

Warrell Creek to Nambucca Heads – Pacific Highway Upgrade Project

ENVIRONMENT PROTECTION AUTHORITY MONTHLY REPORT

January 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

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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 January 2017 were limited to 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
- Installation of monitoring instruments settlement plates
- 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

Works scheduled for next month include

- Earthworks including crushing
- Installation and commissioning of second concrete batch plant in the southern portion of the Project

- Installation and commissioning of Asphalt Batch plant in the Albert Drive compound site
- 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)

1.2 Consultation Activities

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

Groups	Date	Key Topics
Environmental Review Group	17 January 2017	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. good housekeeping prior to Christmas shutdown, and also a thank you for good work all year.
North Facing Ramps group	10am Monday tri-weekly – sessions held 9 and 30 January 2017	Three week look-ahead for construction activities and general project discussion.

Table 1 – Consultation Activities

Other Consultation Activities:

- Consulted and logged any issues from 9 property owners regarding change in use of stockpile area at Gate 3 to temporary rock crushing activity from late February
- Distributed notification for new Albert Drive bridge opening and bus stop relocation (twice, following date change)

- Distributed notification to more than 1100 properties for Scotts Head Road traffic stoppages due to girder lifts for Lower Warrell Creek bridge (twice, following date change)
- Issued 10 x text messages to up to 145 community members, and emergency/essential services personnel during week of traffic stoppages (associated with previous point, girder lifts)
- Gained agreement from 5 residents for Bald Hill Road out of hours concreting and broader notification to 60 other residents
- Gained agreement from 7 residents for Nambucca River bridge out of hours concreting, with further notifications distributed to 20 residents
- Gained agreement from 2 residents for out of hours for Upper Warrell Creek bridgeworks
- Distributed responses to seven individuals who provided submissions in relation to the southern compound temporary asphalt plant
- Ongoing and timely notifications and traffic alerts for night time girder deliveries through Macksville in early January

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:

- Recommence North Facing Ramps regular roadside community meetings from 9 January (tri-weekly)
- Announce RMS approval to community for construction of asphalt plant
- Notify traffic diversion for Bald Hill Road
- Seek one agreement and then more broadly notify regarding out of hours for northern batch plant
- Seek agreements for two out of hours line-marking activities for mid-February
- Seek agreements for out of hours work for the southern compound temporary asphalt plant
- Quarry access Pacific Highway girder lift communications plan and notifications
- Signposting communications plan (tie into mid-year Community Information Sessions)
- Identify community groups for specific presentation of key messages second half of 2017
- RMS and Pacifico milestone planning session 31 January kicked off timeframes for communication activities final 12-months of project.

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 - Precipitation

Month	Total monthly rainfall	Location
01/01/17 - 31/01/17	74.4mm	Northern Compound
01/01/17 - 31/01/17	63.6mm	Albert Drive Compound

The site experienced a total of 14 rain days throughout the month of January 2017.

During January, rainfall received on site was lower than the January monthly average of 146.9mm. 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 January at the Albert Drive Compound and Northern Compound are shown below in Table 2.1 and 2.2.

January 20	17	
		TOTAL Rain
Date	Time	Gauge (mm)
1/01/2017	9:00:00	0
2/01/2017	9:00:00	1
3/01/2017	9:00:00	1.6
4/01/2017	9:00:00	3.4
5/01/2017	9:00:00	2.4
6/01/2017	9:00:00	2.8
7/01/2017	9:00:00	0.2
8/01/2017	9:00:00	2.4
9/01/2017	9:00:00	0
10/01/2017	9:00:00	0
11/01/2017	9:00:00	0
12/01/2017	9:00:00	0
13/01/2017	9:00:00	18
14/01/2017	9:00:00	0
15/01/2017	9:00:00	13.8
16/01/2017	9:00:00	3.8
17/01/2017	9:00:00	0
18/01/2017	9:00:00	0
19/01/2017	9:00:00	2
20/01/2017	9:00:00	0.2
21/01/2017	9:00:00	6.4
22/01/2017	9:00:00	0
23/01/2017	9:00:00	0
24/01/2017	9:00:00	0
25/01/2017	9:00:00	0
26/01/2017	9:00:00	0
27/01/2017	9:00:00	5.6
28/01/2017	9:00:00	0
29/01/2017	9:00:00	0
30/01/2017	9:00:00	0
31/01/2017	9:00:00	0

Table 2.1 – Rainfall recorded at Albert Drive Southern Compound AutomatedWeather Station

Table 2	2.2 -	Rainfall	recorded	at	the	Northern	Compound	Automated	Weather
		Station							

Januar	<u>y 2017</u>	
Date	Time	TOTAL Rain
		Gauge (mm)
1/01/2017	9:00:00	0
2/01/2017	9:00:00	2.6
3/01/2017	9:00:00	1.8
4/01/2017	9:00:00	1.6
5/01/2017	9:00:00	2.2
6/01/2017	9:00:00	8.2
7/01/2017	9:00:00	0.4
8/01/2017	9:00:00	0.8
9/01/2017	9:00:00	0
10/01/2017	9:00:00	0
11/01/2017	9:00:00	0
12/01/2017	9:00:00	5.2
13/01/2017	9:00:00	0.2
14/01/2017	9:00:00	0.2
15/01/2017	9:00:00	23
16/01/2017	9:00:00	7.4
17/01/2017	9:00:00	0
18/01/2017	9:00:00	0
19/01/2017	9:00:00	7.6
20/01/2017	9:00:00	0.4
21/01/2017	9:00:00	5
22/01/2017	9:00:00	0
23/01/2017	9:00:00	0
24/01/2017	9:00:00	0
25/01/2017	9:00:00	0
26/01/2017	9:00:00	0.8
27/01/2017	9:00:00	6.6
28/01/2017	9:00:00	0.4
29/01/2017	9:00:00	0
30/01/2017	9:00:00	0
31/01/2017	9:00:00	0

	January 2017		
	Minimum	Maximum	
	temperature	temperature	Rainfall
Date	(°C)	(°C)	(mm)
1/01/2016	17.8	27.9	0
2/01/2016	17.8	27.5	0
3/01/2016	18.4	24.1	0
4/01/2016	17	26.8	27.8
5/01/2016	19	23	6.6
6/01/2016	18.8	26.5	18.4
7/01/2016	17.8	25.5	1
8/01/2016	17.5	27.6	0
9/01/2016	19	28.5	0
10/01/2016	19.2	28.4	0
11/01/2016	21	26.8	0
12/01/2016	22	30.5	0
13/01/2016	21.5	30.5	0
14/01/2016	23	27	0
15/01/2016	19.5	20	0
16/01/2016	15.4	26.2	19.7
17/01/2016	16.2	27	4.2
18/01/2016	17.9	28.2	0.8
19/01/2016	20		0
20/01/2016	20.2	27.2	0
21/01/2016	22	27.6	0
22/01/2016	21.5	27.8	0
23/01/2016	22.5	31	5.2
24/01/2016	19.9	29.3	7.2
25/01/2016	21.7	30	0
26/01/2016	19.8	28	69
27/01/2016	19.1	27.7	2.2
28/01/2016	20	25.1	2.8
29/01/2016	20.4	29.4	7.6
30/01/2016	21.2	30.5	1.6
31/01/2016	24	30.5	0

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

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):

Dry Sampling Event

A "dry" sampling event was undertaken on the 10th January 2017, field testing and lab sampling was undertaken. Results are attached in Appendix A.

pH levels noted to be outside of trigger levels at:

Upper Warrell Creek recorded elevated pH levels upstream (8.27) and downstream (8.15). 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.

Stony Creek recorded elevated pH levels upstream (8.22) and downstream (7.8). 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).

Lower Warrell Creek recorded elevated pH levels upstream (7.48) and downstream (7.46). 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 (7.97) and downstream (7.98). 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. It is also noted that these levels are within ANZECC criteria (pH 6.5-8.0).

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

Upper Warrell Creek recorded elevated levels upstream (16.9 NTU) and downstream (25.8 NTU). All controls were verified to be in place for the site, with no activities being undertaken within the waterway.

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

Lower Warrell Creek downstream (3.01mg/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.

Nambucca River upstream (3.65mg/L) and downstream (3.92mg/L). All controls were verified to be in place for the site, with no activities being undertaken in the waterway.

