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Warrell Creek to Nambucca Heads – Pacific Highway Upgrade Project

ENVIRONMENT PROTECTION AUTHORITY MONTHLY REPORT

- February 2017

Pacifico Project Number: WC2NH

A team consisting of RMS and Pacifico (ACCIONA Ferrovial JV)
to upgrade the Pacific Highway at Warrell Creek to Nambucca Heads

Contents

1. Introduction

Environmental Protection Licence (EPL) 20533 was issued to ACCIONA Infrastructure for the Warrell Creek to Nambucca Heads Pacific Highway Upgrade project on the 16th December 2014. Condition R1.8 of the EPL requires the licensee to provide the EPA with a monthly report containing the following information:

a) details of all non-compliances with the conditions of this licence and measures taken, or proposed, to prevent a recurrence of such a non-compliance; and
b) details of all discharges from the sediment basins where the water quality results exceed the limits prescribed by Condition L2.4 including the results of rainfall measurements to demonstrate compliance with Condition L2.5; and
c) details of results of any acoustic investigation made in relation to Condition L4.2d); and

The report referred to in this condition must be received by the EPA within 10 working days of the end of each month.

This document has been prepared to fulfil the requirements of Condition R1.8.

1.1 Description of Works

The project's construction activities during February 2017 included the following:

- Bitumen sealing work
- Clearing and Grubbing
- Topsoil stripping
- Earthworks
- Continuing bridge works including piling, headstock construction, pile caps, girder placement, deck unit installation and temporary work platforms
- Continuing drainage works
- Scour rock installation
- Continuing utility works
- Batter stabilisation using hydromulch (permanent design seed mix)
- Landscape Planting
- Topsoil Amelioration and Blending
- Concrete Lined Drains
- Basin Decommissioning
- Basin Maintenance including dewatering
- Installation of Erosion and Sediment Controls
- Pavement (Asphalt and Concrete)
- Line marking
- Operation of concrete and asphalt batch plants
- Removal of temporary bridge at Lower Warrell Creek

Works scheduled for next month include

- Earthworks including crushing
- Continuing bridge works including piling, headstock construction, pile caps, girder placement, deck unit installation and temporary work platforms

- Landscape Planting
- Continuing drainage works
- Scour rock installation
- Continuing utility works
- Batter stabilisation using hydromulch (permanent design seed mix)
- Topsoil Amelioration and Blending
- Concrete Lined Drains
- Basin Decommissioning
- Basin Maintenance including dewatering and desilting
- Installation of Erosion and Sediment Controls
- Paving operations including Asphalting and concreting
- Line marking Pavement (Asphalt and Concrete)
- Removal of temporary jetty at Nambucca River
- Commence removing rock platforms at Lower Warrell Creek and Nambucca River
- Underwater cutting of temporary piles at Lower Warrell Creek and Nambucca River

1.2 Consultation Activities

The project's consultation activities during February 2017 included the following:

Table 1 – Consultation Activities

Groups	Date	Key Topics
Environmental Review Group	07/02/17	Construction Progress, Design Update, Upcoming Works, Environmental Update, Monitoring Update, Out of Hours Works, Incidents and Community Complaints
Toolboxes	Wednesdays each week	Workforce behavioural issues examined and impact management tips provided, as appropriate. eg. Dust suppressing, mud impacts on local roads, reminder of media protocols.
North Facing Ramps group	10am Monday tri-weekly – session held 20 February	Three week look-ahead for construction activities and general project discussion.

Other Consultation Activities:

- Distributed notification for new Bald Hill Road bridge partial opening and new temporary road diversion
- Gained agreement from 3 residents for Bald Hill Road out of hours' line-marking
- Gained agreement from 1 resident for Albert Drive out of hours' line-marking

- Distributed notification for approval of new temporary asphalt plant to entire email distribution list, as well as letterbox distribution to 63 properties closest to the new facility (as per communications plan)
- Sought approval from RMS for quarry access bridge highway girder lift communications plan, notification and newspaper advertisement
- Provided input to RMS quarterly Project Update
- Ongoing and timely notifications and traffic alerts for night time girder deliveries through Macksville

At House Noise Treatments

The at house noise treatment program is currently being managed by RMS and is not part of the ACCIONA (Pacifico) Scope of Works and Technical Criteria.

Upcoming Community and stakeholder activities:

- Conduct first Community Information Session for 2017 scheduled for Wednesday 15 March (one only, at Warrell Creek construction compound)
- Conduct next North Facing Ramps tri-weekly roadside community meetings scheduled for Monday 13 March
- Distribute third edition notification of three-monthly North Facing Ramps look-ahead
- Seek agreements for out of hours work for the southern compound temporary asphalt plant, and out of hours work for asphalting on defined sections of the alignment
- Distribute quarry bridge access Pacific Highway girder lift communications plan, notification, and newspaper advertisement
- Project Update for Acciona website
- Continue to consult stakeholders impacted by visual mounds along the entire alignment
- Signposting communications plan (tie into mid-year Community Information Sessions)
- Continue to identify community groups for specific presentation of key messages second half of 2017.
- Fine-tune Landscaping Planting drawings with Nambucca Shire Council

2. Weather

2.1 Discussion

The automatic recording weather stations at the main site compounds (north and south) records rainfall totals daily at 9AM. The total rainfall received for the month is as follows: -

Table 2 – Rainfall recorded at the two weather stations operated by Pacifico

Month	Total monthly rainfall	Location
01/02/17 – 28/02/17	98.6mm	Northern Compound
01/02/17 – 28/02/17	71.2mm	Albert Drive Compound

The site experienced a total of 12 rain days throughout the month of February 2017.

During February, rainfall received on site was lower than the February monthly average of 171.3mm. A summary of weather conditions recorded over the month for Smoky Cape by the Bureau of Meteorology is detailed below in Table 2.3.

The daily summaries for rainfall received in February at the Albert Drive Compound and Northern Compound are shown below in Table 2.1 and 2.2.

Table 2.1 – Rainfall recorded at Albert Drive Southern Compound Automated Weather Station

February 2017

Date	Time	TOTAL Rain Gauge (mm)
1/02/2017	9:00:00	0
2/02/2017	9:00:00	0
3/02/2017	9:00:00	0
4/02/2017	9:00:00	0.2
5/02/2017	9:00:00	0
6/02/2017	9:00:00	0
7/02/2017	9:00:00	0
8/02/2017	9:00:00	4.8
9/02/2017	9:00:00	6.8
10/02/2017	9:00:00	2.6
11/02/2017	9:00:00	0
12/02/2017	9:00:00	0
13/02/2017	9:00:00	0.6
14/02/2017	9:00:00	1
15/02/2017	9:00:00	2
16/02/2017	9:00:00	0
17/02/2017	9:00:00	0
18/02/2017	9:00:00	7.8
19/02/2017	9:00:00	0
20/02/2017	9:00:00	14.8
21/02/2017	9:00:00	0
22/02/2017	9:00:00	0
23/02/2017	9:00:00	0
24/02/2017	9:00:00	0
25/02/2017	9:00:00	0
26/02/2017	9:00:00	2.8
27/02/2017	9:00:00	6.8
28/02/2017	9:00:00	21

Table 2.2 – Rainfall recorded at the Northern Compound Automated Weather Station

February 2017

Date	Time	TOTAL Rain Gauge (mm)
1/02/2017	9:00:00	0
2/02/2017	9:00:00	0
3/02/2017	9:00:00	0
4/02/2017	9:00:00	0
5/02/2017	9:00:00	0
6/02/2017	9:00:00	0
7/02/2017	9:00:00	0
8/02/2017	9:00:00	15
9/02/2017	9:00:00	15.4
10/02/2017	9:00:00	1.2
11/02/2017	9:00:00	0
12/02/2017	9:00:00	0
13/02/2017	9:00:00	0
14/02/2017	9:00:00	2.2
15/02/2017	9:00:00	6.2
16/02/2017	9:00:00	0.6
17/02/2017	9:00:00	0
18/02/2017	9:00:00	6.6
19/02/2017	9:00:00	0.2
20/02/2017	9:00:00	21
21/02/2017	9:00:00	0
22/02/2017	9:00:00	1.4
23/02/2017	9:00:00	0
24/02/2017	9:00:00	0
25/02/2017	9:00:00	0
26/02/2017	9:00:00	0.2
27/02/2017	9:00:00	4.2
28/02/2017	9:00:00	21.4

Table 2.3: Weather conditions recorded in February 2017 at Smoky Cape by the Bureau of Meteorology.

February 2017

Date	Minimum temperature (°C)	Maximum temperature (°C)	Rainfall (mm)
1/02/2017	22.1	33	0
2/02/2017	22.8	33.6	0
3/02/2017	22.2	31	0
4/02/2017	23.8	29.5	0
5/02/2017	22.8	29.2	0
6/02/2017	22.8	29	0
7/02/2017	23	32.9	0
8/02/2017	22	31.2	8.4
9/02/2017	23	30.2	1.8
10/02/2017	22.1	31.1	1.8
11/02/2017	23		0
12/02/2017			
13/02/2017		33.1	
14/02/2017	21.5	26.1	6
15/02/2017	18.9	29	9
16/02/2017	20	28.7	0
17/02/2017	23	28.2	0
18/02/2017	20.5	27.9	7.4
19/02/2017	21.5	26.8	0
20/02/2017	18.1	28.8	16.2
21/02/2017	19.3	31.4	0
22/02/2017	20	32	0
23/02/2017	21.5	30.6	0
24/02/2017	21.4	31.3	0
25/02/2017	20.6	32.1	0
26/02/2017	19.7	26	0
27/02/2017	18.4	22.9	4.2
28/02/2017	18.9	33	50.2

3. Surface Water Monitoring

Pacifico have been provided trigger levels for baseline monitoring from RMS, these will be compared against monthly data as well as between upstream and downstream sites to determine works impact.

Monthly sampling was undertaken by ACCIONA (Pacifico):

Wet Sampling Event

A "wet" sampling (>10mm in 24 hours) was undertaken on the 10th February 2017, field testing and lab sampling was undertaken. Results are attached in Appendix A.

pH levels noted to be outside of trigger levels at:

Lower Warrell Creek recorded elevated pH levels upstream (7.33) and downstream (7.30). It is noted that levels decreased from upstream to downstream sites and are thus unlikely to be attributed to construction impacts. All controls were in place for the site, with no activities undertaken within the waterway.

Dissolved Oxygen (DO) noted to be below trigger levels at:

Upper Warrell Creek downstream (1.5mg/L). All controls were verified to be in place for the site, with no construction activities undertaken within the waterway. The reduced levels may be due to decaying vegetative matter within the waterway. Additionally, the elevated water temperature (26.78 C) may have contributed to the reduced levels. Upstream recorded level was 2.76mg/L. During the previous wet event in January 2017, upstream recorded low levels of DO (1.11mg/L), with downstream reading higher (2.45mg/L).

Lower Warrell Creek upstream (3.88mg/L) and downstream (4.96mg/L). All controls were verified to be in place for the site, with no construction activities undertaken within the waterway. It is noted that levels increased from upstream to downstream and are thus unlikely to be due to construction impacts. The reduced levels may be due to decaying vegetative matter within the waterway. Additionally, the elevated water temperature upstream (31.38 C) and downstream (31.23 C) may have contributed to the reduced levels.

Nambucca River upstream (6.1mg/L) and downstream (6.17mg/L). All controls were verified to be in place for the site, with no construction activities undertaken within the waterway. It is noted that levels increased from upstream to downstream and are thus unlikely to be due to construction impacts.. Additionally, these levels are within ANZECC criteria (5mg/L).

Conductivity note to be above trigger levels at:

Lower Warrell Creek upstream (26.2mS/cm) and downstream (26.1mS/cm). All controls were verified to be in place for the site, with no construction activities undertaken within the waterway. It is noted that levels increased from upstream to downstream and are thus unlikely to be due to construction impacts.

Metals noted to be above trigger levels at:

Stony Creek recorded elevated levels of manganese upstream (0.385mg/L) and downstream (0.115mg/L). All controls were verified to be in place for the site, with no construction activities undertaken within the waterway. It is noted that levels increased from upstream to downstream and are thus unlikely to be due to construction impacts. It is also noted that these levels are well within ANZECC criteria (1.9mg/L).

Lower Warrell Creek recorded elevated levels of arsenic upstream (0.002mg/L) and downstream (0.002mg/L). All controls were verified to be in place for the site with no construction activities undertaken within the waterway. It is noted that these levels did not change from upstream to downstream sites and are thus unlikely to be due to construction impacts. It is also noted that these levels are within ANZECC criteria (0.024mg/L).

Nutrients noted to be above trigger levels at:

Upper Warrell Creek recorded elevated levels of ammonia downstream (0.06mg/L). All controls were verified to be in place for the site with no construction activities undertaken within the waterway. It is noted that these levels are well within ANZECC criteria (0.9mg/L).

TSS noted to be above trigger levels at:

Stony Creek downstream recorded elevated TSS levels (14mg/L). All controls were verified to be in place for the site with no construction activities undertaken within the waterway. It is noted that these levels are well within ANZECC criteria (40mg/L). A potential source for the elevated levels is unsealed driveways which are located on Rosewood Road, runoff from them may have contributed to the elevated reading.

Wet Sampling Event

An additional "wet" sampling event (>10mm in 24 hours) was undertaken on the 20th February 2017, field testing was undertaken. Results are attached in Appendix A.

