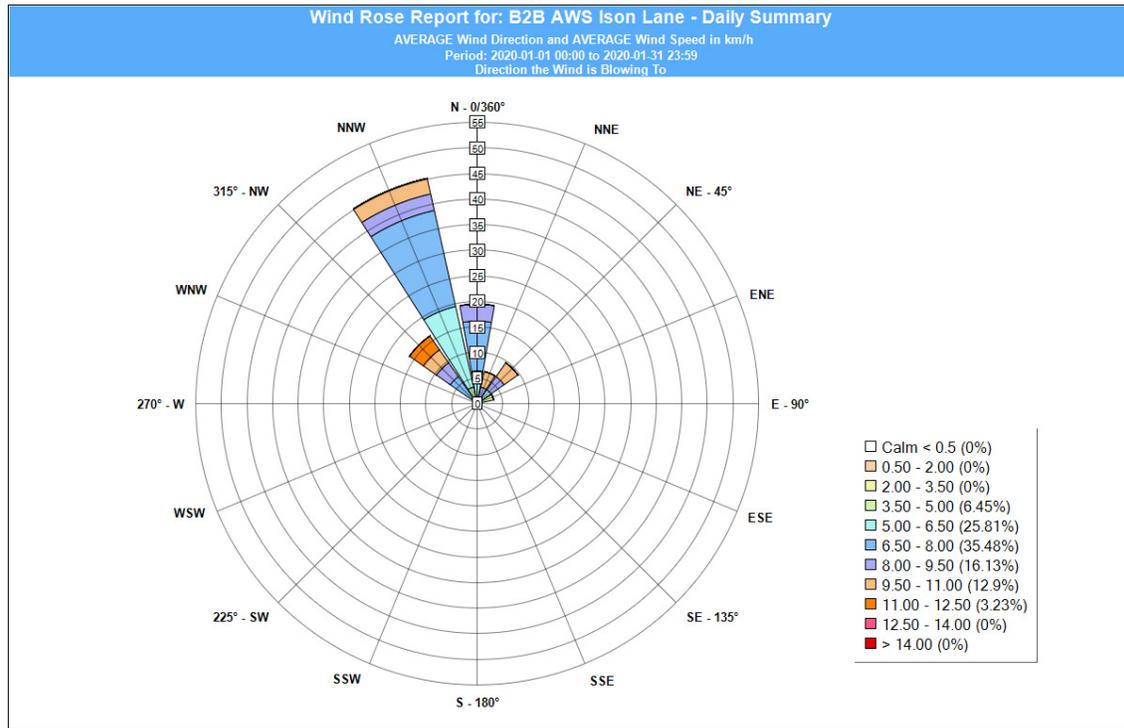


Figure 3-2 January 2020 Wind Rose Results from Ison Lane Compound Weather Station. Average Wind direction and Average Wind Speed shown.

4 SEDIMENT BASIN DISCHARGE

Nineteen sediment basins were licensed under the EPL during January 2020.

A rainfall event occurred with rainfall volume above the 5 day design rainfall specified in Condition L2.5 of the EPL. The event occurred on 20/01/20 with 21.2 mm of rain falling in 30 minutes as measured at the project weather station at Ison Lane. This rainfall event was in addition to the preceding days of rain which totalled 51.8mm within 5 days. Uncontrolled discharge occurred as a result of the intense rainfall at various locations across the project including Tandingulla Creek, Flying Fox Creek, Jaspers Brush Creek and at a property south of Lamonds Service Road.

On the 20th of June 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 $TSS (mg/L) = 0.43 * (NTU) + 1.00$. Given that the threshold value for TSS is 50mg/l, samples if less than 114 NTU would be deemed suitable for discharge. For a factor of safety, the acceptable discharge limit was reduced to 90 NTU.

See Table 4.1 below for details on sediment basin discharges.

Table 4-1 January 2020 Sediment basin discharge(s)

EPA Identification No.	Location (adjacent address)	Discharge Date	pH (6.5-8.5)	Nephelometric Turbidity Units (<90NTU)	Oil and Grease (none visible)
PB19.82.S	Mullers Lane	No discharge during January			
PB24.45.N	B660 Princes Highway	No discharge during January			
TB21.15.N	Opposite O'Keefes Lane	24/01/20	7.5	20	None visible
TB21.50.N	Opposite Jaspers Brush Road	24/01/20	7.0	35	None visible
TB21.70.S	Intersection at Jaspers Brush Road	22/01/20	6.8	21	None visible
TB21.90.S	Jaspers Brush Ancillary Site	No discharge during January			
TB22.10.N	Strongs Road	21/01/20	7.5	20	None visible
		29/01/20	8.0	20	None visible
TB22.25S	Opposite Strongs Road	24/01/20	7.8	70	None visible
TB22.30.N	South of Strongs Road	24/01/20	7.0	30	None visible
TB22.65.S	Opposite Ison Lane	No discharge during January			
TB22.65N	North of Ison Lane	No discharge during January			
TB22.80.N	Ison Compound	21/01/20	7.5	75	None visible
TB23.60N	South of Ison Lane	22/01/20	7.0	70	None visible
TB25.10.N	Devitts Lane	28/01/20	8.0	20	None visible
TB25.70N	South of Devitts Lane	22/01/20	7.0	20	None visible
TB25.75.N	South of Devitts Lane	No discharge during January			
TB26.15S	North of Tandingulla Creek	23/01/20	7.5	60	None visible
TB26.15N	North of Tandingulla Creek	24/01/20	7.0	60	None visible
TB28.90.N	Abernethy's Lane	23/01/20	7.0	35	None visible