Metals levels noted to be above trigger levels at:

Stony Creek recorded elevated manganese upstream (0.116mg/L) and downstream (0.127mg/L), iron upstream (1.06mg/L) and downstream (1.11mg/L). All controls were in place for the site, with no activities undertaken within the waterway. Elevated levels are possibly as a result of a source further upstream due to the minimal change in levels between upstream and downstream sites.

Lower Warrell Creek recorded elevated levels of nickel upstream (0.004mg/L). All controls were in place for the site, with no activities undertaken within the waterway. The elevated levels are possibly as a result of natural variation within the waterway.

Nutrient levels noted to be above trigger levels at:

Nambucca River recorded elevated levels of ammonia downstream (0.15mg/L). All controls were in place for the site, with no construction activities undertaken within the waterway.

TSS levels noted to be above trigger levels at:

Stony Creek downstream (6mg/L). It is noted that levels decreased from upstream to downstream sites with no construction activities undertaken within the waterway. It is also noted that this is only marginally above trigger levels (5.8mg/L) and is also within ANZECC criteria (<40mg/L).

Wet Sampling Event

A "wet" sampling event (>10mm in 24 hours) was undertaken on the 16th January 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 (7.37). It is noted that no construction activities were being undertaken within the waterway, and there was only a marginal increase from upstream to downstream sites. It is also noted that these results are within ANZECC criteria (pH 6.5-8.0).

Nambucca River recorded elevated pH levels upstream (7.93) and downstream (7.99). It is noted that no construction activities were being undertaken within the waterway, and there was only a marginal increase from upstream to downstream sites. It is also noted that these results are within ANZECC criteria (pH 6.5-8.0).

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

Nambucca River upstream (44.5 NTU) and downstream (31.2 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 above trigger levels.

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

Stony Creek upstream (2.03mg/L) and downstream (2.07mg/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 a build-up of vegetative matter in the extended dry period previous to this wet event, resulting in decreased DO levels once this entered the waterway.

Lower Warrell Creek upstream (2.34mg/L) and downstream (3.28mg/L). It is noted that levels increased from upstream to downstream sites and are unlikely to be attributed to construction impacts. Decaying vegetative matter within the waterway potentially contributed to the results.

Nambucca River upstream (3.48mg/L) and downstream (3.07mg/L). All controls were in place for the site with no construction activity within the waterway. A potential reason for this could be a build-up of vegetative matter in the extended dry period previous to this wet event, resulting in decreased DO levels once this entered the waterway.

Metals noted to be above trigger levels at:

Stony Creek recorded elevated levels of manganese upstream (0.089mg/L) and downstream (0.118mg/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 (1.9mg/L).

Nutrients noted to be above trigger levels at:

Upper Warrell Creek recorded elevated ammonia upstream (0.04mg/L) and downstream (0.03mg/L), total phosphorus downstream (0.07mg/L). All controls were in place for the site, with no activity being undertaken within the waterway. Decaying vegetation within the waterway is a potential source for these elevated levels. It is noted that ammonia levels are well within ANZECC criteria (0.9mg/L). It is also noted that ammonia levels decreased from upstream to downstream sites, and are unlikely to be attributed to construction impacts.

Nambucca River recorded elevated ammonia downstream (0.12mg/L). All controls were in place for the site, with no activity being undertaken within the waterway. It is also noted that ammonia levels were well within ANZECC criteria (0.9mg/L).

4. Sediment Basin Water Monitoring

Water was released from commissioned sediment basins after rainfall events on the 2nd, 8th, 13th and 16th January 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) (R² = 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 – Wate		Release r	vegister	January 20	17		
Date	Basin ID	Oil and Grease (visible) (Limit = No visible)	рН (6.5- 8.5)	Turbidity (NTU) (Limit <90 NTU)	TSS (mg/L) (Limit <50mg/L)	Approx Volume Discharged (kL)	Comments
3/01/2017	B47.96	Ν	8.03	10.2		600	
9/01/2017	B60.5	N	7.96	33.2		100	
14/01/2017	B45.00	N	7.17	25		700	
14/01/2017	B45.50	Ν	7.38	23.8		500	
14/01/2017	B45.64	Ν	7.01	50.5		500	
16/01/2017	B42.87	Ν	6.9	18.5	<5	600	
16/01/2017	B43.37	Ν	7.1	57.5	10	700	
16/01/2017	B43.75	Ν	7.3	40.3	<5	400	
16/01/2017	B48.30	Ν	6.8	7.8	10	400	
17/01/2017	B53.03	Ν	7.83	22.6		200	
17/01/2017	B60.5	Ν	7.37	48.6	10	400	
17/01/2017	B60.87	Ν	7.01	54.3		250	
18/01/2017	B45.00	N	7.94	39.9		300	
18/01/2017	B47.96	Ν	6.6	12.7		600	
18/01/2017	B48.46	Ν	6.73	26.7		400	
18/01/2017	B49.20	Ν	6.75	13.8	5	360	
18/01/2017	B49.67	Ν	7.58	37.8		400	
18/01/2017	B58.45	Ν	7.84	21.8	14	400	
19/01/2017	B55.17B	Ν	7.97	40.1	<5	150	
19/01/2017	B55.8	Ν	7.85	54.2	10	500	
19/01/2017	B59.6	Ν	8.18	42.3		100	

Table 3 – Water Release Register January 2017

19/01/2017	B60.3	Ν	7.62	56.3		200	
19/01/2017	B61.25	N	6.72	29.4	<5	300	
20/01/2017	B53.03	Ν	7.81	22.9		50	
20/01/2017	B59.85	Ν	7.86	43.2		400	
20/01/2017	B853.4	Ν	7.23	33.6		400	
23/01/2017	B42.30	Ν	7	3.3		150	
23/01/2017	B45.64	Ν	8.4	42.8		400	
28/01/2017	B45.00	Ν	7.88	63.5		400	
28/01/2017	B45.64	Ν	7.98	49.8		500	

5. Noise Monitoring

Monthly routine construction noise monitoring was undertaken on the 12th and 19th of January 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 at the commencement of vibratory rolling near residents at Old Coast Road on the 11th of January 2017. Monitoring results are contained in Table 5 Appendix A. Results were within building damage limits (5mm/s).

7. Dust Monitoring

Dust deposition gauges (DDG) were placed at nearby sensitive receivers from 2^{nd} December 2016 to 3^{rd} January 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 20th and 23rd of January 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 (6.91). 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 (9.11mS/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:

4BH037a – Fill 15 (1.67m from top of casing). It is noted that this bore had to be relocated from its original location due to it being within the construction footprint.

Metals noted to be outside of trigger levels at:

4BH021 – Cut 11 recorded elevated levels of copper (0.129mg/L) and Zinc (0.018mg/L)

4BH037a – Fill 15 recorded elevated levels of arsenic (0.001mg/L). It is noted that these are well below ANZECC criteria (0.024mg/L). It is noted that this bore had to be relocated from its original location due to it being within the construction footprint.

Nutrients noted to be outside of trigger levels at:

4BH037a – Fill 15 recorded elevated levels of nitrogen (3mg/L) and nitrite (0.03mg/L). It is noted that this bore had to be relocated from its original location due to it being within the construction footprint.

Major anions and cations noted to be outside of trigger levels at:

4BH021 – Cut 11 recorded elevated levels of sodium (24mg/L). It is noted that this is only a minor exceedance of trigger levels for the site (18mg/L).

4BH037a – Fill 15 recorded elevated levels of chloride (1570mg/L), sulfate (3080mg/L), bicarbonate (534mg/L), sodium (1530mg/L), potassium (65mg/L), calcium (403mg/L) and magnesium (519mg/L). It is noted that this bore had to be relocated from its original location due to it being within the construction footprint.

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 January 2017. A summary of these approvals is below in Table 4.

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

	>5dB(A) above	
OOH Request Title	background	Approval Date
Wet Curing – Cut 2 Pergola	Ν	13/1/2017
Washout Concrete Paver CC05	Ν	17/1/2017
Albert Drive Bridge Finishing Works	Ν	20/1/2017
Asphalt Batch Plant Assembly	Ν	20/1/2017
BR12 Abutment Backfill	Ν	20/1/2017
BR12 Concreting, formwork and reo	Ν	27/1/2017

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

- Water cart usage over the weekend
- Running of various pumps and generators approved for use in previous months
- Nambucca River structures concreting works north of Pier 7 approved in previous months
- Washing out of tipper trucks
- Refuelling in designated zones
- Floodplain Bridge 2 concreting works and piling
- Old Coast Road North Bridge concreting works

Acoustic Investigations (field monitoring) have been conducted for several Out of Hours Works during the month of January 2017, results are included in Appendix A. All activities were compliant with predicted levels.

