



ENVIRONMENT PROTECTION LICENCE NO: 21029

February 2020 Monthly Report

FOR

**Princes Highway Upgrade
between Berry and Bomaderry**

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Contents

1	INTRODUCTION	4
2	NON-COMPLIANCES	5
3	RAINFALL AND WEATHER	5
4	SEDIMENT BASIN DISCHARGE	6
5	AIR MONITORING RESULTS	8
6	NOISE MONITORING RESULTS	9
7	ENVIRONMENTAL COMPLAINTS	12

Table 3-1 February 2020 Rainfall monitoring results	5
Table 4-1 February 2020 Sediment basin discharge(s)	7
Table 5-1 February 2020 Air quality monitoring results.....	8
Table 6-1 February 2020 Noise Monitoring Results.....	9

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.

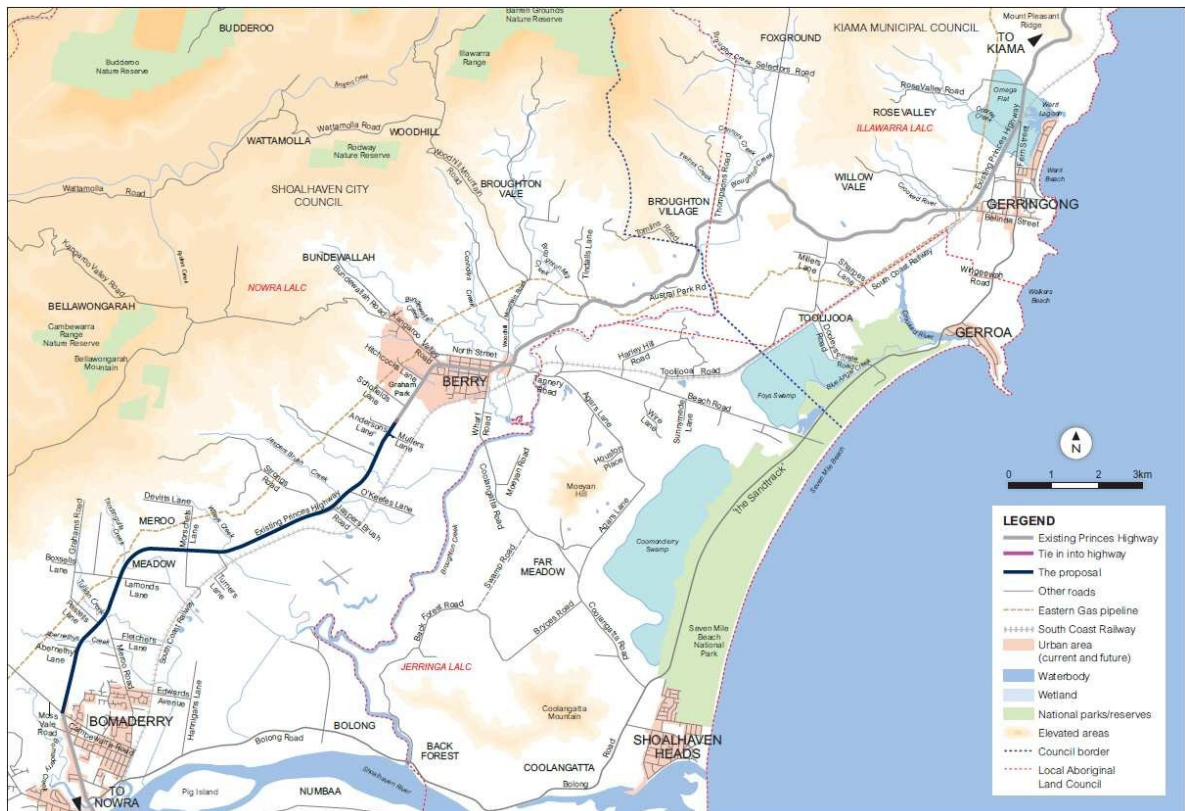


Figure 1-1 Project location

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

2 NON-COMPLIANCES

No non-compliances occurred against EPL conditions during the month of February.