5 AIR MONITORING RESULTS

Dust deposition gauges for the project were installed on 18 December 2019 and changed on 20 January 2020 for a total of 33 days of deployment, ie slightly above the NATA accredited window (30 days +/- 2 days), according to the *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (EPA, 2016). This resulted from human error in determination of collection dates.

One dust gauge was found to be missing at the time of collection (DDG M, Elvin Drive Bomaderry) and therefore no data was obtained at this location for the period. The gauge will be replaced in the next period and reported on for the subsequent period.

Total insoluble matter exceeded the relevant criteria of 4g/m²/month at most monitoring locations across the Project during the month of January. This is likely due to extended dry conditions in NSW and also several large bushfires burning in the region creating poor air quality. Two project monitoring locations (DDG H and DDG J/K) rose above the rolling 12-month average of 4g/m²/month during the month. DDG H is located next to Lamonds Lane, which was being filled to final road levels during the period and has been sealed at the time of writing. Project related dust levels are therefore expected to reduce in the coming period. DDG J/K is located between Boxsells Lane and Pestells Lane. Earthworks have increased in this area over the last few months and the predominant southeasterly winds may have resulted in increased dust levels at this location. Water carts and soil binding polymer have been utilised in this area to manage dust levels. Works will continue to be altered or ceased in this area if required to manage dust levels. Results are summarised in Table 5-1 below.

Table 5-1 January 2020 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	6.2	6.5	12.7	3.6
2-DDG B	10A Jaspers Brush Road, Jaspers Brush	5.6	5	10.6	3.4
3-DDG C	20C Strongs Road, Jaspers Brush	6.5	1.5	8	2.8
4-DDG D	10C Jaspers Brush Road, Jaspers Brush	7.6	10.4	18	3.9
5-DDG E	30 Ison Lane, Jaspers Brush	2.3	0.4	2.7	1.2
6-DDG F	Lot 209 DP 1210788	3.2	2	5.2	2.7
7-DDG H	10 Lamonds Lane, Meroo Meadow	5.7	1	6.7	4.3
8-DDG I	19 Boxsells Lane, Meroo Meadow	4.6	1.4	6	2.2
9-DDG J/K	265 Princes Highway, Meroo Meadow	6.5	3.6	10.1	4.5
10-DDG L	1028 Meroo Meadow, Meroo Meadow	6.1	1.9	8	2.8
11-DDG M	32 Elvin Drive, Bomaderry	Dust Gauge missing – no data for period			
12-DDG N	9 Devitt's Lane, Meroo Meadow	5.3	1.2	6.5	2.0
13-DDG P	24 Abernethys Lane, Meroo Meadow	3.2	1	4.2	1.8

Note: bold type indicates a result above the relevant criteria

Figure 5-1 provides air quality data from the nearest OEH ambient air quality monitoring stations to the project (Wollongong, Kembla Grange and Albion Park, approximately 25 km north of the project area). Very poor regional air quality was experienced for much of January, likely due to smoke haze resulting from numerous bushfires in NSW.