10. Complaints

9.1 Summary of Complaints for the month

23/01/2017 – Resident contacted Pacifico regarding dust from project works nearby blowing onto his property, particularly paddocks where the grass is the primary food for his cattle. Community attended the property immediately, called the nearby supervisor but a water truck was already attending that location. Community discussed this issue further with all nearby supervisors, environment reps and superintendent. A water cart has been designated to this location whilst earthworks are being completed in this location (Fill 15C).

11. Non-Compliance

11.1 Summary of Non-compliances

One (1) Non-Compliance against the ACCIONA Environmental Protection Licence (EPL) 20533 occurred in January 2017

AFJV-NCR-001285

Description of Non-Compliance

Sediment Basin B43.37, an 85th percentile basin, overtopped the spillway on the 16th January 2017 after a rainfall event. The rainfall event was measured at the closest rain gauge as 36mm, below the 85th percentile design rainfall event.

Possible Causes

An isolated storm cell may have caused the B43.37 catchment area to receive more than 36mm.

Remedial Action

A review of the controls in the B43.37 was undertaken on the 16th January 2017 to confirm compliance the the Progressive Erosion and Sediment Control Plan. Soil Conservation Service confirmed that the sediment basin was correctly sized for the required catchment and is compliant with the PESCP. A review of all PESCPs has been undertaken and where no longer required, basins will be removed from the license.

Corrective Action

Sediment Basin B43.37 has been decommissioned and is no longer on the ACCIONA Environmental Protection License 20533.

Appendix A – Monitoring Results

Location	Units	Levels of Concern Upper Warrell Creek Upstream			reek	ι	Jpper Warrell (Creek		Stony Creek			Stony Creek		Lo	w er Warrell Cre	ek	L	ow er Warrell C	Creek	Unnar	med Creek Gumma	a West	Unna	med Creek Gun	nma East	Unnan	ned Creek Gumm	na North	Na	ambucca River So	uth	Nar	imbucca River So	outh	
								Dow nstream			Upstream			Dow nstream			Upstream			Dow nstream			Upstream			Upstream			Dow nstream			Upstream		1	Dow nstream	
Freshw ater / Estuarine			0 95% species		Freshw ater			Freshw ate	er		Freshw ater			Freshw ater			Freshw ater			Freshw ater	r		Freshw ater			Freshw ater			Freshw ater			Estuarine			Estuarine	
Date of Sampling		prot	ected		10-Jan-17			10-Jan-17	7		10-Jan-17			10-Jan-17			10-Jan-17			10-Jan-17			10-Jan-17			10-Jan-17			10-Jan-17			10-Jan-17			10-Jan-17	
Time of Sampling		Freshw ater	Marine		10:00 AM			9:35 AM			8:59 AM			8:32 AM			11:54 AM			11:50 AM			10:38 AM			10:31 AM			10:27 AM			11:27 AM			11:06 AM	
Comments																										sample - water			sample - water le					1		
Туре				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																																			L'	
Aluminium	mg/L	0.055	-	0.06	0.01	< 0.01	0.05	0.01	< 0.01	0.05	0.01	< 0.01	0.04	0.01	0.01	0.06	0.01	< 0.01	0.06	0.01	< 0.01	0.1	0.01	0.01	0.1	0.01	-	0.1	0.01	-	0.02	0.01	< 0.10	0.02	0.01	<0.10
Arsenic	mg/L	0.024	0.0023	-	-	0.001	-	-	< 0.001	-	-	0.001	0.001	0.001	0.001	0.001	0.001	< 0.001	0.001	0.001	< 0.001	0.002	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	0.0001	0.0001	< 0.0001	0.0001	0.0001	< 0.0001	-	-	< 0.0001	-	-	-	-	-	-	-	-	< 0.0010	1 - 1	-	< 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	< 0.010	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	0.21	0.02	1.02	0.2	0.03	0.127	0.06	0.02	0.116	0.052	0.013	0.127	0.26	0.08	0.272	0.26	0.08	0.25	0.23	0.019	0.435	0.23	0.019	-	0.23	0.019	-	0.03	0.002	< 0.010	0.03	0.002	<0.010
Nickel	mg/L	0.011	0.07	-	-	0.003	-	-	0.015	-	-	< 0.001	-	-	< 0.001	0.001	0.001	< 0.001	0.001	0.001	0.004	0.001	0.001	< 0.001	0.001	0.001	-	0.001	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	-	-	<0.005	-	-	< 0.005	0.005	0.005	<0.005	0.005	0.005	<0.005	0.006	0.005	<0.005	0.006	0.005	<0.005	0.005	0.005	< 0.005	0.005	0.005	-	0.005	0.005	-	0.005	0.005	<0.050	0.005	0.005	<0.050
Iron	mg/L	-	-	0.99	0.46	0.52	0.93	0.31	0.1	0.82	0.42	1.06	0.78	0.37	1.11	0.83	0.05	<0.05	0.83	0.05	0.05	2.01	0.25	1.29	2.01	0.25	-	2.01	0.25	-	-	-	<0.10]		<0.10
Mercury	mg/L	0.0006	0.0004	-	-	< 0.0001	-	-	< 0.0001	-	-	< 0.0001	-	-	< 0.0001			< 0.0001			< 0.0001	-	-	< 0.0001	-	-	-	-	-	-	-	-	< 0.0001	- 1		< 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	\square	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	(- T	(NA
>C10 - C16 Fraction	μg/L	-	-	-		NA	-		NA	-		NA	-		NA	-		NA	-		NA	-		NA	-		-	-		-	-		NA	(- T	(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	[-]	\square	NA
>C10 - C16 Fraction minus Naphthalene (F2)	μg/L	-	-	-		NA	-		NA	-		NA	-		NA	-		NA	-		NA	-		NA	-		-	-		-	-		NA	[-]	()	NA
BTEX																																			L'	
Benzene	μg/L	950	700	950		NA	950		NA	950		NA	950		NA	950		NA	950		NA	950		NA	950		-	950		-	700		NA	700	L'	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	-	L'	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		<u>'</u> '	NA
Sum of BTEX	μg/L	-	-	-		NA	-		NA	-		NA	-		NA	-		NA	-		NA	-		NA	-		-	-		-	-		NA		<u>'</u> ــــــــــــــــــــــــــــــــــــ	NA
Nutrients																																			└─── ′	
Total Phosphorus	mg/L	0.05	0.03	0.04	0.01	0.11	0.03	0.01	< 0.01	0.04	0.01	< 0.01	0.02	0.01	0.02	0.04	0.01	< 0.05	0.04	0.01	< 0.05	0.12	0.03	0.04	0.12	0.03	-	0.12	0.03	-	0.04	0.02	< 0.05	0.04	0.02	<0.02
Phosphate (reactive phosphorus)	mg/L	-	-	-	-	< 0.01	-	-	< 0.01	-	-	< 0.01	-	-	< 0.01	0.01	0.0044	< 0.01	0.01	0.0044	<0.01	0.01	0.005	< 0.01	0.01	0.005	-	0.01	0.005	-	0.01	0.008	0.01	0.01	0.008	<0.01
																											-			-					└─── ′	
T otal Nitrogen	mg/L	0.5	0.3	0.62	0.2	0.7	0.6	0.2		0.3	0.1	0.8	0.41	0.1	0.3	0.5	0.2	<0.5	0.5	0.2	<0.5	2.8	1.1	1.5	2.8	1.1	-	2.8	1.1	-	0.5	0.2	0.7	0.5	0.2	<0.2
Total Kjeldahl Nitrogen	mg/L	-	-	0.6	0.2	0.7	0.6	0.2	0.3	0.3	0.1	0.8	0.4	0.1	0.3	0.5	0.2	<0.5	0.5	0.2	<0.5	2.4	1	1.4	2.4	1	-	2.4	1	-	0.5	0.2	0.7	0.5	0.2	<0.2
																											-			-						4
Nitrate	mg/L	0.7	-	0.04	0.01	< 0.01	0.03	0.01		0.03	0.01	< 0.01	0.03	0.01	< 0.01	0.04	0.01	0.01	0.04	0.01	<0.01	0.04	0.01	0.08	0.04	0.01	-	0.04	0.01	-	0.02	0.01	<0.01	0.02	0.01	<0.01
Nitrite	mg/L	-	-	-	-	< 0.01	0.01	0.01		0.01	0.01	< 0.01	0.01	0.01	< 0.01	0.01	0.01	< 0.01	0.01	0.01	<0.01	0.05	0.01	<0.01	0.05	0.01	-	0.05	0.01	-	0.02	0.01	< 0.01	0.02	0.01	<0.01
Ammonia	mg/L	0.9		-	-	< 0.01	-	-	0.01	-	-	0.04	-	-	< 0.01	0.16	0.06	0.04	0.16	0.06	0.04	0.04	0.01	0.06	0.04	0.01	-	0.04	0.01	-	0.03	0.01	< 0.05	0.03	0.01	0.15
TSS																																			└─── ′	
TSS	mg/L	<40	<10	14.8	5	16	8	5	7	9	5	8	5.8	5	6	17.6	5	8	17.6	5	<5	290	15	31	290	15	-	290	15	-	71	19	101	71	19	<5
Field Physical data																																				
Temperature	°C	-	-	24.86	14.99	24.13	25.1	16.3	25.48	24.4	16	22.83	26.46	15.94	21.98	27.9	18.4	28.01	27.9	18.4	28.8	26.5	16.3	26.87	26.5	16.3	-	26.5	16.3	-	27.9	18.1	27.59	27.9	18.1	27.46
pH	pН	-	6.5-8	7.25	6.48	8.27	7.3	6.4	8.15	7.5	6.6	8.22	7.33	6.26	7.8	7.02	6.57	7.48	7.02	6.57	7.46	7	6.1	6.84	7	6.1	-	7	6.1	-	7	7	7.97	7	7	7.98
Conductivity	mS/cm	0.125-2.2	-	0.316	0.232	0.278	0.348	0.227	0.214	0.348	0.227	0.252	0.3338	0.2168	0.254	20.946	0.679	23.30	20.946	0.679	23.2	0.808	0.4234	0.755	0.808	0.4234	-	0.808	0.4234	-	47.32	29.44	48.2	47.32	29.44	48.2
Turbidity	NTU	50	10	10.96	4	16.9	9.9	3.5	25.8	9.9	3.5	9.6	5.97	3.74	3.3	6.82	1.83	1.9	6.82	1.83	5.4	52.78	11.3	67.9	52.78	11.3	-	52.78	11.3	-	19.3	6.7	39.3	19.3	6.7	7.4
Dissolved Oxygen	mg/L	5	5	4.98	1.91	5.64	4.8	2.6		4.8	2.6	8.54	6.34	3.52	6	7.98	5.07	5.71	7.98	5.07	3.01	6.4	1.75	2.89	6.4	1.75	-	6.4	1.75	-	9.1	7.4	3.65	9.1	7.4	3.92
Dissolved Oxygen	%			-	-	68.5	-	-	72.5	-	-	98	-	-	70.7	-	-	80.1	-	-	42.6	-	-	36.8	-	-	-	-	-	-	-	-	56.3	L - 1		60.4
TDS	g/L	-	-	-		0.147	-		0.146	-		0.169	-		0.165	-		14.500	-		14.4	-		0.508	-		-	-		-	-		29.4	<u> </u>		29.4
																																			[_]	
									r values provio																										Ļ'	
				00	ls provided i	in ANZECC W	ater Guideli	nes Volume	e 1 and Volum	e 2 where in	sufficient da	ta was avail	able for 95%	6																					L'	
		Exceedance	es of trigger	values																																