Turbidity (NTU) noted to be above trigger levels at:

Nambucca River upstream (111 NTU) and downstream (51.9 NTU). It is noted that levels decreased from upstream to downstream sites and are thus unlikely to be attributed to construction impacts. It is also noted that wind chop along the bank was stirring sediment from the bank up, which may have increased NTU levels to above trigger levels. Testing was undertaken at the lowest point of the tide, which may have also contributed to more sediment being stirred up due to the water level being closer to sediment on the bottom of the Nambucca River.

Dissolved Oxygen (DO) noted to be below trigger levels at:

Stony Creek upstream (0.81mg/L) and downstream (1.99mg/L). It is noted that levels increased from upstream to downstream sites and are unlikely to be attributed to construction impacts. A potential reason for this could be due to the breakdown of vegetative matter flushed into the waterway from the rain event, resulting in decreased DO levels once this entered the waterway.

Lower Warrell Creek downstream (4.42mg/L). All controls were verified to be in place for the site, with no construction activity being undertaken within the waterway. Decaying vegetative matter within the waterway is a possible reason for the slightly low levels.

Conductivity noted to be above trigger levels at:

Lower Warrell Creek upstream (25.5mS/cm) and downstream (26.4mS/cm). All controls were verified to be in place for the site, with no construction activity being undertaken within the waterway.

Dry Sampling Event

A "dry" sampling event was undertaken on the 23rd February 2017, field testing was undertaken. Results are attached in Appendix A.

pH levels noted to be outside of trigger levels at:

Lower Warrell Creek recorded elevated pH levels upstream (7.65) and downstream (7.60). It is noted that levels decreased from upstream to downstream sites and are thus unlikely to be attributed to construction impacts. All controls were in place for the site, with no activities undertaken within the waterway. It is also noted that these levels are within ANZECC criteria (pH 6.5-8.0).

Nambucca River recorded elevated pH levels upstream (8.05) and downstream (8.12). All controls were in place, with no works being undertaken within the waterway. The elevated levels are thus unlikely to be attributable to construction activities. It is noted that the trigger levels for Nambucca River are pH 7, with anything outside of this result being outside of trigger levels.

Turbidity (NTU) noted to be above trigger levels at:

Upper Warrell Creek recorded elevated levels downstream (22.7 NTU). All controls were verified to be in place for the site, with no activities being undertaken within the waterway. Upstream recorded lower levels (8.2 NTU). Readings for the January 2017 dry event showed a similar trend, with upstream recording lower levels than downstream (16.9 NTU upstream, 25.8 NTU downstream).

Stony creek recorded elevated levels downstream (8.0 NTU). All controls were verified to be in place for the site, with no activities being undertaken within the waterway. Upstream recorded lower levels (2.6 NTU). Readings for the January 2017 dry event were 9.6 NTU upstream, 3.3 NTU downstream.

Lower Warrell Creek recorded elevated levels downstream (13.2 NTU). All controls were verified to be in place for the site, with no activities being undertaken within the waterway. Upstream recorded lower levels (2.9 NTU). Readings for the January 2017 dry event also showed an increase from upstream (1.9 NTU) to downstream (5.4 NTU) sites but were within trigger levels.

Nambucca River recorded elevated levels downstream (24.5 NTU). All controls were verified to be in place for the site, with no activities being undertaken within the waterway. It is noted that wind chop was stirring sediment up with the water along the edge of the Nambucca River, which may have contributed to the exceedance. Upstream recorded lower levels (5.44 NTU). Readings for the January 2017 dry

event showed elevated levels for both upstream (44.5 NTU) and downstream (31.2 NTU) sites, with both exceeding trigger levels.

Dissolved Oxygen (DO) noted to be below trigger levels at:

Upper Warrell Creek upstream (0.16mg/L) and downstream (1.87mg/L). All controls were verified to be in place for the site, with no construction activities undertaken within the waterway. The reduced levels may be due to decaying vegetative matter within the waterway. It is also noted that levels increased from upstream to downstream sites and are thus unlikely to be as a result of construction activities.

Stony Creek upstream (1.66mg/L) and downstream (3.42mg/L). All controls were verified to be in place for the site, with no construction activities undertaken within the waterway. The reduced levels may be due to decaying vegetative matter within the waterway. It is also noted that levels increased from upstream to downstream sites and are thus unlikely to be as a result of construction activities.

Lower Warrell Creek upstream (4.40mg/L) and downstream (4.69mg/L). All controls were verified to be in place for the site, with no construction activities undertaken within the waterway. The reduced levels may be due to decaying vegetative matter within the waterway. It is also noted that levels increased from upstream to downstream sites and are thus unlikely to be as a result of construction activities.

Nambucca River upstream (5.44mg/L) and downstream (6.2mg/L). All controls were verified to be in place for the site, with no construction activities undertaken within the waterway. The reduced levels may be due to decaying vegetative matter within the waterway. It is noted that levels increased from upstream to downstream sites and are thus unlikely to be as a result of construction activities. It is also noted that these levels are within ANZECC criteria (5mg/L).

Conductivity was noted to be above trigger levels at:

Stony Creek downstream (0.411mS/cm). All controls were verified to be in place for the site, with no construction activities undertaken within the waterway. It is also noted that these levels are within ANZECC criteria (0.125-2.2mS/cm).

Lower Warrell Creek upstream (29.10mS/cm) and downstream (28.9mS/cm). All controls were verified to be in place for the site, with no construction activities undertaken within the waterway. It is noted that levels decreased from upstream to downstream sites, and are thus unlikely to be as a result of construction activities.

4. Sediment Basin Water Monitoring

Water was released from commissioned sediment basins after rainfall events on the 8th-10th, 14th-16th and 18th-20th February 2017. A statistical correlation has been developed which identified the relationship between Turbidity (NTU) and Total Suspended Solids (TSS) for water quality in the WC2NH Project sediment basins in order to determine the NTU equivalent of 50mg/L TSS. This statistical correlation has been developed to meet EPL Licence No 20533 Condition L2.7 to determine

compliance with the Water and/or Land Concentration Limits Condition L2.4. A positive correlation has been calculated between Total Suspended Solids (TSS) and Turbidity (NTU) (R^2 = 0.5953, p< 0.00001, n=184). The regression equation for the analytical results calculates a turbidity (NTU) value of 124.776 for a TSS value of 50mg/L. A safety factor of 30% has been applied to the NTU result of the correlation, providing a turbidity (NTU) value of 87.3432, rounded to an NTU value of 85. To measure NTU in the field a Horiba U-52G multi-parameter water quality meter has been utilised, which is maintained and calibrated in accordance with manufacturer's specifications. TSS sampling is being undertaken to ensure compliance with 1 in 10 sampling to validate the correlation.

Table 3 below has the water quality results recorded for the water release events:

Table 3 – Water Release Register February 2017

Date	Basin ID	Oil and Grease (visible) (Limit = No visible)	pH (6.5-8.5)	Turbidity (NTU) (Limit <90 NTU)	TSS (mg/L) (Limit <50mg/L)	Approx Volume Discharged (kL)	Comments
3/02/2017	B47.14	N	7.96	15.9		20	
4/02/2017	B49.67	N	7.6	17.7		20	
10/02/2017	B49.67	N	7.45	6.9		20	
10/02/2017	B43.37	N	7.1	77.8		100	
10/02/2017	B49.67	N	7.45	6.9		20	
10/02/2017	B53.03	N	7.91	28	9	200	
10/02/2017	B55.8	N	8.16	69.3		300	
11/02/2017	B45.00	N	7.35	35.2		200	
11/02/2017	B43.75	N	7.94	40.1		400	
11/02/2017	B45.64	N	7.61	50.3		300	
11/02/2017	B53.8	N	8.33	26.2		400	
13/02/2017	B55.17B	N	7.77	63.3	15	80	
13/02/2017	B53.5	N	7.73	19.6		400	
13/02/2017	B55.5	N	8.06	37.6		100	
17/02/2017	B57.7	N	7.21	19.6		150	
20/02/2017	B42.87	N	6.64	51.3		150	
21/02/2017	B53.8	N	8.26	29.3		300	
21/02/2017	B53.03	N	8.18	37.6	5	100	
21/02/2017	B59.85	N	8.01	36.7		300	
21/02/2017	B59.78	N	7.16	46.3		200	

Date	Basin ID	Oil and Grease (visible) (Limit = No visible)	pH (6.5-8.5)	Turbidity (NTU) (Limit <90 NTU)	TSS (mg/L) (Limit <50mg/L)	Approx Volume Discharged (kL)	Comments
21/02/2017	B44.44	N	7.1	55	14	300	
21/02/2017	B49.67	N	7.54	14.2	7	150	
21/02/2017	B45.64	N	7.62	72.9	22	100	
21/02/2017	B49.20	N	8.41	40.1	8	200	
22/02/2017	B49.67	N	6.99	9.4		200	
22/02/2017	B60.87	N	7.83	19.6		150	
22/02/2017	B55.17B	N	6.89	31.6		80	
22/02/2017	B55.8	N	7.81	74.6		400	
22/02/2017	B43.75	N	6.71	63.7	19	250	
22/02/2017	B45.00	N	7.37	49.3		200	
23/02/2017	B58.45	N	7.61	19.6		200	
23/02/2017	B48.46	N	6.79	12.7		50	
23/02/2017	B49.67	N	6.75	19.4		100	
23/02/2017	B49.67	N	6.89	11.4		100	
23/02/2017	B60.3	N	7.01	26.9		100	

5. Noise Monitoring

Monthly routine construction noise monitoring was undertaken on the 16th and 20th of February 2017 at eight locations near to construction works. Monitoring results are available in Appendix A, Table 2.

All sites were within predicted levels for the activity being undertaken or were not the dominant noise source at the nearest residence.

6. Vibration Monitoring

Vibration monitoring was undertaken during vibratory rolling near residents at Old Coast Road on the 21st of February 2017. Monitoring results are contained in Table 5 Appendix A. Results were within limits to avoid building damage (5mm/s).

7. Dust Monitoring

Dust deposition gauges (DDG) were placed at nearby sensitive receivers from 3rd January 2017 to 2nd February 2017. DDG results are available in Appendix A.

All dust deposition gauges were below the level of concern for Total Insoluble Matter (TIM) and Ash Content (AC) (4g/m2.month or increase of 2g/m2/month) during the monitoring period.

Water cart usage outside of standard construction hours has been utilised to assist with reducing dust emissions from the project, during public holidays on Sundays throughout the Project. Pacifico is progressively stabilising cuts and fills that have reached their final profile.

8. Groundwater Monitoring

ACCIONA (Pacifico) have undertaken groundwater monitoring on 24th and 27th of February 2017. Field testing and lab sampling was undertaken. The results from the groundwater monitoring is available in Table 4 of Appendix A.

pH levels noted to be outside of trigger levels at:

4BH037a – Cut 12 (6.70). It is noted that this was only slightly above trigger levels (6.508) and that the bore has been relocated from its original location due to it being within the construction footprint.

Conductivity noted to be outside of trigger levels at:

4BH037a – Fill 15 (9.42mS/cm). It is noted that this bore had to be relocated from its original location due to it being within the construction footprint.

Water depth noted to be outside of trigger levels at:

4BH021 – Cut 11 (8.99m from top of casing slightly above the trigger level of 8.742m from top of casing). It is noted that rainfall has been lower than average for an extended period, and this may have contributed to the low water depth.

, above trigger level of 1.20m from top of casingIt is noted that rainfall has been lower than average for an extended period, and this may have contributed to the low water depth.

9. Acoustic Investigations

Acoustic Investigations (modelling) have been conducted and approved for several Out of Hours Works proposed to model impact on residents during the month of February 2017. A summary of these approvals is below in Table 4.

Table 4 – February Out of Hours Works approved under L4.2 (d) Acoustic Investigation (Modelled)

OOH Request Title	>5dB(A) above background	Approval Date
Old Coast Road North Bridge crane setup	N	1/2/2017
Asphalt plant calibration	N	1/2/2017
Old Coast Road South sealing	N	9/2/2017
Crane demobilisation at Old Coast Road North Bridge	N	9/2/2017
Crane demobilisation Nambucca North Bank of Bridge	N	9/2/2017
Cut 21 long drainage	N	9/2/2017
Cut 21 subsoil installation	N	9/2/2017
Cut 21 SMZ trim	N	9/2/2017
Old Coast Road North Bridge installation of transfloor panels	N	15/2/2017
Piling at quarry access road bridge	N	15/2/2017
Backfill Pergola	N	22/2/2017
Lower Warrell Creek Bridge – Deck Pours	N	22/2/2017
Nambucca River Abutment B Steel Fixing	N	23/2/2017

Other works outside of standard construction hours already approved under section L4.2 (d) of the EPL that took place during February 2017 were:

- Water cart usage over the weekend
- Running of various pumps and generators approved for use in previous months
- Northern Earthworks extended hours in sparsely populated area in the northern zone
- Nambucca River structures concreting works north of Pier 7 approved in previous months
- SMZ conditioning through the northern portion of the Project
- Concreting at Cut 2
- Wet curing in the pergola at cut 2
- Washout concrete paver CC05
- Old Coast Road North Bridge concreting, formworks, steel fixing
- Washing out of tipper trucks
- Refuelling in designated zones
- Floodplain Bridge 2 concreting works
- Old Coast Road North Bridge concreting works

Acoustic Investigations (field monitoring) have been conducted for several Out of Hours Works during the month of February 2017, results are included in Appendix A.

10.Complaints

9.1 Summary of Complaints for the month

No complaints against Acciona Ferrovial for the month of February 2017.