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

Table 3-1 February 2020 Rainfall monitoring results

Location	Monthly rainfall recorded (mm)
Ison Lane, Jaspers Brush (RMS automatic weather station)	484.8

February experienced a substantial amount of rainfall with 484.8 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 120.0 mm for February as taken from the Nowra RAN Air Station Bureau of Meteorology Weather Station (Station Number 068076). The amount of rainfall received in February equates to approximately 42% of the mean annual rainfall for the Nowra RAN Air Station with a 1 in 15 year rainfall event for a one day duration falling on 10/02/20.

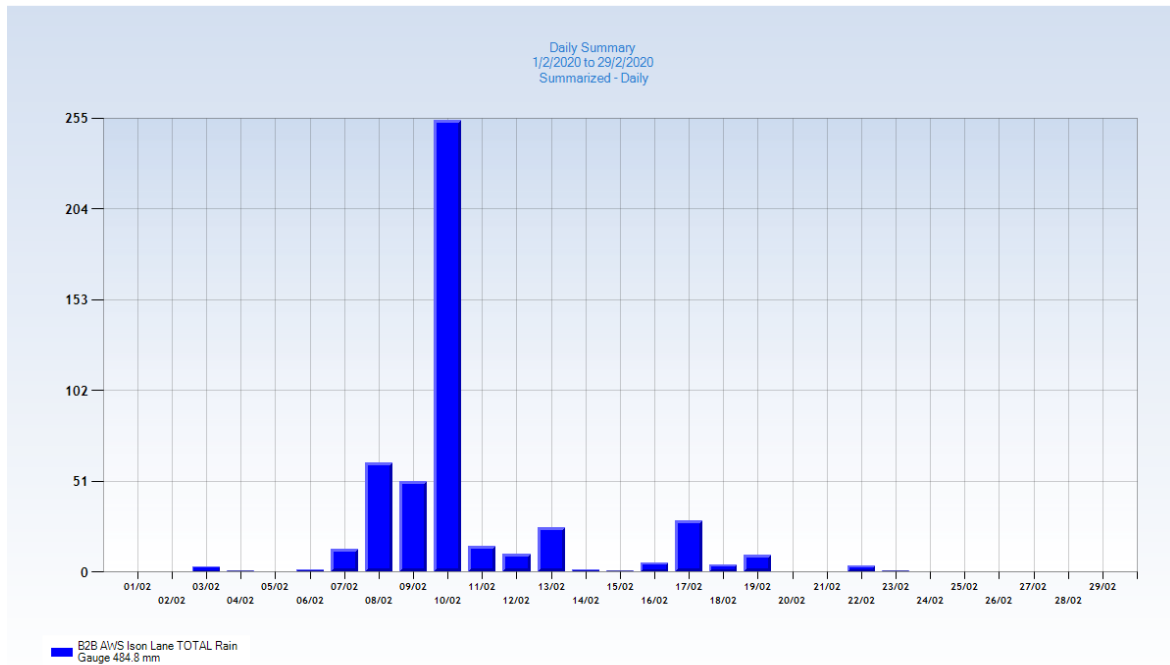


Figure 3-1 February Rainfall Results from Ison Compound Weather Station

Mild conditions prevailed during February with several days of moderate wind speeds. The predominant wind direction for February was from the south-southeast. The highest wind gust recorded was 61.5 km/h and maximum wind speed was 46.1 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.