Table 1a - Surface Water Sampling Results January 2017 – Dry Event

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

Location							Stony Creek Low er Warrell Creek Low er Warrell Creek U							Unnan	Unnamed Creek Gumma West Unnamed Creek Gumma East						ned Creek Gumma	a North	Na	mbucca River So	uth	Nambucca River South															
					Upstream			Dow nstream	I		Upstream			Dow nstream			Upstream			Dow nstream	I		Upstream			Upstream			Dow nstream			Upstream			Dow nstream						
Freshw ater / Estuarine			00 95% species		Freshw ater	r		Freshw ater			Freshw ater			Freshw ater			Freshw ater			Freshw ater			Freshw ater			Freshw ater			Freshw ater			Estuarine			Estuarine						
Date of Sampling		pro	otected		16-Jan-17			16-Jan-17			16-Jan-17			16-Jan-17			16-Jan-17			16-Jan-17			16-Jan-17			16-Jan-17			16-Jan-17			16-Jan-17			16-Jan-17						
Time of Sampling		Freshw ater	Marine		2:36 PM			2:20 PM			1:59 PM			1:39 PM			3:52 PM			3:40 PM		3:00 PM			3:10 PM			2:50 PM									4:20 PM		1	4:11 PM	
Comments												-														ample - water			sample - water le			nop - sediment st			hop - sediment sti						
Туре				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		0.055		0.244	0.0162	0.02	0.404	0.046	0.02	0.000	0.02	0.01	0.444	0.01	-0.01	0.20	0.01	-0.01	0.00	0.01	-0.01	0.25	0.02	0.02	0.25	0.02		0.25	0.02		0.44	0.01	-0.40	0.44	0.01	-0.40					
Arsenic	mg/L	0.055	0.0022	0.244		0.03	0.194	0.016	0.02	0.098	0.02	0.01	0.114	0.01	<0.01 0.001	0.28	0.01	<0.01	0.28	0.01	<0.01	0.25	0.02	0.02	0.25	0.02	-	0.25	0.02	-	0.11	0.01	<0.10	0.11	0.01	<0.10					
Cadmium	mg/L mg/L	0.0024	0.0025	0.001	0.001	< 0.001	0.001	0.001	< 0.001	0.002	0.001	< 0.003	0.002	0.001	< 0.001	0.001	0.001	0.002	0.001	0.001	<0.001	0.002	0.001	< 0.007	0.002	0.001	-	0.002	0.001	-	0.002	0.001	<0.010	0.002	0.001	<0.010					
Chromium	mg/L	0.0002	0.0044	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.0001	0.0002	0.0001	<0.001	0.0002	0.0001	<0.001	-	-	<0.001	-	-	-	-	-	-	-	-	<0.0010	<u> </u>		<0.0010					
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	0.608	0.158	0.0178		0.0726	0.0218	0.089	0.083	0.0164	0.118	0.35	0.087	0.435	0.35	0.087	0.29	0.49	0.011	0.528	0.49	0.011	-	0.49	0.011	-	0.076	0.006	0.025	0.076	0.006	0.016					
Nickel	mg/L	0.011	0.07	-	-	< 0.001	-	-	< 0.001	-	-	< 0.001	-	-	< 0.001	0.0034	0.001	0.007	0.0034	0.001	0.001	0.002	0.001	< 0.001	0.002	0.001	-	0.002	0.001	-	-	-	< 0.010	- 1	(- [†]	< 0.010					
Selenium	mg/L	11	-	-	-	< 0.01	-	-	<0.01	-	-	< 0.01	-	-	<0.01	-	-	<0.01	-	-	<0.01	-	-	<0.01	-	-	-	-	-	-	-	-	<0.10	- I	· · ·	<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	- 1	-	<0.010					
Zinc	mg/L	0.008	0.015	0.007		< 0.005	0.0062	0.0042	<0.005	0.0064	0.005	< 0.005	0.006	0.005	< 0.005	0.018	0.005	0.018	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	1.44	0.99	0.366	0.75	1.4	0.41	2.29	1.48	0.35	< 0.05	0.52	0.05	0.1	0.52	0.05	0.09	1.65	0.37	3.82	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	_ <u> </u>	· · ·	< 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	<u> </u>		NA					
C6 - C10 Fraction minus BTEX (F1) >C10 - C16 Fraction	μg/L	-	-	-		NA	-		NA	-		NA	-		NA	-		NA	-		NA	-	-	NA	-		-	-		-	-		NA	<u> </u>		NA					
>C10 - C16 Fraction >C16 - C34 Fraction	μg/L	-	-	-		NA	-		NA	-		NA	-		NA	-		NA	-		NA	-		NA	-		-	-		-	-		NA	<u> </u>		NA NA					
>C34 - C40 Fraction	μg/L	-	-	-		NA	-		NA	-		NA	-		NA NA	-		NA	-		NA	-		NA	-		-	-		-	-		NA	<u> </u>		NA					
>C10 - C40 Fraction (sum)	µg/L			-		NA	-		NA	-		NA	-		NA	-		NA	-		NA	-		NA	-		-	-		-	-		NA	+	$ \longrightarrow$	NA					
>C10 - C16 Fraction minus Naphthalene (F2)	μg/L	-		-		NA			NA	-		NA	-		NA	_		NA	-		NA	-		NA	-		-			-	-		NA	<u> </u>	$ \longrightarrow $	NA					
BTEX																																		· · · · ·	$ \longrightarrow $						
Benzene	μg/L	950	700	950		NA	950		NA	950		NA	950		NA	950		NA	950		NA	950		NA	950		-	950		-	700		NA	700	\square	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	<u> </u>		NA					
Nutrients								0.010			0.010												0.00																		
Total Phosphorus Phosphate (reactive phosphorus)	mg/L	0.05	0.03	0.05	0.02	0.04	0.044	0.016	0.07	0.03	0.016	0.03	0.034	0.01	0.01	0.04	0.01	<0.02	0.04	0.01	0.04 <0.01	0.11	0.03	<0.01	0.11	0.03	-	0.11	0.03	-	0.07	0.02	< 0.05	0.07	0.02	<0.05					
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	0.4	0.52	0.2	0.5	0.48	0.2	0.2	0.63	0.2	0.2	0.54	0.31	0.3	0.54	0.31	0.1	3.1	0.9	67	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	-	-	0.56	0.3	0.4	0.52	0.2	0.5	0.48	0.2	0.2	0.65	0.2	0.2	0.54	0.31	0.3	0.54	0.31	0.1	2.8	0.9	6.7	2.8	0.9		2.8	0.9	-	0.46	0.2	<0.5	0.46	0.2	<0.5					
	<u> </u>			0.5	0.5	0.1.	0.0	0.2	0.0	0.01	0.2	0.2	0.0	0.2	0.2	0.0	0.2	0.0	0.0	0.2	011	2.0	0.0	0.7	2.0	0.0	-	2.0	0.0	-	0.0	0.2	-0.5	0.0	0.2	.0.0					