11.Non-Compliance

11.1 Summary of Non-compliances

No Non-Compliances against the ACCIONA Environmental Protection Licence (EPL) 20533 occurred in February 2017

Appendix A – Monitoring Results

Table 1a - Surface Water Sampling Results February 2017 – Wet Event

Location	Units	Levels of Concern		Upper Warrell Creek			Upper Warrell Creek			Stony Creek			Stony Creek			Lower Warrell Creek			Lower Warrell Creek			Unnamed Creek Gumma West			Unnamed Creek Gumma East			Unnamed Creek Gumma North			Nambucca River South			Nambucca River South		
				Upstream			Downstream			Upstream			Downstream			Upstream			Downstream			Upstream			Upstream			Downstream			Upstream			Downstream		
Freshwater / Estuarine		ANZECC 2000 95% species protected		Freshwater			Freshwater			Freshwater			Freshwater			Freshwater			Freshwater			Freshwater			Freshwater			Freshwater			Estuarine			Estuarine		
Date of Sampling				10-Feb-17			10-Feb-17			10-Feb-17			10-Feb-17			10-Feb-17			10-Feb-17			10-Feb-17			10-Feb-17			10-Feb-17			10-Feb-17			10-Feb-17		
Time of Sampling		Freshwater	Marine	12:51 PM			1:04 PM			12:25 PM			12:05 PM			3:44 PM			3:35 PM			2:49 PM			2:35 PM			2:40 PM			15)15			3:07 PM		
Comments																									Unable to sample - water level too low			Unable to sample - water level too low			Wind chop - sediment stirred up			Wind chop - sediment stirred up		
Type				80th %ile	20th %ile	Result	80th %ile	20th %ile	Result	80th %ile	20th %ile	Result	80th %ile	20th %ile	Result	80th %ile	20th %ile	Result	80th %ile	20th %ile	Result	80th %ile	20th %ile	Result	80th %ile	20th %ile	Result	80th %ile	20th %ile	Result	80th %ile	20th %ile	Result	80th %ile	20th %ile	Result
Laboratory data																																				
Metals																																				
Aluminium	mg/L	0.055	-	0.244	0.0162	<0.01	0.194	0.016	<0.01	0.098	0.02	<0.01	0.114	0.01	0.01	0.28	0.01	<0.01	0.28	0.01	<0.01	0.25	0.02	<0.01	0.25	0.02	-	0.25	0.02	-	0.11	0.01	<0.10	0.11	0.01	<0.10
Arsenic	mg/L	0.024	0.0023	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.003	0.002	0.001	0.002	0.001	0.001	0.002	0.001	0.001	0.002	0.002	0.001	0.004	0.002	0.001	-	0.002	0.001	-	0.002	0.001	<0.010	0.002	0.001	<0.010
Cadmium	mg/L	0.0002	0.0055	-	-	<0.0001	-	-	<0.0001	-	-	<0.0001	-	-	<0.0001	0.0002	0.0001	<0.0001	0.0002	0.0001	<0.0001	-	-	<0.0001	-	-	-	-	-	-	-	-	<0.0010	-	-	<0.0010
Chromium	mg/L	0.001	0.0044	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001			<0.001			<0.001	-	-	<0.001	-	-	-	-	-	-	-	-	<0.010	-	-	<0.010
Copper	mg/L	0.0014	0.0013	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001			<0.001			<0.001	0.001	0.001	<0.001	0.001	0.001	-	0.001	0.001	-	0.001	0.001	<0.010	0.001	0.001	<0.010
Lead	mg/L	0.0034	0.0044	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001			<0.001			<0.001	-	-	<0.001	-	-	-	-	-	-	-	-	<0.010	-	-	<0.010
Manganese	mg/L	1.9	0.08	0.3	0.01	0.003	0.158	0.0178	0.001	0.0726	0.0218	0.385	0.083	0.0164	0.115	0.35	0.087	0.292	0.35	0.087	0.284	0.49	0.011	0.104	0.49	0.011	-	0.49	0.011	-	0.076	0.006	<0.010	0.076	0.006	<0.010
Nickel	mg/L	0.011	0.07	-	-	<0.001	-	-	<0.001	-	-	0.001	-	-	0.001	0.0034	0.001	<0.001	0.0034	0.001	0.001	0.002	0.001	<0.001	0.002	0.001	-	0.002	0.001	-	-	-	<0.010	-	-	<0.010
Selenium	mg/L	11	-	-	-	<0.01	-	-	<0.01	-	-	<0.01	-	-	<0.01	-	-	<0.01	-	-	<0.01	-	-	<0.01	-	-	-	-	-	-	-	-	<0.10	-	-	<0.10
Silver	mg/L	0.00005	0.0014	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	-	-	-	-	-	-	<0.010	-	-	<0.010
Zinc	mg/L	0.008	0.015	0.007	0.005	<0.005	0.0062	0.0042	<0.005	0.0064	0.005	<0.005	0.006	0.005	<0.005	0.018	0.005	<0.005	0.018	0.005	<0.005	0.011	0.005	<0.005	0.011	0.005	-	0.011	0.005	-	0.005	0.005	<0.050	0.005	0.005	<0.050
Iron	mg/L	-	-	1.38	0.48	0.63	0.99	0.366	0.3	1.4	0.41	1.35	1.48	0.35	0.98	0.52	0.05	<0.05	0.52	0.05	<0.05	1.65	0.37	1.15	1.65	0.37	-	1.65	0.37	-	0.26	0.05	<0.50	0.26	0.05	<0.50
Mercury	mg/L	0.0006	0.0004	-	-	<0.0001	-	-	<0.0001	-	-	<0.0001	-	-	<0.0001			<0.0001			<0.0001	-	-	<0.0001	-	-	-	-	-	-	-	-	<0.0001	-	-	<0.0001
Total Recoverable Hydrocarbons																																				
Naphthalene	µg/L	16	50	16		NA	16		NA	16		NA	16		NA	16		NA	16		NA	16		NA	16		-	16		-	50		NA	50		NA
C6 - C10 Fraction	µg/L	-	-	-		NA	-		NA	-		NA	-		NA	-		NA	-		NA	-		NA	-		-	-		-	-		NA	-		NA
C6 - C10 Fraction minus BTEX (F1)	µg/L	-	-	-		NA	-		NA	-		NA	-		NA	-		NA	-		NA	-		NA	-		-	-		-	-		NA	-		NA
>C10 - C16 Fraction	µg/L	-	-	-		NA	-		NA	-		NA	-		NA	-		NA	-		NA	-		NA	-		-	-		-	-		NA	-		NA
>C16 - C34 Fraction	µg/L	-	-	-		NA	-		NA	-		NA	-		NA	-		NA	-		NA	-		NA	-		-	-		-	-		NA	-		NA
>C34 - C40 Fraction	µg/L	-	-	-		NA	-		NA	-		NA	-		NA	-		NA	-		NA	-		NA	-		-	-		-	-		NA	-		NA
>C10 - C40 Fraction (sum)	µg/L	-	-	-		NA	-		NA	-		NA	-		NA	-		NA	-		NA	-		NA	-		-	-		-	-		NA	-		NA
>C10 - C16 Fraction minus Naphthalene (F2)	µg/L	-	-	-		NA	-		NA	-		NA	-		NA	-		NA	-		NA	-		NA	-		-	-		-	-		NA	-		NA
BTEX																																				
Benzene	µg/L	950	700	950		NA	950		NA	950		NA	950		NA	950		NA	950		NA	950		NA	950		-	950		-	700		NA	700		NA
Toluene	µg/L	180	180	180		NA	180		NA	180		NA	180		NA	180		NA	180		NA	180		NA	180		-	180		-	180		NA	180		NA
Ethylbenzene	µg/L	80	5	80		NA	80		NA	80		NA	80		NA	80		NA	80		NA	80		NA	80		-	80		-	5		NA	5		NA
m&p-Xylenes	µg/L	-	-	-		NA	-		NA	-		NA	-		NA	-		NA	-		NA	-		NA	-		-	-		-	-		NA	-		NA
o-Xylene	µg/L	350	350	350		NA	350		NA	350		NA	350		NA	350		NA	350		NA	350		NA	350		-	350		-	350		NA	350		NA
Xylenes - Total	µg/L	-	-	-		NA	-		NA	-		NA	-		NA	-		NA	-		NA	-		NA	-		-	-		-	-		NA	-		NA
Sum of BTEX	µg/L	-	-	-		NA	-		NA	-		NA	-		NA	-		NA	-		NA	-		NA	-		-	-		-	-		NA	-		NA
Nutrients																																				
Total Phosphorus	mg/L	0.05	0.03	0.05	0.02	0.07	0.044		0.02	0.03	0.016	0.02	0.034	0.01	0.03	0.04	0.01	<0.05	0.04	0.01	<0.05	0.11	0.03	0.08	0.11	0.03	-	0.11	0.03	-	0.07	0.02	<0.05	0.07	0.02	0.06
Phosphate (reactive phosphorus)	mg/L	-	-	0.01	0.0034	<0.01	0.01	0.004	<0.01	0.018	0.0022	<0.01	0.01	0.003	<0.01	0.011	0.006	<0.01	0.011	0.006	<0.01	0.013	0.005	<0.01	0.013	0.005	-	0.013	0.005	-	0.029	0.01	0.01	0.029	0.01	0.01
																											-			-						
Total Nitrogen	mg/L	0.5	0.3	0.56	0.3	0.6	0.52	0.2	0.4	0.48	0.2	0.4	0.63	0.2	0.4	0.54	0.31	<0.5	0.54	0.31	<0.5	3.1	0.9	1.4	3.1	0.9	-	3.1	0.9	-	0.46	0.2	<0.5	0.46	0.2	<0.5
Total Kjeldahl Nitrogen	mg/L	-	-	0.5	0.3	0.6	0.5	0.2	0.4	0.34	0.2	0.3	0.6	0.2	0.4	0.5	0.2	<0.5	0.5	0.2	<0.5	2.8	0.8	1.4	2.8	0.8	-	2.8	0.8	-	0.3	0.2	<0.5	0.3	0.2	<0.5
																											-			-						
Nitrate	mg/L	0.7	-	0.102	0.01	0.03	0.054	0.01	0.02	0.208	0.01	0.05	0.2	0.01	<0.01	0.05	0.01	<0.01	0.05	0.01	<0.01	0.03	0.01	0.04	0.03	0.01	-	0.03	0.01	-	0.04	0.01	<0.01	0.04	0.01	<0.01
Nitrite	mg/L	-	-	-	-	<0.01	-	-	<0.01	-	-	<0.01	0.02	0.01	<0.01	0.02	0.01	<0.01	0.02	0.01	<0.01	0.02	0.01	<0.01	0.02	0.01	-	0.02	0.01	-	0.02	0.01	<0.01	0.02	0.01	<0.01
Ammonia	mg/L	0.9	-	0.036	0.01	0.03	0.02	0.01	0.06	0.046	0.02	0.03	0.062	0.012	0.05	0.116	0.022	<0.05	0.116	0.022	<0.05	0.06	0.01	0.02	0.06	0.01	-	0.06	0.01	-	0.15	0.024	0.09	0.15	0.024	0.1
TSS																																				
TSS	mg/L	<40	<10	19	5	18	12.8	5	11	14.8	5	10	8.7	5	14	25	5.5	8	25	5.5	7	350	9	17	350	9	-	350	9	-			17			14
Lab Physical data (no field data available)																																				
Temperature	°C	-	-	24.3	16.27	29.68	24.52	16.79	26.78	23.98	17.36	26.15	24.7	17.65	24.10	25.9	19.5	31.38	25.9	19.5	31.23	25.84	19.1	31.05	25.84	19.1	-	25.84	19.1	-	26.56	21.32	30.23	26.56	21.32	30.23
pH	pH	-	6.5-8	7.478	6.23	7.42	7.192	6.42	7.16	7.138	6.61	6.43	6.98	6.21	6.6	6.86	6.46	7.33	6.86	6.46	7.3	6.9	6.08	6.91	6.9	6.08	-	6.9	6.08	-	7.56	6.58	6.8	7.56	6.58	7.05
Conductivity	mS/cm	0.125-2.2	-	0.3204	0.20184	0.248	0.3242	0.19076	0.156	0.313	0.2024	0.255	0.309	0.20188	0.266	20.918	0.50928	26.2	20.918	0.50928	26.1	0.842	0.334	1.12	0.842	0.334	-	0.842	0.334	-	48.42	12.65	45.9	48.42	12.65	46.8
Turbidity	NTU	50	10	26.16	5.94	5.7	27.32	3.72	7.4	14.98	3.34	10.6	17.16	4.59	13.5	26.1	2.4	7.2	26.1	2.4	9.2	66.8	11.6	144	66.8	11.6	-	66.8	11.6	-	19.04	5.81	15.7	19.04	5.81	17.6
Dissolved Oxygen	mg/L	5	5	7.43	1.5	2.76	6.88	2.28	1.5	8.472	5.08	1.26	7.59	2.63	3.44	6.65	5.02	3.88	6.65	5.02	4.96	7.3	1.78	6.95	7.3	1.78	-	7.3	1.78	-	8.47	6.88	6.1	8.47	6.88	6.17
Dissolved Oxygen	%			-		36.6	-		19.7	-		15.8	-		29.7	-		57.5	-		73.6	-		93.9	-		-	-		-	-		97.2	-		98.4
TDS	g/L	-	-	-		0.161	-		0.096	-		0.166	-		0.173	-		16.2	-		16.2	-		0.716	-		-	-		-	-		28.0	-		28.5

Taken from ANZECC guidelines 95% protected species levels where no 80/20 trigger values provided

Taken from alternative trigger levels provided in ANZECC Water Guidelines Volume 1 and Volume 2 where insufficient data was available for 95%