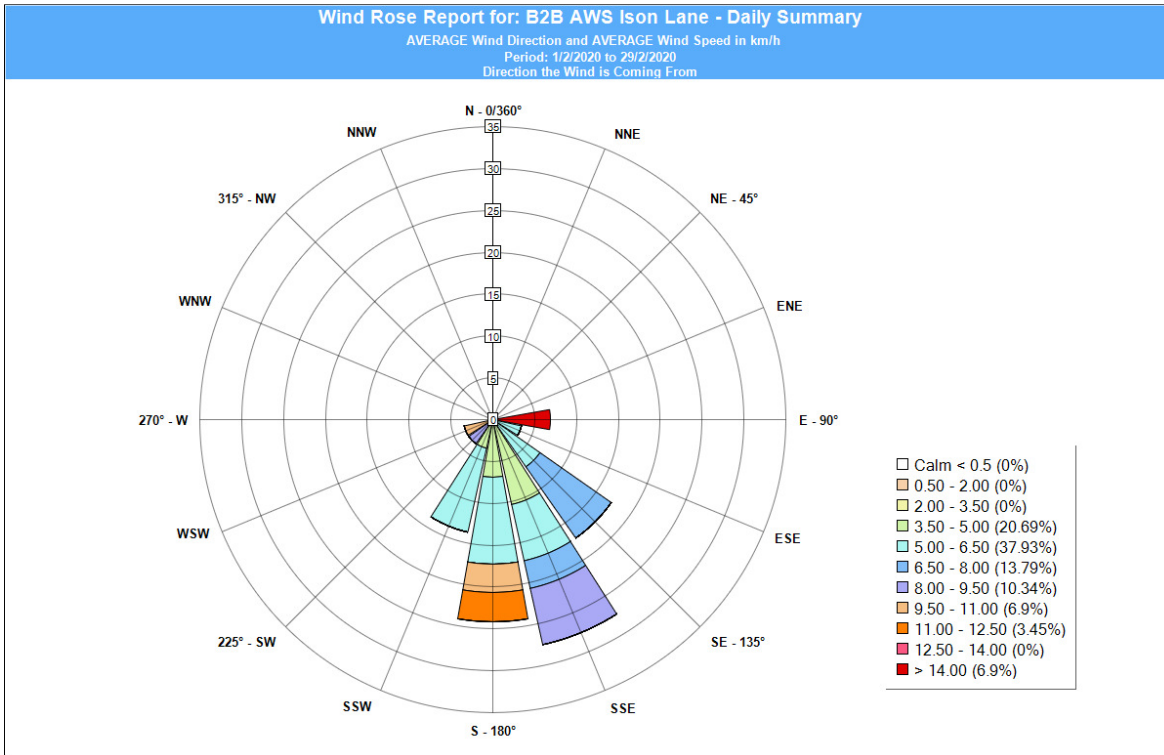


Figure 3-2 February 2020 Wind Rose Results from Ison Lane Compound Weather Station. Average Wind direction and Average Wind Speed shown.

4 SEDIMENT BASIN DISCHARGE

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

February was an extremely wet month with 484.8 mm of rainfall in total as described above. The 5 day design rainfall specified in Condition L2.5 of the EPL was exceeded on 8th February and rainfall continued over most days of the month until the 23rd February. Uncontrolled discharges occurred as a result of the rainfall at all sediment basins and across sites. This was reported via the EPA Environment Line on 8th February, however continued until after rainfall ceased due to ongoing runoff across sites. All basins were returned to operational status by 28th February.

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 February 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	14/02/20	7	30	None visible
		20/02/20	7	30	None visible
PB24.45.N	B660 Princes Highway	25/02/20	7.5	70	None visible
TB21.15.N	Opposite O'Keefes Lane	28/02/20	7.5	35	None visible
TB21.50.N	Opposite Jaspers Brush Road	25/02/20	7	40	None visible
TB21.70.S	Intersection at Jaspers Brush Road	26/02/20	7	60	None visible
TB21.90.S	Jaspers Brush Ancillary Site	04/02/20	6.8	20	None visible
		25/02/20	7	70	None visible
TB22.10.N	Strongs Road	21/02/20	7	60	None visible
TB22.25S	Opposite Strongs Road	No discharges in February 2020			
TB22.30.N	South of Strongs Road	24/02/20	7	70	None visible
TB22.65.S	Opposite Ison Lane	No discharges in February 2020			
TB22.65N	North of Ison Lane	26/02/20	7.5	50	None visible
		28/02/20	7	60	None visible
TB22.80.N	Ison Compound	14/02/20	7.5	30	None visible
		19/02/20	7	40	None visible
TB23.60N	South of Ison Lane	25/02/20	6.8	70	None visible
TB25.10.N	Devitts Lane	24/02/20	6.8	14	None visible
TB25.70N	South of Devitts Lane	26/02/20	7	70	None visible
TB25.75.N	South of Devitts Lane	19/02/20	6.9	32	None visible
TB26.15S	North of Tandingulla Creek	24/02/20	7	20	None visible
TB26.15N	North of Tandingulla Creek	24/02/20	7.5	30	None visible
		27/02/20	7	40	None visible
TB28.90.N	Abernethy's Lane	04/02/20	7	20	None visible
		19/02/20	7.9	22	None visible
		24/02/20	6.5	20	None visible