Nitrate	mg/L	0.7	-	0.102	0.01	0.02	0.054	0.01	0.01	0.208	0.01	0.01	0.2	0.01	0.02	0.05	0.01	0.01	0.05	0.01	<0.01	0.03	0.01	< 0.01	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	0.04	0.02	0.01	0.03	0.046	0.02	0.02	0.062	0.012	0.04	0.116	0.022	0.04	0.116	0.022	0.06	0.06	0.01	0.16	0.06	0.01	-	0.06	0.01	-	0.15	0.024	0.03	0.15	0.024	0.12					
TSS																																									
TSS	mg/L	<40	<10	19	5	7	12.8	5	21	14.8	5	12	8.7	5	7	25	5.5	17	25	5.5	<5	350	9	22	350	9	-	350	9	-			48			21					
Lab Physical data (no field data available)																																									
Temperature	°C	-	-	24.3			24.52	16.79	26.41	23.98	17.36	23.68	24.7	17.65	24.31		19.5	28.37	25.9	19.5	28.7	25.84	19.1	27.42	25.84	19.1	-	25.84	19.1	-	26.56	21.32	27.88	26.56	21.32	27.97					
pH	pH	-	6.5-8	7.478	6.23	6.8	7.192	6.42	7.15	7.138	6.61	6.35	6.98	6.21	6.54	6.86	6.46	7.33	6.86	6.46	7.37	6.9	6.08	6.78	6.9	6.08	-	6.9	6.08	-	7.56	6.58	7.93	7.56	6.58	7.99					
Conductivity	mS/cm	0.125-2.2	-	0.3204			0.3242	0.19076		0.313	0.2024	0.252	0.309	0.20188	0.302	20.918	0.50928	19	20.918	0.50928	23	0.842	0.334	0.819	0.842	0.334	-	0.842	0.334	-	48.42	12.65	29.4	48.42	12.65	45.5					
Turbidity	NTU	50	10	26.16		6.4	27.32	3.72	18.7	14.98	3.34	2.7	17.16	4.59	11.6	26.1	2.4	33	26.1	2.4	4.4	66.8	11.6	130	66.8	11.6	-	66.8	11.6	-	19.04	5.81	44.5	19.04	5.81	31.2					
Dissolved Oxygen	mg/L	5	5	7.43	1.5	1.11	6.88	2.28	2.45 30.9	8.472	5.08	2.03	7.59	2.63	2.07	6.65	5.02	2.34	6.65	5.02	3.28 45.9	7.3	1.78	1.97	7.3	1.78	-	7.3	1.78	-	8.47	6.88	3.48 48.1	8.47	6.88	3.0/					
Dissolved Oxygen	% g/L			-	-	13.8	-		30.9	-		0.164	-		25.2	-		31.9	-		45.9	-		25.3 0.545	-		-	-		-	-		48.1 18.8			45.9 28.5					
105	g/L	-	-	-		0.151	-		0.10/	-		0.104	-		0.2	-		12.4	-		14.4	-		0.545	-		-	-		-	-		10.0			28.5					
		Taken from		e trigger lev		species level in ANZECC W					sufficient da	ita was avail	able for 95%	6																											

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
12/01/2017	2:55 PM	Albert Drive	74	1	50	Cut	62	58.5	74.8	46.9	74.9	57.3	54.4	Excavators, tipper	Y	N/A	Within predicted levels
12/01/2017	3:18 PM	Cockburns Lane	16	1	50	Cut	65	49.7	78.7	36.6	53	42.6	39.9	Hand tools	N	N/A	Construction not audible. Noise sources: highway traffic, dog barking, birds
12/01/2017	4:02 PM	Bald Hill Rd	197	3	50	Cut	72	57.3	80	45.4	57.3	53	50.4	Excavator, grader, side tippers	Y	N/A	Within predicted levels
19/01/2017	3:22 PM	Letitia Rd	406	4	59	Cut	74	65.3	78.4	59.6	67.2	64.4	62.2	Excavator loading moxy, graders levelling material	Y	N/A	Within predicted levels
19/01/2017	3:47 PM	Mattick Rd	442	6	44	Cut	62	58.5	76.7	50.5	59.7	55.4	53.1	Excavator, roller, moxy	Y	N/A	Within predicted levels
19/01/2017	2:57 PM	Nursery Rd	415	4	59	Cut	53	53.1	75.6	39.2	49.1	45.7	43.1	Excavator	N	N/A	Construction not audible. Noise sources: highway + local traffic, birds
12/01/2017	3:51 PM	Wallace St	148	3	50	Cut	47	59	70.5	46.7	62.7	54.5	50.2	Excavator	N	N/A	Construction not audible. Noise sources: local + highway traffic
12/01/2017	4:40 PM	Gumma Rd	383	3	50	Bridgeworks	67	48.3	62.7	36.2	51.8	43.8	39.4	Hand tools, excavator, side tippers	Y	N/A	Within predicted levels. Other noise sources: local traffic, highway

Table 2 - Noise Monitoring Results January 2017

Table 3 - Dust Monitoring Results December 2016/ January 2017

			DDG ID		DDG1	DDG2	DDG3	DDG4	DDG5	DDG6	DDG6N	DDG7	DDG8	DDG9NE	DDG9E	DDG A1	DDG A2
			Start date of sam	pling	5/12/2016	2/12/2016	2/12/2016	2/12/2016	2/12/2016	2/12/2016	2/12/2016	2/12/2016	2/12/2016	2/12/2016	2/12/2016	2/12/2016	2/12/2016
			Finish date of sam	npling	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
Analyte	Time Period	Unit	Levels of Concern	LOR													
	Current Month	g/m².month	4	0.1	0.4	1.1	0.4	0.4	0.3	1.5	1.4	1	NA	0.7	0.4		
Ash Content		mg	N/A	1	6	20	7	8	6	29	27	19	NA	13	7		
Asir content	Previous Month	g/m².month			0.3	0.8	1	0.7	0.7	4.2	5.7	0.7	1.4	1.4	0.6		
	Change	g/m².month	Increase of 2		0.1	0.3	-0.6	-0.3	-0.4	-2.7	-4.3	0.3	NA	-0.7	-0.2		
Combustible	Current Month	g/m².month	N/A	0.1	0.1	1.9	<0.1	<0.1	<0.1	0.4	0.7	0.3	NA	1.5	0.8		
Matter	current wonth	mg	N/A	1	3	37	1	<1	<1	6	12	5	NA	29	16		
Total	Current Month	g/m².month	4	0.1	0.5	3	0.4	0.4	0.3	1.9	2.1	1.3	NA	2.2	1.2		
Total Insoluble	current wonth	mg	N/A	1	9	57	8	8	6	35	39	24	NA	42	23		
Matter (TIM)	Previous Month	g/m².month		0.1	0.6	1.4	1.3	1.1	1.1	7.2	6.7	1	2.3	1.9	1.8		
Watter (TIW)	Change	g/m².month	Increase of 2	0.1	-0.1	1.6	-0.9	-0.7	-0.8	-5.3	-4.6	0.3	NA	0.3	-0.6		
Arsenic	Current Month	mg/L		0.001												<0.001	<0.001
Comments					Beetles in gauge	Beetles in gauge	Driveway gravelled (not sealed anymore). Grass growing around gauge			Beetles in gauge	Beetles + bees in gauge		Numerous flying ants in gauge. Gauge broken in transit to lab	Grass mowed around gauge. Beetles in gauge	Grass mowed around gauge. Numerous beetles in gauge	Beetles in gauge	Beetles in gauge