Exceedances of trigger values

Table 1b – Surface Water Results February 2017 – Wet Event

Location	Units	Levels of Concern		Upper Warrell Creek			Upper Warrell Creek			Stony Creek			Stony Creek			Lower Warrell Creek			Lower Warrell Creek			Unnamed Creek Gumma West			Unnamed Creek Gumma East			Unnamed Creek Gumma North			Nambucca River South			Nambucca River South		
				Upstream			Downstream			Upstream			Downstream			Upstream			Downstream			Upstream			Upstream			Downstream			Upstream			Downstream		
Freshwater / Estuarine		ANZECC 2000 95% species protected		Freshwater			Freshwater			Freshwater			Freshwater			Freshwater			Freshwater			Freshwater			Freshwater			Freshwater			Estuarine			Estuarine		
Date of Sampling				20-Feb-17			20-Feb-17			20-Feb-17			20-Feb-17			20-Feb-17			20-Feb-17			20-Feb-17			20-Feb-17			20-Feb-17			20-Feb-17			20-Feb-17		
Time of Sampling		Freshwater	Marine	3:03 PM			2:55 PM			2:37 PM			2:29 PM			1:22 PM			1:17 PM			2:11 PM			1:50 PM			1:45 PM			1:04 PM			12:56 PM		
Comments																									Unable to sample - water level too low			Unable to sample - water level too low			Wind chop - sediment stirred up			Wind chop - sediment stirred up		
Type				80th %ile	20th %ile	Result	80th %ile	20th %ile	Result	80th %ile	20th %ile	Result	80th %ile	20th %ile	Result	80th %ile	20th %ile	Result	80th %ile	20th %ile	Result	80th %ile	20th %ile	Result	80th %ile	20th %ile	Result	80th %ile	20th %ile	Result	80th %ile	20th %ile	Result	80th %ile	20th %ile	Result
Lab Physical data (no field data available)																																			
Temperature	°C	-	-	24.3	16.27	25.86	24.52	16.79	26.92	23.98	17.36	24.09	24.7	17.65	23.31	25.9	19.5	28.67	25.9	19.5	29.48	25.84	19.1	27.23	25.84	19.1	-	25.84	19.1	-	26.56	21.32	29.79	26.56	21.32	29.11
pH	pH	-	6.5-8	7.478	6.23	7	7.192	6.42	7.11	7.138	6.61	6.6	6.98	6.21	6.69	6.86	6.46	6.98	6.86	6.46	6.59	6.9	6.08	6.52	6.9	6.08	-	6.9	6.08	-	7.56	6.58	7.41	7.56	6.58	7.33
Conductivity	mS/cm	0.125-2.2	-	0.3204	0.20184	0.217	0.3242	0.19076	0.244	0.313	0.2024	0.258	0.309	0.20188	0.26	20.918	0.50928	25.5	20.918	0.50928	26.4	0.842	0.334	1.96	0.842	0.334	-	0.842	0.334	-	48.42	12.65	44.9	48.42	12.65	44.8
Turbidity	NTU	50	10	26.16	5.94	9.3	27.32	3.72	16.1	14.98	3.34	6.2	17.16	4.59	12.5	26.1	2.4	3.9	26.1	2.4	10.8	66.8	11.6	256	66.8	11.6	-	66.8	11.6	-	19.04	5.81	111	19.04	5.81	51.9
Dissolved Oxygen	mg/L	5	5	7.43	1.5	0.49	6.88	2.28	2.86	8.472	5.08	0.81	7.59	2.63	1.99	6.65	5.02	5.4	6.65	5.02	4.42	7.3	1.78	7.58	7.3	1.78	-	7.3	1.78	-	8.47	6.88	6.45	8.47	6.88	7.68
Dissolved Oxygen	%			-		6.1	-		36.4	-		9.9	-		23.8	-		76.7	-		63.8	-		97.2	-		-	-		-	-		101.5	-		109.5
TDS	g/L	-	-	-		0.142	-		0.161	-		0.168	-		0.169	-		15.8	-		16.4	-		1.26	-		-	-		-	-		27.4	-		27.3

Taken from ANZECC guidelines 95% protected species levels where no 80/20 trigger values provided

Taken from alternative trigger levels provided in ANZECC Water Guidelines Volume 1 and Volume 2 where insufficient data was available for 95%

Exceedances of trigger values

Table 1c – Surface Water Results February 2017 – Dry Event

Location	Units	Levels of Concern		Upper Warrell Creek			Upper Warrell Creek			Stony Creek			Stony Creek			Lower Warrell Creek			Lower Warrell Creek			Unnamed Creek Gumma West			Unnamed Creek Gumma East			Unnamed Creek Gumma North			Nambucca River South			Nambucca River South		
				Upstream			Downstream			Upstream			Downstream			Upstream			Downstream			Upstream			Upstream			Downstream			Upstream			Downstream		
Freshwater / Estuarine		ANZECC 2000 95% species protected		Freshwater			Freshwater			Freshwater			Freshwater			Freshwater			Freshwater			Freshwater			Freshwater			Freshwater			Estuarine			Estuarine		
Date of Sampling				23-Feb-17			23-Feb-17			23-Feb-17			23-Feb-17			23-Feb-17			23-Feb-17			23-Feb-17			23-Feb-17			23-Feb-17			23-Feb-17			23-Feb-17		
Time of Sampling		Freshwater	Marine	1:20 PM			1:07 PM			12:41 PM			12:28 PM			2:50 PM			2:40 PM			2:02 PM			1:45 PM			1:40 PM			2:28 PM			2:20 PM		
Comments																						Unable to sample - water level too low			Unable to sample - water level too low			Unable to sample - water level too low						Wind chop stirring sediment		
Type				80th %ile	20th %ile	Result	80th %ile	20th %ile	Result	80th %ile	20th %ile	Result	80th %ile	20th %ile	Result	80th %ile	20th %ile	Result	80th %ile	20th %ile	Result	80th %ile	20th %ile	Result	80th %ile	20th %ile	Result	80th %ile	20th %ile	Result	80th %ile	20th %ile	Result	80th %ile	20th %ile	Result
Field Physical data																																			
Temperature	°C	-	-	24.86	14.99	25.44	25.1	16.3	27.32	24.4	16	23.2	26.46	15.94	22.22	27.9	18.4	28.72	27.9	18.4	29.65	26.5	16.3	-	26.5	16.3	-	26.5	16.3	-	27.9	18.1	28.79	27.9	18.1	28.72
pH	pH	-	6.5-8	7.25	6.48	6.68	7.3	6.4	6.97	7.5	6.6	6.71	7.33	6.26	6.75	7.02	6.57	7.65	7.02	6.57	7.6	7	6.1	-	7	6.1	-	7	6.1	-	7	7	8.05	7	7	8.12
Conductivity	mS/cm	0.125-2.2	-	0.316	0.232	0.238	0.348	0.227	0.265	0.348	0.227	0.272	0.3338	0.2168	0.411	20.946	0.679	29.10	20.946	0.679	28.9	0.808	0.4234	-	0.808	0.4234	-	0.808	0.4234	-	47.32	29.44	48.9	47.32	29.44	45.5
Turbidity	NTU	50	10	10.96	4	8.2	9.9	3.5	22.7	9.9	3.5	2.6	5.97	3.74	8	6.82	1.83	2.9	6.82	1.83	13.2	52.78	11.3	-	52.78	11.3	-	52.78	11.3	-	19.3	6.7	5.44	19.3	6.7	24.5
Dissolved Oxygen	mg/L	5	5	4.98	1.91	0.16	4.8	2.6	1.87	4.8	2.6	1.66	6.34	3.52	3.42	7.98	5.07	4.40	7.98	5.07	4.69	6.4	1.75	-	6.4	1.75	-	6.4	1.75	-	9.1	7.4	5.44	9.1	7.4	6.2
Dissolved Oxygen	%			-	-	2	-	-	23.8	-	-	19.9	-	-	40.3	-	-	63.5	-	-	68.6	-	-	-	-	-	-	-	-	-	-	-	85.8	-	-	96.1
TDS	g/L	-	-	-		0.156	-		0.172	-		0.177	-		0.267	-		18.000	-		17.9	-		-	-		-	-		-	-		29.8	-		27.7

Taken from ANZECC guidelines 95% protected species levels where no 80/20 trigger values provided

Taken from alternative trigger levels provided in ANZECC Water Guidelines Volume 1 and Volume 2 where insufficient data was available for 95%

Exceedances of trigger values

Table 2 - Noise Monitoring Results February 2017

Date	Time	Location	Rec ID	NCA	NML	Activity	Predicted levels for activity	LAeq	LAFMAX	LAFMIN	LAF10	LAF50	LAF90	Principal sources/ operations	Construction noise dominant?	Corrective actions	Notes
16/02/2017	2:09 PM	Albert Drive	74	1	50	Cut	62	50.5	76.7	42.8	51.8	49.2	47	Loader	No	NA	Dominant noise highway, birds
20/02/2017	4:46 PM	Cockburns Lane	16	1	50	Cut	65	42.9	65.1	35.1	44.8	42.2	38.4	Excavator	No	NA	Construction not audible. Dominant noise source: highway
20/02/2017	3:30 PM	Bald Hill Rd	197	3	50	Cut	72	49.2	74.2	38.2	48.2	43.5	40.5	Excavator, roller, trucks	No	NA	Dominant noise sources: highway, local traffic
16/02/2017	12:35 PM	Letitia Rd	406	4	59	Cut	74	63	72.5	55	65.4	62.3	59	Water cart, roller, grader, excavator	Yes	NA	Within predicted levels
16/02/2017	12:03 PM	Mattick Rd	442	6	44	Cut	62	44.8	67.8	35.5	46.1	41.4	38.7	Trucks, water cart	No	NA	Dominant noise sources: birds, plane, power tools at residence
20/02/2017	11:35 AM	Nursery Rd	415	4	59	Cut	53	56	80	41	50.8	46.5	44.1	Crane	No	NA	Construction not audible. Dominant noise sources: highway, local traffic
20/02/2017	3:47 PM	Wallace St	148	3	50	Cut	47	64.4	83.8	46.8	64.6	54.9	50.5	Excavator, roller, trucks	No	NA	Construction not audible. Dominant noise sourcess: highway, local traffic
20/02/2017	5:20 PM	Gumma Rd	383	3	50	Bridgeworks	67	50	65.7	40.5	53.5	47.1	44.1	Excavator loading trucks	Yes	NA	Within predicted levels

Table 3 - Dust Monitoring Results January 2017 – February 2017

			DDG ID	DDG1	DDG2	DDG3	DDG4	DDG5	DDG6	DDG6N	DDG7	DDG8	DDG9NE	DDG9E	DDG A1	DDG A2
			Start date of sampling	3/01/2017	3/01/2017	3/01/2017	3/01/2017	3/01/2017	3/01/2017	3/01/2017	3/01/2017	3/01/2017	3/01/2017	3/01/2017	3/01/2017	3/01/2017
			Finish date of sampling	2/02/2017	2/02/2017	2/02/2017	2/02/2017	2/02/2017	2/02/2017	2/02/2017	2/02/2017	2/02/2017	2/02/2017	2/02/2017	2/02/2017	2/02/2017
Analyte	Time Period	Unit	Levels of Concern	LOR												
Ash Content	Current Month	g/m².month	4	0.1	0.3	0.6	0.6	0.5	0.5	1.8	1.2	0.5	0.9	0.3	0.2	----	----
		mg	N/A	1	6	11	11	8	8	32	22	9	16	6	4	----	----
	Previous Month	g/m².month			0.4	1.1	0.4	0.4	0.3	1.5	1.4	1	NA	0.7	0.4	----	----
	Change	g/m².month	Increase of 2		-0.1	-0.5	0.2	0.1	0.2	0.3	-0.2	-0.5	NA	-0.4	-0.2	----	----
Combustible Matter	Current Month	g/m².month	N/A	0.1	0.7	0.5	0.4	0.2	0.2	1.7	0.6	0.5	0.5	0.3	0.3	----	----
		mg	N/A	1	11	9	6	5	4	30	10	8	9	5	4	----	----
Total Insoluble Matter (TIM)	Current Month	g/m².month	4	0.1	1	1.1	1	0.7	0.7	3.5	1.8	1	1.4	0.6	0.5	----	----
		mg	N/A	1	17	20	17	13	12	62	32	17	25	11	8	----	----
	Previous Month	g/m².month		0.1	0.5	3	0.4	0.4	0.3	1.9	2.1	1.3	NA	2.2	1.2	----	----
	Change	g/m².month	Increase of 2	0.1	0.5	-1.9	0.6	0.3	0.4	1.6	-0.3	-0.3	NA	-1.6	-0.7	----	----
Arsenic	Current Month	mg/L		0.001	----	----	----	----	----	----	----	----	----	----	----	<0.001	<0.001
Comments						Ants in gauge			Funnel broken - glass in gauge				Moths in gauge	Beetles in gauge	Bark in gauge	