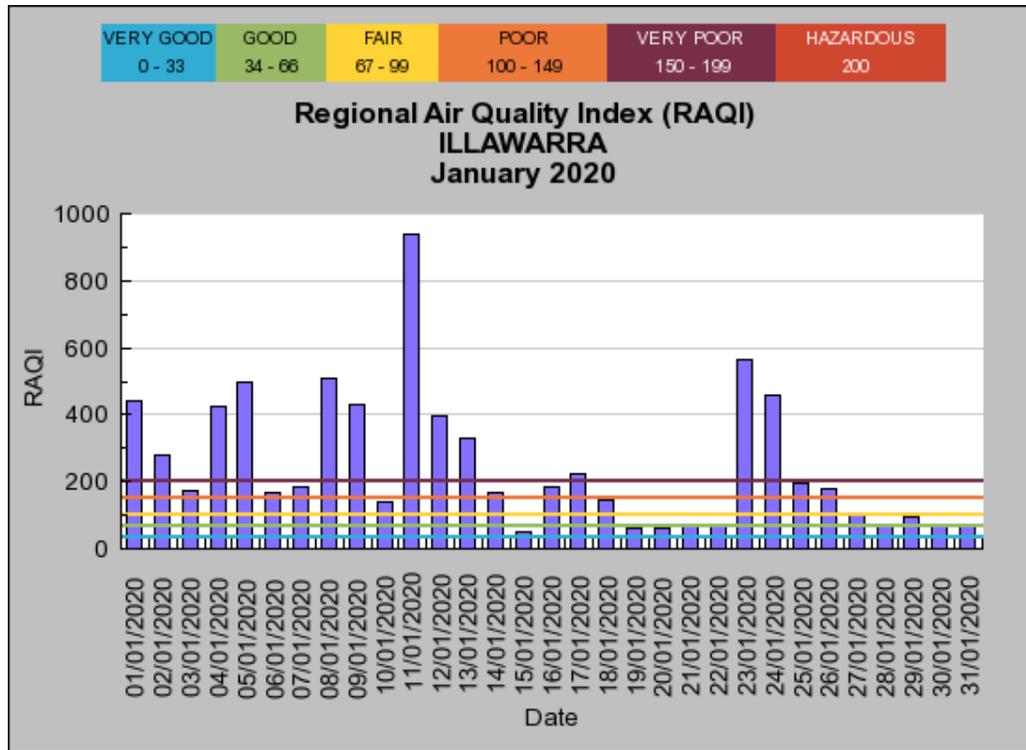


Figure 5-1: Regional Air Quality Index for January from the nearest OEH air quality monitoring stations – Illawarra (NSW OEH).

6 NOISE MONITORING RESULTS

Noise monitoring was undertaken in accordance with the Construction Noise and Vibration Management Plan (CNVMP) for the project in January 2020. No exceedances above predicted levels for the relevant activity were recorded.

Table 6-1 below summarises the attended noise monitoring undertaken in January 2020.

Table 6-1 January 2020 Noise Monitoring Results

EPA ID No.	Location description	Construction activity	Date	Time	L(A)eq 15min	Comments
15	L1 - B210 Princes Highway, Jaspers	Earthworks	15/01/2020	11:52	59.0	<ul style="list-style-type: none"> No construction works within the vicinity Constant traffic from Princes Highway.

EPA ID No.	Location description	Construction activity	Date	Time	L(A)eq 15min	Comments
16	L2 - 20C Strongs Road, Jaspers Brush	Earthworks	15/01/2020	10:53	55.9	<ul style="list-style-type: none"> Excavator loading operations ongoing with Reversing plant audible in background. Constant traffic from Princes Highway nearby dominant noise source.
17	L3 - 30 Ison Lane, Jaspers Brush	Compound operation	15/01/2020	10:30	44.3	<ul style="list-style-type: none"> Background noise from compound testing lab shed Constant traffic from the Princes Highway further in the distance.
18	L5 - 15 Turner Lane, Jaspers Brush	Earthworks	15/01/2020	12:20	54.5	<ul style="list-style-type: none"> Constant traffic from Princes Highway dominant noise source Intermittent noise from power tools, and 13T excavator operating at Wiley's bridge site
19	L6 - B710 Princes Highway, Jaspers Brush	No construction	16/01/2020	12:56	57.9	<ul style="list-style-type: none"> Light vehicles / Truck and dog activity along haul road. Constant traffic from Princes Highway
20	L7 - 310C Princes Highway, Jaspers Brush	Earthworks	14/01/2020	12:40	57.0	<ul style="list-style-type: none"> Constant traffic from Princes Highway.
21	BG08 - 19 Boxsells Lane, Meroo Meadow	Earthworks	14/01/2020	11:52	66.0	<ul style="list-style-type: none"> Watercart & Street Sweeper operating in distance Moxy trucks Operating in distance Constant traffic from the Princes Highway further in the distance.
22	BG09 - 1028 Meroo Road, Meroo Meadow	No construction works audible	14/01/2020	16:54	57.2	<ul style="list-style-type: none"> No construction works audible in this area. Local traffic on Meroo Road.
23	L8 - 24 Abernethys Lane, Meroo Meadow	Earthworks	14/01/2020	11:18	59.0	<ul style="list-style-type: none"> Constant traffic from Princes Highway 32T excavator operating at Abernethy's bridge site Ongoing survey and delineation work observed within noise catchment.
24	BG10 - 35 Gardenia Crescent, Bomaderry	No construction works audible	14/01/2020	13:40	46.6	<ul style="list-style-type: none"> No construction works audible in this area. Traffic observed on local road.

EPA ID No.	Location description	Construction activity	Date	Time	L(A) _{eq} 15min	Comments
25	BG11 - 38 Elvin Drive, Bomaderry	Earthworks/Drainage	14/01/2020	10:52	63.3	<ul style="list-style-type: none"> • Constant Traffic from Princes Highway. • Dominant noise sources include asphalt paving equipment at Bomaderry Strait, Posi track and bogie activity for access works adjacent noise mound

7 ENVIRONMENTAL COMPLAINTS

There were no environmental complaints received in January 2020.