Location	Units	Investigation	4BH0	007	4BH	800		4BH01	0	4BH01	1	4	BH021		4B	H022c		4BH025	5	4	BH026	4BH037	а	4BH03	8	4	BH057	4BH058	с	4BH0	61	4BH0	62
Cut/Fill		Levels (GILs) from	Cut 4 - (US		Cut 4 - (D		Cut	6 - Wes	t (DS)	Cut 6 - Eas	t (US)	Cut 11	- West (D	OS)	Cut 11	- East (US)	Cut	12 - Wes	t (DS)	Cut 12	- East (US)	Fill 15 - W	est	Fill 15 - E	ast	Cut 17	7 - West (DS)	Cut 17 - East	t (US)	Cut 23 - We	əst (US)	Cut 23 - Ea	ast (C
of Sampling			20/01/2	2017	20/01/	2017	2	20/01/20	17	20/01/20	17	20	/01/2017		20/0	01/2017		20/01/201	17	20	/01/2017	20/01/201	17	20/01/201	17	23	3/01/2017	23/01/201	7	23/01/2	017	23/01/20	.017
			Trigger levels 80 / 20%ile	Results	Trigger levels 80 / 20%ile	Results	Trigger lev 20%i		Results	Trigger levels 80 / 20%ile	Results	Frigger lev 20%il		sults	rigger level 20%ile	s 80 / Results		evels 80 / %ile	Results	Trigger lev 20%ile (1 4LDBH	from Results	Trigger levels 80 / 20%ile	Results	Trigger levels 80 / 20%ile	Results	Trigger le 20%i		Trigger levels 80 / 20%ile	Results	Trigger levels 80 / 20%ile	Results	Trigger levels 80 / 20%ile	³ Res
ments				Unable to sample		Unable to sample			Water level too low to sample		Unable to sample								Unable to sample		Unable to sample				Unable to sample		Unable to sample				Unable to sample		Una ti san
oratory data - awaitir	ng results			o di inipi o									ļ										ļ										
ls		0.055					0.2740					0.0040		0.01 0	0.0122	0.3200	0.0324			0.0422		0.0264	<0.01	0.0050		0.0050		0.0050	10.01				-
ninium nic	mg/L mg/L	0.055	-	-	-	-	0.2740	_	-	-		0.0216			0.0001	<0.001	0.0324		-	0.0422	-	0.0264	0.001	0.0050	-	0.0050		0.0050	<0.01 <0.001	-	+		
nium	mg/L	<lor< td=""><td>-</td><td>-</td><td>-</td><td>-</td><td>0.0005</td><td></td><td>-</td><td>-</td><td></td><td>0.0001</td><td></td><td></td><td>0.0001</td><td></td><td>0.0002</td><td></td><td>-</td><td>0.0005</td><td>-</td><td>0.0002</td><td><0.0001</td><td>0.0005</td><td>-</td><td>0.0005</td><td></td><td>0.0005</td><td>< 0.0001</td><td>-</td><td>- I</td><td>-</td><td></td></lor<>	-	-	-	-	0.0005		-	-		0.0001			0.0001		0.0002		-	0.0005	-	0.0002	<0.0001	0.0005	-	0.0005		0.0005	< 0.0001	-	- I	-	
nium	mg/L	0.001	-	-	-	-	0.0013		-	-		0.0001	<(0.0002	< 0.001	0.0007		-	0.0022	-	0.0010	< 0.001	0.0007	-	0.0005	-	0.0005	< 0.001	-	·	-	
er	mg/L mg/L	0.0014 0.0034	-	-	-	-	0.1620	-	-	-		0.0108	<		0.0030	0.0060	0.0139		-	0.0272	-	0.0139 0.0005	<0.001 <0.001	0.0026 0.0005	-	0.0009	-	0.0082	<0.001 <0.001	-		-	
anese	mg/L	-	-	-	-	-	0.2258		-	-	-	0.0139	0.	0060 0	.4856	3.3200	0.0124		-	0.1676	-	5.2480	2.0200	1.5084	-	0.4518	-	0.0800	0.0240	-	- I	-	
	mg/L	0.011	-	-	-	-	0.0196	_	-	-		0.0058			0.0036		0.0007		-	0.0636	-	0.0068	0.0010	0.0060	-	0.0030		0.0033	0.0020	-	- · ·	-	F
iium	mg/L mg/L	- <lor< td=""><td>-</td><td>-</td><td>-</td><td>-</td><td>0.0050</td><td>_</td><td>-</td><td>-</td><td></td><td>0.0050</td><td></td><td>0.01 0</td><td>0.0050</td><td></td><td>0.0050</td><td></td><td>-</td><td>0.0037</td><td>-</td><td>0.0050 0.0005</td><td><0.01 <0.001</td><td>0.0050 0.0005</td><td>-</td><td>0.0050</td><td></td><td>0.0050</td><td><0.01 <0.001</td><td>-</td><td>\vdash</td><td>-</td><td></td></lor<>	-	-	-	-	0.0050	_	-	-		0.0050		0.01 0	0.0050		0.0050		-	0.0037	-	0.0050 0.0005	<0.01 <0.001	0.0050 0.0005	-	0.0050		0.0050	<0.01 <0.001	-	\vdash	-	
	mg/L	0.008	-	-	-	-	0.0532		-	-	-	0.0176	0	. <mark>018</mark> (0.0085	0.6710	0.0102		-	0.0432	-	0.0196	0.0070	0.0132	-	0.0090	-	0.0100	0.0050	-	· ·]	-	
	mg/L	-	-	-	-	-	6.5800	_	-	-		0.0354			.1600	< 0.05	0.0322		-	0.6574	-	84.5600	24.8000	1.7500	-	4.6344		0.0600	< 0.05	-	- · ·	-	F
Petroleum	mg/L	0.0006	-	-	-	-	0.0003		-	-	-	0.0001	<0	.0001 0	0.0001	<0.0001	0.0001		-	0.0008	-	0.0001	<0.0001	0.0003	-	0.0003	-	0.0003	<0.0001	-	<u> </u>	-	4
carbons																															1 1		
Fraction	µg/L or ppb	-	-	-	-	-	10		-	-	-	16		<20	16	<20			-	-	-	10.0000	<20	10.0000	-	10.0000		10.0000	<20	-	I	-	Ŧ
14 Fraction 28 Fraction	µg/L or ppb µg/L or ppb	-	-	-	-		85 50	_	-	-	-	25 50		<50	45 50		25.000		-	25.0000 50.0000	-	219.0000 190.0000	<50 <100	25.0000 50.0000		25.0000 25.0000		25.0000 25.0000	<50 <100	-	\vdash	-	+
36 Fraction	µg/L or ppb	-	_	_	_		50		-	_		50		<50	50	<50	35.0000	_	_	50.0000		35.0000	<50	50.0000		25.0000		25.0000	<50	_			t
36 Fraction	µg/L or ppb	-	-	-	-	-	178		-	-	-	35			226		25.0000		-	25.0000	-	556.0000	<50	25.0000		1426.0000		149.0000	<50	-	- 1	-	t
		-																															4
ene ne	µg/L or ppb µg/L or ppb	950	-	-	-	-	0.5	-	-	-	-	0.5		<1 <2	0.5	<1 <2	0.5000		-	0.5000	-	0.5000 1.0000	<1 <2	0.5000 1.0000		0.5000		0.5000 1.0000	<1 <2	-		-	+
enzene	µg/L or ppb	-	-	-	-	-	1		-	-	-	1		<2	1	<2	1.0000		-	0.5000	-	1.0000	<2	1.0000		1.0000		1.0000	<2	-	- 1	-	t
Kylene	µg/L or ppb	-	-	-	-	-	1		-	-	-	1		<2	1	<2	1.0000		-	1.0000	-	1.0000	<2	1.0000		1.0000		1.0000	<2	-	· ·	-	4
ne halene	µg/L or ppb µg/L or ppb	-	-	-	-	-	1 2.5	_	-	-	-	1 2		<2 <5	1	<2 <5	1.0000		-	0.5000	-	1.0000 2.5000	<2 <5	1.0000 2.5000		1.0000 2.0000		1.0000 2.0000	<2 <5	-	+	-	4
ents	pg/c or ppb	-		-			2.5					2		10	2		2.0000			_		2.0000	-10	2.0000		2.0000		2.0000	10				
Phosphorus	mg/L	-	-	-	-	-	0.0284		-	-		0.0568			0.0480	< 0.01	0.0680		-	0.1096	-	0.1260	0.0200	0.4064		0.0740		0.0300	0.8400	-	<u> </u>	-	4
hate litrogen	mg/L mg/L	-	-	-	-		0.0110	_	-	-		0.0142).0126).5786	<0.01 3.2	0.0070		-	0.0504	-	0.0160 2.1600	< 0.01	0.0410		0.0090		0.0070	<0.01 2.5000	-	+		4
jeldahl Nitrogen	mg/L	-	-	-	-	-	0.5800		-	-		0.1936			0.2536	0.4	0.4000		-	0.4472	-	2.1600	3.0	0.7752		0.3678		0.7000	2.2000	-			t
	mg/L	-	-	-	-	-	0.0250		-	-		0.2460			.4000	2.81	0.3840		-	0.0694	-	0.4000	<0.01	0.4546	-	0.2712		0.1200	0.2900	-	·	-	4
nia	mg/L mg/L	•	-	-	-	-	0.0050		-	-		0.0050			0.0050	<0.01 0.10	0.0050		-	0.0050	-	0.0130 0.7920	0.03	0.0160 0.2300	•	0.0050		0.0050 0.0310	<0.01 0.0400	-	L · ·	-	4
anions	my/L						0.1140		-		-	0.0040		0.01		0.10	0.0440		-	0.0424	-	0.7820	0.4200	0.2000		0.0072	-	0.0010	0.0400	-			t
le	mg/L		-	-	-	-	1704.3180)	-	-	-	15.2			78.8		24.4400		-	102.5453	-	948.8000	1570	2340.3736	-	22.2000		39.1000	17.0000	-	· 1	-	F
onate	mg/L	•	-	-	-	-	53.0000 63.6000		-	-		10.392 27.4			61.8 142.2	580.0000 8.0000	10.5600		-	227.7600 55.0000	-	2056.0000 61.2000	3080	2752.0000 942.0000	•	22.9680 34.4000		35.0000 29.0000	12.0000	-	L · ·	-	4
cations	mg/L		-	-	-	-	03.0000		-	-	-	21.4	20	.0000	142.2	8.0000	10.4000		-	55.0000	-	01.2000	004	942.0000		34.4000	-	29.0000	10.0000	-			t
1	mg/L	-	-	-	-	-	865.6000		-	-	-	18			2.0000	285	29.0800		-	151.5752	-	720.0000	1530	1871.5397		28.2000		51.9000	27	-	· 1	-	Γ
ium	mg/L	-	-	-	-	-	2.0000 5.9909	_	-	-	-	0.96			5.0000 0.4000	6 110	0.5000		-	1.6257 5.7660	-	41.4000 189.6000	65	96.6986 265.9524		1.5509 2.7120		0.5700	<1 <1	-	L · ·	-	4
n sium	mg/L mg/L		-	-	-	-	5.9909		-	-	-	2			1.8000	110	0.9280		-	3.0800	-	306.2000	403	265.9524 565.0706		8.0077		2.7300	2	-	\vdash	-	t
al	-																								-								Ť
issolved Solids	mg/L	-	-	-	-	-	3572.992		-	-	-	94.68	0	.107 1	30.624	1.8100	132.600)	-	464.8560	-	132.6000	5.7400	8095.1200	-	106.3280	-	110.9040	0.0850	-		-	4
Physical data to standing water																																	Ŧ
om TOC	m	-	-	-	-	-	16.802		-	-		8.7420	8	8.48 16	5.0140	1.68	8.4500		-	14.4820	-	1.2000	1.67	1.3520	-	17.4120	-	13.8440	16.18	-		-	
	pН	-	-	-	-	-	6.264	4.736	-	-		6.7800			.0900	5.36		6.2080	-	7.34	6.2600 -	6.5080 5.9220	6.91	7.3040 6.7680	-		5.2400 -	6.3960 5.5620	6.49	-	· 1	-	
uctivity	mS/cm	-	-	-	-	-	3630.000		-	-		11.300	0.	.165 23		2.82	0.342		-	322.000	-	5.550	9.11	8366.000	-	121.100		132.660	0.131	-	<u> </u>	-	4
erature	۰C	-	-	-	-	· ·	22.4420		-	-	- 2	2.3600	2	6. 79 2´	1.1500	25.98	22.604		-	21.3000	-	25.9820	27.49	22.5600	-	22.8200		23.1940	23.06	-	4 - 1	-	4