Table 4 – Groundwater Monitoring Results February 2017

Location	Units	Groundwater Investigation Levels (GILs) from Interpretive Report	4BH007		4BH008		4BH010			4BH011		4BH021			4BH022c			4BH025			4BH026			4BH037a			4BH038			4BH057			4BH058c			4BH061		4BH062	
Cut/Fill			Cut 4 - East (US)		Cut 4 - West (DS)		Cut 6 - West (DS)			Cut 6 - East (US)		Cut 11 - West (DS)			Cut 11 - East (US)			Cut 12 - West (DS)			Cut 12 - East (US)			Fill 15 - West			Fill 15 - East			Cut 17 - West (DS)			Cut 17 - East (US)			Cut 23 - West (US)		Cut 23 - East (DS)	
Date of Sampling			27/02/2017		27/02/2017		27/02/2017			27/02/2017		24/02/2017			27/02/2017			27/02/2017			27/02/2017			27/02/2017			27/02/2017			27/02/2017			24/02/2017			24/02/2017		24/02/2017	
			Trigger levels 80 / 20%ile	Results	Trigger levels 80 / 20%ile	Results	Trigger levels 80 / 20%ile		Results	Trigger levels 80 / 20%ile	Results	Trigger levels 80 / 20%ile		Results	Trigger levels 80 / 20%ile		Results	Trigger levels 80 / 20%ile		Results	Trigger levels 80 / 20%ile (from 4LDBH015)		Results	Trigger levels 80 / 20%ile		Results	Trigger levels 80 / 20%ile		Results	Trigger levels 80 / 20%ile		Results	Trigger levels 80 / 20%ile		Results	Trigger levels 80 / 20%ile	Results	Trigger levels 80 / 20%ile	Results
Comments				DRY		DRY			Water level too low to sample		Unable to sample									DRY			DRY			Ants in casing		Unable to sample			DRY					DRY		DRY	
Field Physical data																																						
Depth to standing water level from TOC	m	-	-	-	-	-	16.802		-	-	-	8.7420		8.99	16.0140		1.73	8.4500		-	14.4820		-	1.2000		1.87	1.3520		-	17.4120		-	13.8440		16.38	-	-	-	-
pH	pH	-	-	-	-	-	6.264	4.736	-	-	-	6.7800	5.8100	6.78	7.0900		5.67	6.7780	6.2080	-	7.34	6.2600	-	6.5080	5.9220	6.70	7.3040	6.7680	-	6.9800	5.2400	-	6.3960	5.5620	6.91	-	-	-	-
Conductivity	mS/cm	-	-	-	-	-	3630.000		-	-	-	111.300		0.127	231.000		3.01	0.342		-	322.000		-	5.550		9.42	8366.000		-	121.100		-	132.660		0.129	-	-	-	-
Temperature	oC	-	-	-	-	-	22.4420		-	-	-	22.3600		21.24	21.1500		24.96	22.6040		-	21.3000		-	25.9820		21.91	22.5600		-	22.8200		-	23.1940		23.81	-	-	-	-
		Exceedance of trigger level																																						

Table 5 – Vibration Monitoring Result February 2017

DATE	TIME	Location	Vector Sum	Comment
[Date]	[Time]		[mm/s]	
2017-02-21	11:04:00	51 OCR	0.203	Background - no roller
2017-02-21	11:05:00	51 OCR	0.194	Background - no roller
2017-02-21	11:32:00	51 OCR	0.212	Background - no roller
2017-02-21	11:33:00	51 OCR	1.209	Roller 100m-30m - heavy vibe
2017-02-21	11:34:00	51 OCR	2.111	Roller 30m - heavy vibe
2017-02-21	11:35:00	51 OCR	2.692	Roller 30m - heavy vibe
2017-02-21	11:36:00	51 OCR	2.707	Roller 30m - heavy vibe
2017-02-21	11:37:00	51 OCR	2.861	Roller 30m - heavy vibe
2017-02-21	11:38:00	51 OCR	1.291	Roller 30m - heavy vibe
2017-02-21	11:39:00	51 OCR	2.712	Roller 30m - heavy vibe
2017-02-21	11:41:00	51 OCR	3.345	Roller 30m - heavy vibe
2017-02-21	11:42:00	51 OCR	1.289	Roller 30m - heavy vibe
2017-02-21	11:43:00	51 OCR	3.226	Roller 30m - heavy vibe
2017-02-21	11:44:00	51 OCR	2.861	Roller 30m - heavy vibe
2017-02-21	11:45:00	51 OCR	3.022	Roller 30m - heavy vibe
2017-02-21	11:46:00	51 OCR	1.64	Roller 30m - heavy vibe
2017-02-21	11:47:00	51 OCR	2.535	Roller 30m - heavy vibe
2017-02-21	12:10:00	53 OCR	1.461	Padfoot roller 30m - heavy vibe
2017-02-21	12:11:00	53 OCR	1.682	Padfoot roller 30m - heavy vibe
2017-02-21	12:12:00	53 OCR	1.854	Padfoot roller 30m - heavy vibe
2017-02-21	12:13:00	53 OCR	1.917	Padfoot roller 30m - heavy vibe
2017-02-21	12:14:00	53 OCR	1.7	Padfoot roller 30m - heavy vibe
2017-02-21	12:15:00	53 OCR	0.26	Background - roller static
2017-02-21	12:16:00	53 OCR	0.257	Background - roller static
2017-02-21	12:17:00	53 OCR	0.207	Background - no roller

Table 6 – Field Monitoring for Out of Hours Works February 2017

Description of Works	**Date**	**Time**	**Location**	**NCA**	**NML**	**Calculated Laeq**	**Distance to receiver (m)**	**Compliant**	**Principal sources/ operations**	**Notes**
Quarry Access Bridge Piling	18/2/2017	1:20pm	Scott's Head Road	3	50	52.8	176	Y	Removal of pile cases, gurney piles	2dB(A) is not discernible from background noise levels.
Backfilling Pergola	25/2/2017	7:30am	Cut 2	1	40	40.4	200	Y	Excavator	

Figure 1 – Acoustic Investigation (Modelling) Results February 2017

SoundAdvice™

Noise Prediction and Management Tool

Noise Impact Assessment Report

Report Details

Report Date:	1/02/2017	*Report Reference:*	BR12 Crane Set up
Company:	Pacifico	*Prepared by:*	N.RUtherford

Proposed Works

Date of Proposed Works:	04/02-12/02	*Time of Proposed Works:*	7am-5pm M-F	*Work Duration:*	
Description of Works					

Noise Prediction Details

Expected Meteorological Conditions

Wind Speed	Strong (16 - 21)	*Wind Direction*	South West
Cloud Cover	Clear	*Temperature (Degrees C)*	10 - 20 ° C
Relative Humidity (%)	< 55%	*Time of Day*	Night (7pm-6am M-F, 4

Proposed Equipment

Location	*Number of Plant*	*Equipment*	*Usage Factor*	*Total Sound Power*
Location 13	1	Crane - Crawler - > 400T	0.25	100
Location 13	3	Prime Movers	0.5	97
Location 13	1	EWP	0.75	88
Location 13	1	Hydraulic Power Pack	0.5	98
Location 13	1	Crane - 50 -100T (160kW)	0.5	101
Location 13	3	LV's	<25%	73

Noise Predictions

Receiver ID	*Criteria*	*Predicted LAeq*	*Exceedance / Risk*	*Magnitude - dB(A)*
518-18 SIDING ROAD, NORTH MACKSVILLE NSW 24	38.0	5.1	No / Type 1	
548-3 COCOS COURT, NAMBUCCA HEADS NSW 24(	44.0	19.2	No / Type 1	
589-10 ALEXANDRA DRIVE, NAMBUCCA HEADS NS\	44.0	26.8	No / Type 1	
611-15 ALEXANDRA DRIVE, NAMBUCCA HEADS NS\	44.0	19.2	No / Type 1	
618-2 BANGALOW DRIVE, NAMBUCCA HEADS NSW	44.0	23.1	No / Type 1	
633-2 ROYALE COURT, NAMBUCCA HEADS NSW 24	44.0	23.1	No / Type 1	

-

Risk:

Type 1 - Complies with assessment criteria
Type 2 - Low Risk - 0 to 2 dB(A) above assessment criteria
Type 3 - Moderate Risk - 2dB(A) to 5dB(A) above assessment criteria
Type 4 - High Risk - More than 5dB(A) above assessment criteria
Notes:

Name:
Date:
Signature:
Position:
Required Mitigation Measures:

SoundAdvice

Noise Prediction and Management Tool

Pacific Highway Upgrade
Warrell Creek to Nambucca Heads
Chainage 52,400 - 54,300

Noise Impact Assessment Report

Report Details

Report Date:	9/02/2017	*Report Reference:*	Sealing OCR sidetrack
Company:	AFJV	*Prepared by:*	JH

Proposed Works

Date of Proposed Works:	2/11/2017	*Time of Proposed Works:*	1-4pm	*Work Duration:*	Saturday afternoon
Description of Works	Sealing works for OCR sidetrack to allow opening to traffic				

Noise Prediction Details

Expected Meteorological Conditions

Wind Speed	Strong (16 - 21)	*Wind Direction*	North East
Cloud Cover	Clear	*Temperature (Degrees C)*	10 - 20 ° C
Relative Humidity (%)	< 55%	*Time of Day*	Extended Hours

Proposed Equipment

Location	*Number of Plant*	*Equipment*	*Usage Factor*	*Total Sound Power*
Location 4	2	Street sweeper-Sweeping with dust suppression	0.25	98
Location 4	1	Asphalt Sprayer 13T	0.5	89
Location 4	4	Ute	<25%	75
Location 3	4	Ute	<25%	75
Location 3	1	Asphalt Sprayer 13T	0.5	89
Location 3	2	Street sweeper-Sweeping with dust suppression	0.25	98

Noise Predictions

Receiver ID	*Criteria*	*Predicted LAeq*	*Exceedance / Risk*	*Magnitude - dB(A)*
398-2 MATTICK ROAD, NORTH MACKSVILLE NSW 2	37.0	5.7	No / Type 1	
402-83 OLD COAST ROAD, NORTH MACKSVILLE NS	48.0	21.9	No / Type 1	
405-4 MATTICK ROAD, NORTH MACKSVILLE NSW 2	37.0	14.4	No / Type 1	
409-122 OLD COAST ROAD, NORTH MACKSVILLE N	37.0	17.8	No / Type 1	
414-18 MATTICK ROAD, NORTH MACKSVILLE NSW	37.0	14.4	No / Type 1	
429-124 OLD COAST ROAD, NORTH MACKSVILLE N	37.0	17.3	No / Type 1	
491-64 MATTICK ROAD, NORTH MACKSVILLE NSW	37.0	17.0	No / Type 1	
499-73 CHAMPIONS LANE, NORTH MACKSVILLE NS	37.0	16.3	No / Type 1	
384-DP205344 BELLEVUE DRIVE, NORTH MACKSVI	48.0	22.2	No / Type 1	
385-47 NURSERY ROAD, NORTH MACKSVILLE NSW	48.0	24.0	No / Type 1	
388-DP654625 NURSERY ROAD, NORTH MACKSVIL	48.0	26.9	No / Type 1	
325-1 GRANDVIEW DRIVE, NORTH MACKSVILLE NS	48.0	17.6	No / Type 1	
397-36 OLD COAST ROAD, NORTH MACKSVILLE NS	48.0	29.5	No / Type 1	
400-51 OLD COAST ROAD, NORTH MACKSVILLE NS	48.0	25.4	No / Type 1	
412-24 LETITIA CLOSE, NORTH MACKSVILLE NSW 2	48.0	29.2	No / Type 1	
406-20 LETITIA CLOSE, NORTH MACKSVILLE NSW 2	48.0	37.7	No / Type 1	
410-19 LETITIA CLOSE, NSW	48.0	30.3	No / Type 1	
486-41 LETITIA CLOSE, NORTH MACKSVILLE NSW 2	48.0	22.7	No / Type 1	
415-143 NURSERY ROAD, NORTH MACKSVILLE NSW	48.0	21.6	No / Type 1	
482-169 NURSERY ROAD, NORTH MACKSVILLE NSW	48.0	22.3	No / Type 1	
31153-LOT 1 PACIFIC HWY, NORTH MACKSVILLE	48.0	41.1	No / Type 1	

Risk:

Type 1 - Complies with assessment criteria

Type 2 - Low Risk - 0 to 2 dB(A) above assessment criteria

Type 3 - Moderate Risk - 2dB(A) to 5dB(A) above assessment criteria

Type 4 - High Risk - More than 5dB(A) above assessment criteria

Name: _____

Date: _____

Signature: _____

Position: _____

Required Mitigation Measures:

SoundAdvice

Noise Prediction and Management Tool

Pacific Highway Upgrade
Warrell Creek to Nambucca Heads
Chainage 54,300 - 56,400

Noise Impact Assessment Report

Report Details

Report Date:	9/02/2017	*Report Reference:*	Crane demob BR12-PCY
Company:	AFJV	*Prepared by:*	JH

Proposed Works

Date of Proposed Works:	2/12/2017	*Time of Proposed Works:*	7am-5pm	*Work Duration:*	Sunday
Description of Works	Demobilisation of crane from BR12 to precast yard				

Noise Prediction Details

Expected Meteorological Conditions

Wind Speed	Strong (16 - 21)	*Wind Direction*	North East
Cloud Cover	Clear	*Temperature (Degrees C)*	10 - 20 ° C
Relative Humidity (%)	< 55%	*Time of Day*	Night (7pm-6am M-F, 4pm-7am Sat, all day Sunday)

Proposed Equipment

Location	*Number of Plant*	*Equipment*	*Usage Factor*	*Total Sound Power*
Location 14	3	Prime mover	<25%	90
Location 14	2	Ute	<25%	75
Location 1	3	Prime mover	<25%	90
Location 1	2	Ute	<25%	75