5 AIR MONITORING RESULTS

Dust deposition gauges for the project were installed on 20 January 2020 and changed on 21 February 2020 for a total of 32 days of deployment, ie within 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).

One dust gauge was still missing at the time of collection (DDG M, Elvin Drive Bomaderry) and therefore no data was obtained at this location for the period. Since collection the gauge has been located and redeployed for data collection for the upcoming period.

Total insoluble matter exceeded the relevant criteria of 4g/m²/month at monitoring location DDG-L (Meroo Meadow) during the month of February, however the rolling average remained below the relevant criteria. Minimal earthworks occurred during February due to the wet conditions, however some topsoil screening/sieving occurred in the work area to the north of this monitoring location as well as some earthworks further north on the western side of the Princes Highway. Given the predominant wind direction was from the south-south east during the month, it is considered likely that offsite factors were the main contributor to this monthly result. Dust levels will be closely monitored over the coming period to ensure dust levels are minimised in this location. Works will be altered or ceased in this area if required to manage dust levels. Results are summarised in Table 5-1 below.

Table 5-1 February 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	1.9	1.3	3.2	3.5
2-DDG B	10A Jaspers Brush Road, Jaspers Brush	2.6	0.3	2.9	3.4
3-DDG C	20C Strongs Road, Jaspers Brush	2.2	0.7	2.9	2.6
4-DDG D	10C Jaspers Brush Road, Jaspers Brush	2.1	0.6	2.7	3.9
5-DDG E	30 Ison Lane, Jaspers Brush	1.4	0.4	1.8	1.1
6-DDG F	Lot 209 DP 1210788	1.4	0.4	1.8	2.5
7-DDG H	10 Lamonds Lane, Meroo Meadow	1.7	0.3	2.0	3.8
8-DDG I	19 Boxsells Lane, Meroo Meadow	0.8	0.3	1.1	2.0
9-DDG J/K	265 Princes Highway, Meroo Meadow	1.6	0.6	2.2	3.7
10-DDG L	1028 Meroo Meadow, Meroo Meadow	6.0	0.3	6.3	3.1
11-DDG M	32 Elvin Drive, Bomaderry	Dust Gauge missing – no data for period			
12-DDG N	9 Devitt's Lane, Meroo Meadow	1.6	0.4	2.0	1.8
13-DDG P	24 Abernethys Lane, Meroo Meadow	2.0	0.5	2.5	1.7

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). Poor regional air quality was experienced at the beginning February, likely due to smoke haze resulting from numerous bushfires in NSW. Following the extinguishment of these fires due to heavy rainfall across the state, air quality improved and remained more stable for the remainder of the month.