Warrell Creek to Nambucca Heads Pacific Highway Upgrade

Table 5 – Vibration Monitoring Result January 2017

				Vector	
Rec ID	DATE	TIME	Triggered	Sum	Description
	[Date]	[Time]	[Src]	[mm/s]	
397	2017-01-11	13:29:30	Continuous	0.198	Background
397	2017-01-11	13:30:00	Continuous	1.598	Roller ~20m away, heavy vibe
397	2017-01-11	13:30:30	Continuous	1.543	Roller ~20m away, heavy vibe
397	2017-01-11	13:31:00	Continuous	1.825	Roller ~20m away, heavy vibe
397	2017-01-11	13:31:30	Continuous	1.769	Roller ~20m away, heavy vibe
397	2017-01-11	13:32:00	Continuous	2.109	Roller ~20m away, heavy vibe
397	2017-01-11	13:32:30	Continuous	1.145	Roller ~20m away, heavy vibe
397	2017-01-11	13:33:00	Continuous	0.224	Background
397	2017-01-11	13:33:30	Continuous	0.194	Background
397	2017-01-11	13:34:00	Continuous	0.181	Background

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

Description of Works	Date	Time	Location	NCA	NML	Calculated Laeq	Distance to receiver (m)	Compliant	Principal sources/ operations	Notes
Floodplain Bridge 2 Impact Piling and concreting	21/1/2017	1:20pm	Wall St	2	40	40.5	620	Y	Piling	Piling activity now complete, permit re- issued for concreting works mainly. No complaints received during the activity.
BR12 abutment backfill	21/1/2017	10:43am	Old Coast Rd	6	38	30.3	580	Y	Backfilling, earthworks	