Noise Predictions

Receiver ID	*Criteria*	*Predicted LAeq*	*Exceedance / Risk*	*Magnitude - dB(A)*
403-247 OLD COAST ROAD, NSW	38.0	11.1	No / Type 1	
405-4 MATTICK ROAD, NORTH MACKSVILLE NSW 2	38.0	26.7	No / Type 1	
411-309 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	15.5	No / Type 1	
414-18 MATTICK ROAD, NORTH MACKSVILLE NSW	38.0	17.1	No / Type 1	
444-198 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	5.6	No / Type 1	
488-DP809906 MATTICK ROAD, NORTH MACKSVIL	38.0	4.1	No / Type 1	
491-64 MATTICK ROAD, NORTH MACKSVILLE NSW	38.0	2.5	No / Type 1	
495-OLD COAST ROAD, NORTH MACKSVILLE NSW	38.0	35.1	No / Type 1	
503-219 FLORENCE WILMONT DRIVE, NAMBUCCA	38.0	4.3	No / Type 1	
514-197 FLORENCE WILMONT DRIVE, NAMBUCCA	38.0	1.5	No / Type 1	
515-3 CHARLES PLACE, NAMBUCCA HEADS NSW 2-	38.0	1.3	No / Type 1	
529-169 FLORENCE WILMONT DRIVE, NAMBUCCA	38.0	1.2	No / Type 1	
M8a-349 OLD COAST ROAD, NORTH MACKSVILLE	38.0	23.9	No / Type 1	

Risk:
Type 1 - Complies with assessment criteria
Type 2 - Low Risk - 0 to 2 dB(A) above assessment criteria
Type 3 - Moderate Risk - 2dB(A) to 5dB(A) above assessment criteria
Type 4 - High Risk - More than 5dB(A) above assessment criteria
Notes:
Weather from AQMP - Capturing closest residents

Name: _____
Date: _____
Signature: _____
Position: _____
Required Mitigation Measures: _____

SoundAdvice

Noise Prediction and Management Tool

Pacific Highway Upgrade
Warrell Creek to Nambucca Heads
Chainage 50,500 - 52,400

Noise Impact Assessment Report

Report Details

Report Date:	9/02/2017	*Report Reference:*	Nambucca north demob crane
Company:	AFJV	*Prepared by:*	JH

Proposed Works

Date of Proposed Works:	11-12/2/17	*Time of Proposed Works:*	6am-7pm Sat, 7am-4pm Sun	*Work Duration:*	Sat+Sun
Description of Works		Demobilisation of crane due to congestion in area			

Noise Prediction Details

Expected Meteorological Conditions

Wind Speed	Strong (16 - 21)	*Wind Direction*	North East
Cloud Cover	Clear	*Temperature (Degrees C)*	10 - 20 ° C
Relative Humidity (%)	< 55%	*Time of Day*	Night (7pm-6am M-F, 4pm-7am Sat, all day Sunday)

Proposed Equipment

Location	*Number of Plant*	*Equipment*	*Usage Factor*	*Total Sound Power*
Location 14	2	Prime mover	0.25	94
Location 14	1	Crane 200 - 300T Lifting load	0.25	99

Noise Predictions

Receiver ID	*Criteria*	*Predicted LAeq*	*Exceedance / Risk*	*Magnitude - dB(A)*
204-46 WALL STREET, MACKSVILLE NSW 2447	39.0	20.2	No / Type 1	
233-95 EAST STREET, MACKSVILLE NSW 2447	39.0	21.5	No / Type 1	
246-57 EAST STREET, MACKSVILLE NSW 2447	39.0	22.9	No / Type 1	
--73 EAST STREET, MACKSVILLE NSW 2447	39.0	22.5	No / Type 1	
394-60 GUMMA ROAD, GUMMA NSW 2447	39.0	27.6	No / Type 1	
386-32 GUMMA ROAD, MACKSVILLE NSW 2447	39.0	31.9	No / Type 1	
383-75 RIVER STREET, MACKSVILLE NSW 2447	39.0	31.7	No / Type 1	
366-65 RIVER STREET, MACKSVILLE NSW 2447	39.0	29.7	No / Type 1	
339-55 RIVER STREET, MACKSVILLE NSW 2447	39.0	27.0	No / Type 1	
355-15 BELLEVUE DRIVE, NORTH MACKSVILLE NSW	46.0	28.0	No / Type 1	
384-DP205344 BELLEVUE DRIVE, NORTH MACKSVI	46.0	31.4	No / Type 1	
385-47 NURSERY ROAD, NORTH MACKSVILLE NSW	46.0	39.8	No / Type 1	
388-DP654625 NURSERY ROAD, NORTH MACKSVIL	46.0	35.8	No / Type 1	
325-1 GRANDVIEW DRIVE, NORTH MACKSVILLE NS	46.0	25.3	No / Type 1	

Risk:
Type 1 - Complies with assessment criteria
Type 2 - Low Risk - 0 to 2 dB(A) above assessment criteria
Type 3 - Moderate Risk - 2dB(A) to 5dB(A) above assessment criteria
Type 4 - High Risk - More than 5dB(A) above assessment criteria
Notes:
Weather from AQMP

Name: _____
Date: _____
Signature: _____
Position: _____
Required Mitigation Measures:

SoundAdvice

Noise Prediction and Management Tool

Pacific Highway Upgrade
Warrell Creek to Nambucca Heads
Chainage 56,400 - 58,400

Noise Impact Assessment Report

Report Details

Report Date:	9/02/2017	*Report Reference:*	Cut 21 Longitudinal drainage
Company:	AFJV	*Prepared by:*	JH

Proposed Works

Date of Proposed Works:	11/2-14/4/2017	*Time of Proposed Works:*	7-4pm	*Work Duration:*	Sat + Sun
Description of Works		Longitudinal drainage installation			

Noise Prediction Details

Expected Meteorological Conditions

Wind Speed	Strong (16 - 21)	*Wind Direction*	East
Cloud Cover	Clear	*Temperature (Degrees C)*	10 - 20 ° C
Relative Humidity (%)	< 55%	*Time of Day*	Night (7pm-6am M-F, 4pm-7am Sat, all day Sunday)

Proposed Equipment

Location	*Number of Plant*	*Equipment*	*Usage Factor*	*Total Sound Power*
Location 7	1	Excavator 20T - 50T - loading	0.5	106
Location 7	1	Trench roller	0.5	106
Location 7	2	Wacker packer	0.5	97

Noise Predictions

Receiver ID	*Criteria*	*Predicted LAeq*	*Exceedance / Risk*	*Magnitude - dB(A)*
426-537 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	16.0	No / Type 1	
490-459 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	31.7	No / Type 1	
492-469 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	23.9	No / Type 1	
493-37 SIDING ROAD, NEWEE CREEK NSW 2447	38.0	18.0	No / Type 1	
495-OLD COAST ROAD, NORTH MACKSVILLE NSW	38.0	36.2	No / Type 1	
496-539 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	23.0	No / Type 1	
497-72 SIDING ROAD, NEWEE CREEK NSW 2447	38.0	19.0	No / Type 1	
501-525 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	24.4	No / Type 1	
503-219 FLORENCE WILMONT DRIVE, NAMBUCCA	38.0	16.6	No / Type 1	
505-1 SIDING ROAD, NORTH MACKSVILLE NSW 24	38.0	27.8	No / Type 1	
514-197 FLORENCE WILMONT DRIVE, NAMBUCCA	38.0	11.3	No / Type 1	
515-3 CHARLES PLACE, NAMBUCCA HEADS NSW 2	38.0	12.1	No / Type 1	
518-18 SIDING ROAD, NORTH MACKSVILLE NSW 2	38.0	22.7	No / Type 1	
529-169 FLORENCE WILMONT DRIVE, NAMBUCCA	38.0	9.0	No / Type 1	
532-23 CHARLES PLACE, NAMBUCCA HEADS NSW	38.0	11.1	No / Type 1	
543-33 CHARLES PLACE, NAMBUCCA HEADS NSW	38.0	8.2	No / Type 1	

Risk:
Type 1 - Complies with assessment criteria
Type 2 - Low Risk - 0 to 2 dB(A) above assessment criteria
Type 3 - Moderate Risk - 2dB(A) to 5dB(A) above assessment criteria
Type 4 - High Risk - More than 5dB(A) above assessment criteria
Notes:
Worst case wind direction

Name:
Date:
Signature:
Position:
Required Mitigation Measures:

SoundAdvice

Noise Prediction and Management Tool

Pacific Highway Upgrade
Warrell Creek to Nambucca Heads
Chainage 56,400 - 58,400

Noise Impact Assessment Report

Report Details

Report Date:	9/02/2017	*Report Reference:*	Cut 21 Subsoil
Company:	AFJV	*Prepared by:*	JH

Proposed Works

Date of Proposed Works:	11/2-14/4/2017	*Time of Proposed Works:*	7-4pm	*Work Duration:*	Sat + Sun
Description of Works		Subsoil drainage installation			

Noise Prediction Details

Expected Meteorological Conditions

Wind Speed	Strong (16 - 21)	*Wind Direction*	East
Cloud Cover	Clear	*Temperature (Degrees C)*	10 - 20 ° C
Relative Humidity (%)	< 55%	*Time of Day*	Night (7pm-6am M-F, 4pm-7am Sat, all day Sunday)

Proposed Equipment

Location	*Number of Plant*	*Equipment*	*Usage Factor*	*Total Sound Power*
Location 7	1	Trencher	0.75	103
Location 7	1	Posttrack	0.5	97
Location 7	1	Excavator <10T - loading	0.25	93

Noise Predictions

Receiver ID	*Criteria*	*Predicted LAeq*	*Exceedance / Risk*	*Magnitude - dB(A)*
426-537 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	11.6	No / Type 1	
490-459 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	27.1	No / Type 1	
492-469 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	19.3	No / Type 1	
493-37 SIDING ROAD, NEWEE CREEK NSW 2447	38.0	13.3	No / Type 1	
495-OLD COAST ROAD, NORTH MACKSVILLE NSW	38.0	31.6	No / Type 1	
496-539 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	18.4	No / Type 1	
497-72 SIDING ROAD, NEWEE CREEK NSW 2447	38.0	14.3	No / Type 1	
501-525 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	20.0	No / Type 1	
503-219 FLORENCE WILMONT DRIVE, NAMBUCCA	38.0	12.4	No / Type 1	
505-1 SIDING ROAD, NORTH MACKSVILLE NSW 24	38.0	23.4	No / Type 1	
514-197 FLORENCE WILMONT DRIVE, NAMBUCCA	38.0	7.5	No / Type 1	
515-3 CHARLES PLACE, NAMBUCCA HEADS NSW 2	38.0	8.3	No / Type 1	
518-18 SIDING ROAD, NORTH MACKSVILLE NSW 2	38.0	18.3	No / Type 1	
529-169 FLORENCE WILMONT DRIVE, NAMBUCCA	38.0	5.6	No / Type 1	
532-23 CHARLES PLACE, NAMBUCCA HEADS NSW	38.0	7.3	No / Type 1	
543-33 CHARLES PLACE, NAMBUCCA HEADS NSW	38.0	5.0	No / Type 1	

Risk:
Type 1 - Complies with assessment criteria
Type 2 - Low Risk - 0 to 2 dB(A) above assessment criteria
Type 3 - Moderate Risk - 2dB(A) to 5dB(A) above assessment criteria
Type 4 - High Risk - More than 5dB(A) above assessment criteria
Notes:
Worst case wind direction

Name:
Date:
Signature:
Position:
Required Mitigation Measures:

SoundAdvice

Noise Prediction and Management Tool

Pacific Highway Upgrade
Warrell Creek to Nambucca Heads
Chainage 56,400 - 58,400

Noise Impact Assessment Report

Report Details

Report Date:	9/02/2017	*Report Reference:*	Cut 21 SMZ
Company:	AFJV	*Prepared by:*	JH

Proposed Works

Date of Proposed Works:	11/2-14/4/2017	*Time of Proposed Works:*	7-4pm	*Work Duration:*	Sat + Sun
Description of Works		SMZ trimming			

Noise Prediction Details

Expected Meteorological Conditions

Wind Speed	Strong (16 - 21)	*Wind Direction*	East
Cloud Cover	Clear	*Temperature (Degrees C)*	10 - 20 ° C
Relative Humidity (%)	< 55%	*Time of Day*	Night (7pm-6am M-F, 4pm-7am Sat, all day Sunday)

Proposed Equipment

Location	*Number of Plant*	*Equipment*	*Usage Factor*	*Total Sound Power*
Location 7	1	Grader	0.75	99
Location 7	1	ooth barrel roller 7T-Dynapac CA15-Moving with al	0.5	111

Noise Predictions

Receiver ID	*Criteria*	*Predicted LAeq*	*Exceedance / Risk*	*Magnitude - dB(A)*
426-537 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	13.7	No / Type 1	
450-459 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	27.8	No / Type 1	
492-469 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	20.3	No / Type 1	
493-37 SIDING ROAD, NEWEE CREEK NSW 2447	38.0	15.7	No / Type 1	
495-OLD COAST ROAD, NORTH MACKSVILLE NSW	38.0	33.1	No / Type 1	
496-539 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	20.0	No / Type 1	
497-72 SIDING ROAD, NEWEE CREEK NSW 2447	38.0	16.9	No / Type 1	
501-525 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	19.8	No / Type 1	
503-219 FLORENCE WILMONT DRIVE, NAMBUCCA	38.0	12.7	No / Type 1	
505-1 SIDING ROAD, NORTH MACKSVILLE NSW 24	38.0	23.7	No / Type 1	
514-197 FLORENCE WILMONT DRIVE, NAMBUCCA	38.0	7.0	No / Type 1	
515-3 CHARLES PLACE, NAMBUCCA HEADS NSW 2	38.0	7.4	No / Type 1	
518-18 SIDING ROAD, NORTH MACKSVILLE NSW 2	38.0	18.1	No / Type 1	
529-169 FLORENCE WILMONT DRIVE, NAMBUCCA	38.0	5.3	No / Type 1	
532-23 CHARLES PLACE, NAMBUCCA HEADS NSW	38.0	6.7	No / Type 1	
543-33 CHARLES PLACE, NAMBUCCA HEADS NSW	38.0	4.1	No / Type 1	