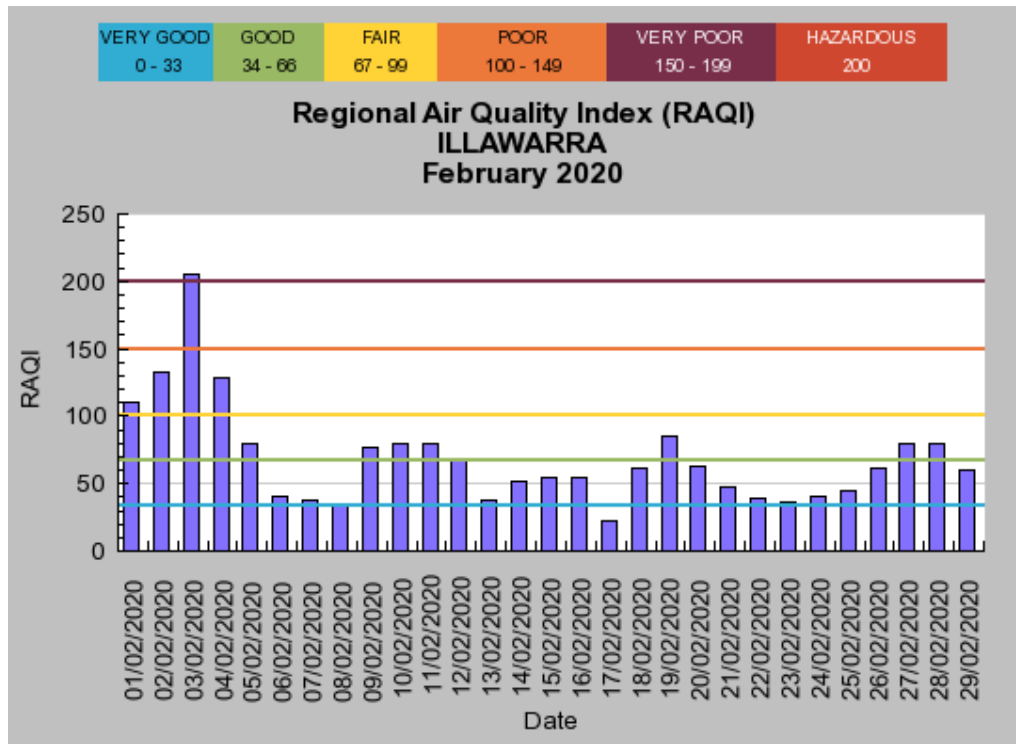


Figure 5-1: Regional Air Quality Index for February from the nearest OEH air quality monitoring stations – Illawarra (NSW OEH).

6 NOISE MONITORING RESULTS

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

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

Table 6-1 February 2020 Noise Monitoring Results

EPA ID No.	Location description	Construction activity	Date	Time	L(A)eq 15min	Comments
15	L1 - B210 Princes Highway, Jaspers	No construction	27/02/2020	15:01	62.8	<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	No construction	27/02/2020	14:40	57.4	<ul style="list-style-type: none"> No construction works within the vicinity Constant traffic from Princes Highway nearby dominant noise source.
17	L3 - 30 Ison Lane, Jaspers Brush	Compound operation	28/02/2020	10:35	53.7	<ul style="list-style-type: none"> Stockpiling of spoil with 20t excavator Truck and dog traffic at compound Constant traffic from the Princes Highway further in the distance.
18	L5 - 15 Turner Lane, Jaspers Brush	Concrete works	27/02/2020	15:27	59.0	<ul style="list-style-type: none"> Constant traffic from Princes Highway dominant noise source Concrete pump not audible over highway traffic
19	L6 - B710 Princes Highway, Jaspers Brush	Earthworks	27/02/2020	13:35	59.3	<ul style="list-style-type: none"> Water cart operating Constant traffic from Princes Highway
20	L7 - 310C Princes Highway, Jaspers Brush	Structure works	28/02/2020	11:06	51.7	<ul style="list-style-type: none"> Constant traffic from Princes Highway. Welding Concrete pumping
21	BG08 - 19 Boxsells Lane, Meroo Meadow	No construction	27/02/2020	11:38	62.1	<ul style="list-style-type: none"> Watercart and traffic control vehicles using u-turn bay Constant traffic from the Princes Highway further in the distance.
22	BG09 - 1028 Meroo Road, Meroo Meadow	Structure works	28/02/2020	11:47	56.5	<ul style="list-style-type: none"> Structural works using hand tools Constant traffic from the Princes Highway further in the distance.
23	L8 - 24 Abernethys Lane, Meroo Meadow	Earthworks	28/02/2020	10:02	55.0	<ul style="list-style-type: none"> Constant traffic from Princes Highway 32T excavator, grader and roller operating Concrete pour
24	BG10 - 35 Gardenia Crescent, Bomaderry	No construction works audible	28/02/2020	12:13	50.7	<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	No construction	28/02/2020	9:33	64.7	<ul style="list-style-type: none"> • Constant Traffic from Princes Highway. • No construction nearby

7 ENVIRONMENTAL COMPLAINTS

There were no environmental complaints received in February 2020.