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Risk:

Type 1 - Complies with assessment criteria

Type 2 - Low Risk - 0 to 2 dB(A) above assessment criteria

Type 3 - Moderate Risk - 2dB(A) to 5dB(A) above assessment criteria

Type 4 - High Risk - More than 5dB(A) above assessment criteria

Notes:

Worst case wind direction

Name: _____

Date: _____

Signature: _____

Position: _____

Required Mitigation Measures: _____

SoundAdvice™

Noise Prediction and Management Tool

Noise Impact Assessment Report

Report Details

Report Date:	10/02/2017	*Report Reference:*	Bearing Pad Preparatio
Company:	Pacifico	*Prepared by:*	N.Rutherford

Proposed Works

Date of Proposed Works:	14-18 March	*Time of Proposed Works:*	6-9pm	*Work Duration:*	
Description of Works					

Noise Prediction Details

Expected Meteorological Conditions

Wind Speed	Strong (16 - 21)	*Wind Direction*	North East
Cloud Cover	Clear	*Temperature (Degrees C)*	20 - 30 ° C
Relative Humidity (%)	< 55%	*Time of Day*	Night (7pm-6am M-F, 4

Proposed Equipment

Location	*Number of Plant*	*Equipment*	*Usage Factor*	*Total Sound Power*
Location 13	1	Air Compressor	0.5	90
Location 13	3	Power Tools	0.5	91
Location 13	2	Rattle Gun	0.5	97
Location 13	2	Daymakers (Tower lights)	1	93
Location 13	5	LV's	<25%	75
Location 13	1	Scabbler	0.5	96
Location 13	2	Small Generator	0.75	93

Noise Predictions

Receiver ID	*Criteria*	*Predicted LAeq*	*Exceedance / Risk*	*Magnitude - dB(A)*
--273 UPPER WARRELL CREEK ROAD, CONGARINNI	40.0	4.9	No / Type 1	
74-73 ALBERT DRIVE, WARRELL CREEK NSW 2447	40.0	13.1	No / Type 1	
81-40 ALBERT DRIVE, DONNELLYVILLE NSW 2447	40.0	21.3	No / Type 1	
89-33 O'DELLS ROAD, DONNELLYVILLE NSW 2447	40.0	5.3	No / Type 1	
93-8 MAIN STREET, DONNELLYVILLE NSW 2447	40.0	9.9	No / Type 1	
97-4723 PACIFIC HIGHWAY, DONNELLYVILLE NSW 2	40.0	16.1	No / Type 1	
100-17 ALBERT DRIVE, DONNELLYVILLE NSW 2447	40.0	11.3	No / Type 1	
101-DP1072289, HENRYS LANE, WARRELL CREEL NS	36.0	3.1	No / Type 1	
103-11 ALBERT DRIVE, DONNELLYVILLE NSW 2447	40.0	10.9	No / Type 1	
163-4 SCOTTS HEAD ROAD, WAY WAY NSW 2447	40.0	22.2	No / Type 1	
115-35 MAIN STREET, DONNELLYVILLE NSW 2447	40.0	10.0	No / Type 1	
151-72 SCOTTS HEAD ROAD, WAY WAY NSW 2447	40.0	6.1	No / Type 1	
112-4 SCOTTS HEAD ROAD, WAY WAY NSW 2447	40.0	16.5	No / Type 1	

Risk:

Type 1 - Complies with assessment criteria
Type 2 - Low Risk - 0 to 2 dB(A) above assessment criteria
Type 3 - Moderate Risk - 2dB(A) to 5dB(A) above assessment criteria
Type 4 - High Risk - More than 5dB(A) above assessment criteria

Notes:

Name: _____
Date: _____
Signature: _____
Position: _____
Required Mitigation Measures: _____

SoundAdvice™

Noise Prediction and Management Tool

Noise Impact Assessment Report

Report Details

Report Date:	15/02/2017	*Report Reference:*	Transfloor Panel Install
Company:	Pacifico	*Prepared by:*	N.Rutherford

Proposed Works

Date of Proposed Works:	18-19/2	*Time of Proposed Works:*	7am-5pm Sat and Sun	*Work Duration:*	
Description of Works					

Noise Prediction Details

Expected Meteorological Conditions

Wind Speed	Strong (16 - 21)	*Wind Direction*	North East
Cloud Cover	Clear	*Temperature (Degrees C)*	20 - 30 ° C
Relative Humidity (%)	< 55%	*Time of Day*	Night (7pm-6am M-F, 4

Proposed Equipment

Location	*Number of Plant*	*Equipment*	*Usage Factor*	*Total Sound Power*
Location 13	1	Crane 200 - 300T Lifting load	0.5	102
Location 13	1	Prime Mover Trucks	0.5	110
Location 13	1	EWP	0.75	88
Location 13	3	LVs	<25%	75

Noise Predictions

Receiver ID	*Criteria*	*Predicted LAeq*	*Exceedance / Risk*	*Magnitude - dB(A)*
518-18 SIDING ROAD, NORTH MACKSVILLE NSW 24	38.0	15.2	No / Type 1	
548-3 COCOS COURT, NAMBUCCA HEADS NSW 244	44.0	24.8	No / Type 1	
589-10 ALEXANDRA DRIVE, NAMBUCCA HEADS NSV	44.0	26.5	No / Type 1	
611-15 ALEXANDRA DRIVE, NAMBUCCA HEADS NSV	44.0	24.4	No / Type 1	
618-2 BANGALOW DRIVE, NAMBUCCA HEADS NSW	44.0	22.5	No / Type 1	
633-2 ROYALE COURT, NAMBUCCA HEADS NSW 24	44.0	22.5	No / Type 1	

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Risk:

Type 1 - Complies with assessment criteria
Type 2 - Low Risk - 0 to 2 dB(A) above assessment criteria
Type 3 - Moderate Risk - 2dB(A) to 5dB(A) above assessment criteria
Type 4 - High Risk - More than 5dB(A) above assessment criteria

Notes:

Name:
Date:
Signature:
Position:
Required Mitigation Measures:

SoundAdvice

Noise Prediction and Management Tool

Noise Impact Assessment Report

Report Details

Report Date:	15/02/2017	*Report Reference:*	Piling Rig Decommissio
Company:	Pacifico	*Prepared by:*	N.Rutherford

Proposed Works

Date of Proposed Works:	18/02/17	*Time of Proposed Works:*	1-4pm	*Work Duration:*	
Description of Works					

Noise Prediction Details

Expected Meteorological Conditions

Wind Speed	Strong (16 - 21)	*Wind Direction*	North East
Cloud Cover	Mostly Overcast	*Temperature (Degrees C)*	20 - 30 ° C
Relative Humidity (%)	65 - 75%	*Time of Day*	Extended Hours

Proposed Equipment

Location	*Number of Plant*	*Equipment*	*Usage Factor*	*Total Sound Power*
Location 13	1	Crane - 50 -100T (160kW)	0.75	103
Location 13	1	Excavator 20T - 50T - loading	0.75	108
Location 13	1	EWP	0.75	88
Location 13	1	Compressor	0.75	99
Location 13	1	Bored Piling Rig	0.75	104
Location 13	1	Pressure Cleaner	0.75	99
Location 13	2	LV's	<25%	75

Noise Predictions

Receiver ID	*Criteria*	*Predicted LAeq*	*Exceedance / Risk*	*Magnitude - dB(A)*
--273 UPPER WARRELL CREEK ROAD, CONGARINNI	45.0	5.5	No / Type 1	
74-73 ALBERT DRIVE, WARRELL CREEK NSW 2447	45.0	14.0	No / Type 1	
81-40 ALBERT DRIVE, DONNELLYVILLE NSW 2447	45.0	22.3	No / Type 1	
89-33 O'DELLS ROAD, DONNELLYVILLE NSW 2447	45.0	5.9	No / Type 1	
93-8 MAIN STREET, DONNELLYVILLE NSW 2447	45.0	10.8	No / Type 1	
97-4723 PACIFIC HIGHWAY, DONNELLYVILLE NSW 2	45.0	17.4	No / Type 1	
100-17 ALBERT DRIVE, DONNELLYVILLE NSW 2447	45.0	12.3	No / Type 1	
101-DP1072289, HENRYS LANE, WARRELL CREEL N	40.0	3.5	No / Type 1	
103-11 ALBERT DRIVE, DONNELLYVILLE NSW 2447	45.0	12.0	No / Type 1	
163-4 SCOTTS HEAD ROAD, WAY WAY NSW 2447	45.0	25.7	No / Type 1	
115-35 MAIN STREET, DONNELLYVILLE NSW 2447	45.0	11.0	No / Type 1	
151-72 SCOTTS HEAD ROAD, WAY WAY NSW 2447	45.0	13.3	No / Type 1	
112-4 SCOTTS HEAD ROAD, WAY WAY NSW 2447	45.0	24.6	No / Type 1	

Risk:

Type 1 - Complies with assessment criteria
Type 2 - Low Risk - 0 to 2 dB(A) above assessment criteria
Type 3 - Moderate Risk - 2dB(A) to 5dB(A) above assessment criteria
Type 4 - High Risk - More than 5dB(A) above assessment criteria

Notes:

Name: _____
Date: _____
Signature: _____
Position: _____
Required Mitigation Measures:

SoundAdvice

Noise Prediction and Management Tool

Pacific Highway Upgrade
Warrell Creek to Nambucca Heads
Chainage 41,750 - 45,100

Noise Impact Assessment Report

Report Details

Report Date:	22/02/2017	*Report Reference:*	Backfilling pergola
Company:	AFJV	*Prepared by:*	JH

Proposed Works

Date of Proposed Works:	25/2-5/3	*Time of Proposed Works:*	7am-5pm	*Work Duration:*	Sat, Sun
Description of Works		Backfilling of pergola abutments			

Noise Prediction Details

Expected Meteorological Conditions

Wind Speed	Strong (16 - 21)	*Wind Direction*	North East
Cloud Cover	Clear	*Temperature (Degrees C)*	10 - 20 ° C
Relative Humidity (%)	< 55%	*Time of Day*	Night (7pm-6am M-F, 4pm-7am Sat, all day Sunday)

Proposed Equipment

Location	*Number of Plant*	*Equipment*	*Usage Factor*	*Total Sound Power*
Location 5	1	Excavator <10T - loading	0.25	93
Location 5	1	Excavator 20T - 50T - loading	0.25	103
Location 5	1	9T dumper	0.25	97
Location 5	1	Isteer 850kg-Bobcat S185 Skid Steer Loader-Moving	0.5	110
Location 5	1	Trench rammer	0.25	94
Location 5	2	Truck and Dog - Moving	0.5	105

Noise Predictions

Receiver ID	*Criteria*	*Predicted LAeq*	*Exceedance / Risk*	*Magnitude - dB(A)*
1-760 UPPER WARRELL CREEK ROAD, CONGARINNI	40.0	8.3	No / Type 1	
3-800 UPPER WARRELL CREEK ROAD, CONGARINNI	40.0	8.5	No / Type 1	
4-4201 PACIFIC HIGHWAY, EUNGAI CREEK NSW 24	40.0	18.3	No / Type 1	
5-464 BROWNS CROSSING ROAD, WARRELL CREEK	40.0	18.5	No / Type 1	
6-4227 PACIFIC HIGHWAY, CONGARINNI NSW 2447	40.0	18.9	No / Type 1	
10-4317 PACIFIC HIGHWAY, WARRELL CREEK NSW	40.0	10.6	No / Type 1	
11-4263 PACIFIC HIGHWAY, CONGARINNI NSW 244	40.0	24.3	No / Type 1	
12-4371 PACIFIC HIGHWAY, WARRELL CREEK NSW	40.0	4.2	No / Type 1	
16-DP755562, COCKBURNS LANE, WARRELL CREEK	40.0	26.1	No / Type 1	
19-73 COCKBURNS LANE, WARRELL CREEK NSW 24	40.0	30.4	No / Type 1	
22-4411 PACIFIC HIGHWAY, WARRELL CREEK NSW	40.0	2.9	No / Type 1	
39-4476 PACIFIC HIGHWAY, WARRELL CREEK NSW	40.0	1.7	No / Type 1	
45-4390 PACIFIC HIGHWAY, WARRELL CREEK NSW	40.0	3.2	No / Type 1	
51-196 ALBERT DRIVE, WARRELL CREEK NSW 2447	40.0	1.3	No / Type 1	
55-4478 PACIFIC HIGHWAY, WARRELL CREEK NSW	40.0	1.7	No / Type 1	
59-46 ROSEWOOD ROAD, WARRELL CREEK NSW 24	40.0	1.5	No / Type 1	
60-180 ROSEWOOD ROAD, WARRELL CREEK NSW 2	36.0	7.2	No / Type 1	
64-69 ROSEWOOD ROAD, WARRELL CREEK NSW 24	36.0	1.2	No / Type 1	
66-174 ROSEWOOD ROAD, WARRELL CREEK NSW 2	36.0	2.9	No / Type 1	
68-91 ROSEWOOD ROAD, WARRELL CREEK NSW 24	36.0	10.6	No / Type 1	

Risk:

Type 1 - Complies with assessment criteria
Type 2 - Low Risk - 0 to 2 dB(A) above assessment criteria
Type 3 - Moderate Risk - 2dB(A) to 5dB(A) above assessment criteria
Type 4 - High Risk - More than 5dB(A) above assessment criteria

Notes:
Name:
Date:
Signature:
Position:
Required Mitigation Measures:

SoundAdvice

Noise Prediction and Management Tool

Pacific Highway Upgrade
Warrell Creek to Nambucca Heads
Chainage 47,700 - 49,300

Noise Impact Assessment Report

Report Details

Report Date:	22/02/2017	*Report Reference:*	LWC deck pours + reo
Company:	AFJV	*Prepared by:*	Jack H

Proposed Works

Date of Proposed Works:	23/2-30/6/2017	*Time of Proposed Works:*	4-7am,6-7pm M-F, 7-8am,1-4pm Sa	*Work Duration:*	During bridge works
Description of Works		Deck pours and reo fixing at LWC bridge			

Noise Prediction Details

Expected Meteorological Conditions

Wind Speed	Strong (16 - 21)	*Wind Direction*	East
Cloud Cover	Clear	*Temperature (Degrees C)*	10 - 20 ° C
Relative Humidity (%)	< 55%	*Time of Day*	Night (7pm-6am M-F, 4pm-7am Sat, all day Sunday)

Proposed Equipment

Location	*Number of Plant*	*Equipment*	*Usage Factor*	*Total Sound Power*
Location 3	1	EWP	0.5	90
Location 3	1	EWP	0.5	90
Location 3	3	Concrete poker vibrator	0.25	90
Location 4	3	Concrete poker vibrator	0.25	90
Location 3	2	Small tools	0.25	88
Location 4	2	Small tools	0.25	88
Location 4	1	Vibrating screed	0.25	98
Location 3	1	Vibrating screed	0.25	98
Location 4	1	Concrete Pump + Cement Mixer Truck 8 t / 350 bar	0.5	93
Location 3	1	Concrete Pump + Cement Mixer Truck 8 t / 350 bar	0.5	93

Noise Predictions

Receiver ID	*Criteria*	*Predicted LAeq*	*Exceedance / Risk*	*Magnitude - dB(A)*
112-4 SCOTTS HEAD ROAD, WAY WAY NSW 2447	40.0	24.5	No / Type 1	
117-15 REID STREET, MACKSVILLE NSW 2447	39.0	16.9	No / Type 1	
131-DP826440, HARRIMANS LANE, MACKSVILLE N	39.0	18.2	No / Type 1	
148-1 REID STREET, MACKSVILLE NSW 2447	39.0	15.4	No / Type 1	
151-72 SCOTTS HEAD ROAD, WAY WAY NSW 2447	40.0	35.5	No / Type 1	
155-26 HARRIMANS LANE, MACKSVILLE NSW 244	39.0	19.1	No / Type 1	
163-4 SCOTTS HEAD ROAD, WAY WAY NSW 2447	40.0	38.4	No / Type 1	
175-34 HARRIMANS LANE, NSW	39.0	19.6	No / Type 1	
180-58 HARRIMANS LANE, MACKSVILLE NSW 244	39.0	19.0	No / Type 1	
186-41 BALD HILL ROAD, MACKSVILLE NSW 2447	39.0	10.7	No / Type 1	
192-38 KERR DRIVE, MACKSVILLE NSW 2447	39.0	5.2	No / Type 1	
193-KERR DRIVE, MACKSVILLE NSW 2447	39.0	17.3	No / Type 1	
194-DP1014123, KERR DRIVE, MACKSVILLE NSW 2	39.0	22.2	No / Type 1	
197-54 BALD HILL ROAD, MACKSVILLE NSW 2447	39.0	15.4	No / Type 1	
261-13 CONNORS CRESCENT, MACKSVILLE NSW 24	39.0	14.4	No / Type 1	
266-2 AINSWORTH CLOSE, MACKSVILLE NSW 244	39.0	14.2	No / Type 1	
302-98 BALD HILL ROAD, MACKSVILLE NSW 2447	39.0	11.2	No / Type 1	
342-228 SCOTTS HEAD ROAD, WAY WAY NSW 244	36.0	11.2	No / Type 1	

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Risk:

Type 1 - Complies with assessment criteria

Type 2 - Low Risk - 0 to 2 dB(A) above assessment criteria

Type 3 - Moderate Risk - 2dB(A) to 5dB(A) above assessment criteria

Name: _____

Date: _____

Signature: _____

Position: _____

Required Mitigation Measures:

SoundAdvice

Noise Prediction and Management Tool

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Noise Impact Assessment Report

Report Details

Report Date:	23/02/2017	*Report Reference:*	Steel Fixing on Abut B A
Company:	Pacifico	*Prepared by:*	N.Rutherford

Proposed Works

Date of Proposed Works:	23/2-25/2	*Time of Proposed Works:*	6pm-6am	*Work Duration:*	
Description of Works					

Noise Prediction Details

Expected Meteorological Conditions

Wind Speed	Strong (16 - 21)	*Wind Direction*	North East
Cloud Cover	Clear	*Temperature (Degrees C)*	10 - 20 ° C
Relative Humidity (%)	< 55%	*Time of Day*	Night (7pm-6am M-F, 4

Proposed Equipment

Location	*Number of Plant*	*Equipment*	*Usage Factor*	*Total Sound Power*
Location 2	2	Daymakers (Tower lights)	1	93
Location 2	1	Vacuum Cleaner	0.75	99
Location 2	1	Generator 2.5kV	1	94
Location 2	1	Circular Saw	0.75	103

Noise Predictions

Receiver ID	*Criteria*	*Predicted LAeq*	*Exceedance / Risk*	*Magnitude - dB(A)*
388-2 MATTICK ROAD, NORTH MACKSVILLE NSW 2	38.0	5.6	No / Type 1	
402-83 OLD COAST ROAD, NORTH MACKSVILLE NSI	46.0	20.0	No / Type 1	
405-4 MATTICK ROAD, NORTH MACKSVILLE NSW 2	38.0	13.5	No / Type 1	
409-122 OLD COAST ROAD, NORTH MACKSVILLE N:	38.0	16.0	No / Type 1	
414-18 MATTICK ROAD, NORTH MACKSVILLE NSW	38.0	13.2	No / Type 1	
429-124 OLD COAST ROAD, NORTH MACKSVILLE N:	38.0	15.3	No / Type 1	
491-64 MATTICK ROAD, NORTH MACKSVILLE NSW	38.0	13.4	No / Type 1	
499-73 CHAMPIONS LANE, NORTH MACKSVILLE NS	38.0	14.1	No / Type 1	
384-DP205844 BELLEVUE DRIVE, NORTH MACKSVI	46.0	32.8	No / Type 1	
385-47 NURSERY ROAD, NORTH MACKSVILLE NSW	46.0	35.0	No / Type 1	
388-DP654625 NURSERY ROAD, NORTH MACKSVILI	46.0	38.1	No / Type 1	
325-1 GRANDVIEW DRIVE, NORTH MACKSVILLE NS'	46.0	27.0	No / Type 1	
397-36 OLD COAST ROAD, NORTH MACKSVILLE NSI	46.0	26.6	No / Type 1	
400-51 OLD COAST ROAD, NORTH MACKSVILLE NSI	46.0	23.1	No / Type 1	
412-24 LETITIA CLOSE, NORTH MACKSVILLE NSW 2-	46.0	27.3	No / Type 1	
406-20 LETITIA CLOSE, NORTH MACKSVILLE NSW 2-	46.0	29.5	No / Type 1	
410-19 LETITIA CLOSE, NSW	46.0	25.5	No / Type 1	
486-41 LETITIA CLOSE, NORTH MACKSVILLE NSW 2-	46.0	19.9	No / Type 1	
415-149 NURSERY ROAD, NORTH MACKSVILLE NSW	46.0	22.6	No / Type 1	
482-169 NURSERY ROAD, NORTH MACKSVILLE NSW	46.0	23.2	No / Type 1	
31153-LOT 1 PACIFIC HWY, NORTH MACKSVILLE	46.0	45.9	No / Type 1	

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Risk:

Type 1 - Complies with assessment criteria
Type 2 - Low Risk - 0 to 2 dB[A] above assessment criteria
Type 3 - Moderate Risk - 2dB[A] to 5dB[A] above assessment criteria
Type 4 - High Risk - More than 5dB[A] above assessment criteria

Notes:

Name:
Date:
Signature:
Position:
Required Mitigation Measures:

Transport Roads & Maritime Services

Construction Noise Estimator

Please input information into yellow cells
Please pick from drop-down list in orange cells

Project name	WC2NH
Scenario name	Set up of Asphalt Plant
Receiver address	73 Albert Drive
Select area ground type	Undeveloped green fields (rural areas with isolated dwellings)
Select type of background noise level input	User Input

Noise area category		Representative Noise Environment	User Input
RBL or L_{A90} Background level (dB(A))	Day		40
	Evening		40
	Night		35
$L_{Aeq(15minute)}$ Noise mangement level (dB(A))	Day		50
	Day (OOHW)		45
	Evening		45
	Night		40

Is all plant at the same representative distance to the receiver? Y/N	Y
Representative distance (m)	330

All at Representative Distance

Steps:
1. Enter project name (cell C9).
2. Enter scenario name (cell C10).
3. Enter receiver address (cell C11).
4. Select area ground type (cell C12) - water, undeveloped green fields (e.g. rural areas with isolated dwellings) or developed settlements (e.g. urban and suburban areas)
5. Select the type of background noise level input - 'Representative noise environment (to make assumptions) or user input (where noise monitoring data is available):
   (a) where representative noise environment is selected - select the appropriate noise area category (cell C16). The worksheet titled 'Representative Noise Environ.' provides a number of examples to help select the noise area category.
   (b) where user input is selected - enter the measured background noise level for each time period (cells D17 to D19).
6. Is all plant at the same representative distance to the receiver? Select 'Y' or 'N (cell C24):
   (a) where 'Y' is selected - enter the representative distance in cell C25.
   (b) where 'N' is selected - go to step #7
7. For the scenario (e.g. shallow excavation), select plant from the drop-down list in cells A28 to A47 (e.g. dump trucks + excavator).
   (a) enter quantity for each selected plant in cells D28 to D47.
   (b) where 'N' is selected from step #6 - enter the distance to receiver for each individual plant in cells E28 to E47.
   (c) is there line of sight to receiver? select from drop down list in cells F28 to F47. Solid barrier can be in the form of road cutting, solid construction hoarding, acoustic curtain, timber lapped and capped fence, shipping container, site office, etc. Please note that vegetation and trees are not considered to be a form of solid barrier.
8. Identify the level above background and/or noise mangement level (see rows 57 to 62).
9. Identify and implement standard mitigation measures where feasible and reasonable. Include any shielding implemented as part of the standard mitigation measures by changing the selection 'in the 'Is there line of sight to receiver' drop-down list.
10. Identify and implement feasible and reasonable additional mitigation measures (see rows 63 to 65).
11. Document a summary report detailing:
   (a) project description (including location, duration, hours of work, construction methodology, plant , potentially impacted receivers, etc.).
   (b) background noise levels.
   (c) noise management levels.
   (d) predicted noise levels for each time period.
   (e) sleep disturbance affected distance for night works.
   (f) mitigation measures.
   (g) team member responsible for implementing mitigation measures and managing noise and vibration.

Type/ model plant (See Sources Sheet)	SWL L_{Aeq} (dB(A))	SPL @7m (dB(A))	Quantity	Individual distance to receiver (m)	Is there line of sight to receiver? Y/N	Quantity correction (dB(A))	Shielding correction (dB(A))	Distance used in calculation (m)	Contribution SPL (dB(A))
Light Vehicles (eg 4WD)	103	78	1	330	No (behind solid barrier)	0	-5	330	31
Generator	103	78	1	330	No (behind solid barrier)	0	-5	330	31
Small Hand Tools	105	80	2	330	Yes	3	0	330	41
					Yes	0	0		-888
					Yes	0	0		-888
					Yes	0	0		-888
					Yes	0	0		-888
					Yes	0	0		-888
					Yes	0	0		-888
					Yes	0	0		-888
					Yes	0	0		-888
					Yes	0	0		-888
					Yes	0	0		-888
					Yes	0	0		-888
					Yes	0	0		-888
					Yes	0	0		-888
					Yes	0	0		-888
					Yes	0	0		-888
					Yes	0	0		-888
					Yes	0	0		-888

Total SPL $L_{Aeq(15minute)}$ (dB(A))	41

		Residential receiver	Non-residential receivers: Classroom at schools and other educational institutions	Hospital wards and operating theatres	Place of worship	Active recreation	Passive recreation	Industrial premise	Offices, retail outlets
Noise Management Level (dB(A))	Standard hours	50	55	65	55	65	60	75	70
	Day (OOHW)	45	55	65	55	65	60	75	70
	OOHW Period 1	45		65	55	65	60	75	70
	OOHW Period 2	40		65	55			75	70
Level above background (dB(A))	Standard hours	!							
	Day (OOHW)	!							
	OOHW Period 1	!							
	OOHW Period 2	!							
Level above NML (dB(A))	Standard hours								
	Day (OOHW)								
	OOHW Period 1								
	OOHW Period 2	!							
Additional mitigation measures	Standard Hours	-	-	-	-	-	-	-	-
	Day (OOHW)	-	-	-	-	-	-	-	-
	OOHW Period 1	-		-	-	-	-	-	-
	OOHW Period 2	N		-	-			-	-

Abbreviation	Measure