Figure 1 – Acoustic Investigation (Modelling) Results January 2017

SoundAdv				Paci Warn Chair
Noise Impact Assessment Rep	ort			01111
Report Details				
Report Date: Company:	23/11/201/ Pacific		Aeport Anference: Prepared by:	Concreting - eastern m N.Rutherford
Proposed Works				
Date of Proposed Works: Description of Works	Nev-April	Time of Proposed Works:	4am-7am M-F, 6-4 Sat	Work Duration:
Noise Prediction Details				
Expected Meteorological Conditions				
Wind Speed	Medium (30 - 36)		Wind Direction	South West
Cloud Cover	Clear		Temperature (Degrees C)	10 - 20 ° C
Relative Humidity (51)	< 55%		Time of Day	Night (7pm-dom M-F,
Proposed Equipment				
location	Number of Plant	Equipment	Usage Factor	Total Sound Power
ocation 14	8	Concrete Agitator	1	96
location 14	1	Wbrating Screed	0.5	101
Location 14	1	Concrete Vibrator Curing compound trailer	4.5 1	93 94
Location 14		UVs	<25%	75
Location 14	1	Backhee-Case 580 Super LE-Moving with alarm	0.25	100
Location 14	1	Tipper	<25%	88
Location 14	1	Rattle Gun	0.75	103
Noise Predictions				
Repeiver ID	Criteria	Predicted LAcy	Exceedence / Risk	Magnitude - d9(A)
112-4 SCOTTS HEAD ROAD, WAY WAY NSW 2447	40.0	3.4	No / Type 1	and/ound - only()
117-15 REID STREET, MACKSVILLE NSW 2447	39.0	29.6	No / Type 1	
131-DP826440, HARRIMANS LANE, MACKSVILLE N	39.0	20.8	No / Type 1	
48-1 REID STREET, MACKSVILLE NSW 2447	39.0	17.5	No / Type 1	
151-72 SCOTTS HEAD ROAD, WAY WAY NEW 2447	40.0	18.7	No / Type 1	
55-26 HAMIMANS LANE, MACKSVILLE NSW 2447		28.9	No / Type 1	
163-4 SCOTTS HEAD ROAD, WAY WAY NSW 2447 175-34 HARRIMANS LANE, NSW	40.0	11.5	No / Type 1	
19-58 HARRIMANS LANE, MACKSVILLE NSW 2447		22.3	No / Type 1 No / Type 1	
185-41 BALD HILL ROAD, MACKSVILLE NSW 2447	39.0	38.5	No / Type 1	
192-38 KERR DRIVE, MACKSVILLE NSW 2447	19.0	30.8	No / Type 1	
99-KERR DRIVE, MACKSVILLE NSW 2447	39.0	38.8	No / Type 1	
194-DP1014123, KERR DRIVE, MACKSVILLE NSW 24	39.0	25.7	No / Type 1	
197-54 BALD HEL ROAD, MACKSVILLE NSW 2447	39.0	75.8	Yes / Type 5	37.8
261-18 CONNORS CRESCENT, MACKSVILLE NSW 24		29.6	No / Type 1	
266-2 AINSWORTH CLOSE, MACKSVILLE NSW 2447	39.0	47.9	Yes / Type 4	5.9
302-58 BALD HILL ROAD, MACKSVILLE NSW 2447 342-226 SCOTTS HEAD ROAD, WAY WAY MSW 2442	36.0	27.7 27.3	Wo / Type 1 No / Type 1	
Bida				
nuse File 1 - Complies with assessment externa				
igar 2 - Loe Nels - Die 2 4664 alere printment	nitera			
ight 3 - Minuterate Risk - Justiful) to Scia(A) allows a				
Tune 4 - High Rick - More than EdR(A) -		* edite ale		

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

Notes: Name: Date: Signature: Position:

Required Mitigation Measures:

				Paci Warn Chair
loise Impact Assessment Rep	ort			Citat
leport Details				
eport Date: ompany:	23/11/201 Pacific		Report Reference: Prepared by:	Concreting Works - W
	Pacific		Prepared by:	N.Rutherford
Proposed Works				
ate of Proposed Works: escription of Works	Nov - April	Time of Proposed Works:	4am-7am, 6-7pm M-F, 4am-4p	m Sa Work Durotion:
loise Prediction Details				
spected Meteorological Conditions				
Vind Spred	Medium (10 - 16)		Wind Direction	South West
laud Cover elative Humidity (%)	Clear < 5516		Temperature (Degrees C) Time of Day	10 - 20 ° C Night (7pm-6am M-F,
	- 2010		conte of poly	wight (vpm-bam M-P,
roposed Equipment				
scation	Number of Plant	Equipment	Usage Factor	Total Sound Power
ocation 13	3	Concrete Agitator	1	96
ocation 13 ocation 13	1	Vibrating Screed	0.5	101
ocation 13	1	Concrete Vibrators Curing Compound trailer	0.5	93 94
cation 13	â	LV's	<25%	75
cation 13	1	Backhoe-Case 580 Super LE-Moving with alarm	0.25	100
cation 13	1	Tipper	<25%	88
ocation 13	1	Rattle Gun	0.75	103
loise Predictions				
sceiver ID	Criteria	Predicted LAeq	Exceedance / Risk	Mognitude - dB(A)
12-4 SCOTTS HEAD ROAD, WAY WAY NSW 2447	40.0	9.8	No / Type 1	
17-15 REID STREET, MACKSVILLE NSW 2447	39.0	24.7	No / Type 1	
31-DP826440, HARRIMANS LANE, MACKSVILLE N 10-1 REID STREET, MACKSVILLE NSW 2447		26.4	No / Type 1	
1-72 SCOTTS HEAD ROAD, WAY WAY NSW 2447	39.0 40.0	24.7	No / Type 1	
5-26 HARRIMANS LANE, MACKSVILLE NSW 2447		27.2	No / Type 1 No / Type 1	
53-4 SCOTTS HEAD ROAD, WAY WAY NSW 2447	40.0	12.2	No / Type 1	
75-34 HARRIMANS LANE, NSW	39.0	37.7	No / Type 1	
80-58 HARRIMANS LANE, MACKSVILLE NSW 2447		39.7	Yes / Type 2	0.7
6-41 BALD HILL ROAD, MACKSVILLE NSW 2447	39.0	43.7	Yes / Type B	4.7
2-38 KERR DRIVE, MACKSVILLE NSW 2447 13-KERR DRIVE, MACKSVILLE NSW 2447	39.0 39.0	17.7	No / Type 1	
M-DP1014123, KERR DRIVE, MACKSVILLE NSW 24		38.2 22.8	No / Type 1 No / Type 1	
7-54 BALD HILL ROAD, MACKSVILLE NSW 2447	39.0	43.0	Yes / Type 3	4.0
1-13 CONNORS CRESCENT, MACKSVILLE NSW 24		19.8	No / Type 1	4.0
66-2 AINSWORTH CLOSE, MACKSVILLE NSW 2447	39.0	34.2	No / Type 1	
2-98 BALD HILL ROAD, MACKSVILLE NSW 2447	39.0 35.0	16.9	No / Type 1	
12-228 SCOTTS HEAD ROAD, WAY WAY NSW 244		24.6	No / Type 1	
iske				
ypo 1 - Complies with assessment enteria ypo 2 - Low Risk - O to 2 d0(A) above reseesment				
ype 2 - towners - o to 2 do(n) above tosetoment ype 3 - thedreste Risk - 2d0(n) to 5d0(n) above s				
ype 4 - High Risk - More than 5dB(A) a		t criteria		
otes:				
lame:				
ate:		Reference of the second s		
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osition:				
equired Mitigation Measures:				
		1		

SoundAdvice

Noise Prediction and Management	Tool			Pacific
				Warrell G
Noise Impact Assessment Rep	ort			Chainag
Report Details				
Report Date:	13/01/201	7	Panart Pafaranaa	West survive surveyers of
Company:	13/01/201 AFJ		Report Reference: Prepared by:	Wet curing concrete C JH
Proposed Works				
Date of Proposed Works:	15/1-15/6/2017	Time of Proposed Works:	8-4pm Sat, Sun, public holidays	Work Duration:
Description of Works		Wet curing requires concrete to be kept wet		
Noise Prediction Details				
spected Meteorological Conditions				
Wind Speed	Strong (16 - 21)		Wind Direction	North West
Cloud Cover	Clear		Temperature (Degrees C)	10 - 20 ° C
Relative Humidity (%)	< 55%		Time of Day	Night (7pm-6am M-F,
Proposed Equipment				
ocation	Number of Plant	Equipment	Usage Factor	Total Sound Power
ocation 5	1	1" water pump	1	102
ocation 5	1	Ute	<25%	76
Noise Predictions				
Receiver ID	Criteria	Predicted LAeg	Exceedance / Risk	Admonthedo (D/A)
-760 UPPER WARRELL CREEK ROAD, CONGARINN		1.2	No / Type 1	Magnitude - dB(A)
-800 UPPER WARRELL CREEK ROAD, CONGARINN		1.2	No / Type 1	
-4201 PACIFIC HIGHWAY, EUNGAI CREEK NSW 24		4.1	No / Type 1	
-464 BROWNS CROSSING ROAD, WARRELL CREEK		7.5	No / Type 1	
4227 PACIFIC HIGHWAY, CONGARINNI NSW 2447		4.8	No / Type 1	
0-4317 PACIFIC HIGHWAY, WARRELL CREEK NSW	40.0	3.0	No / Type 1	
1-4263 PACIFIC HIGHWAY, CONGARINNI NSW 24-		8.2	No / Type 1	
2-4371 PACIFIC HIGHWAY, WARRELL CREEK NSW	40.0	1.5	No / Type 1	
6-DP755562, COCKBURNS LANE, WARRELL CREEK		15.8	No / Type 1	
9-73 COCKBURNS LANE, WARRELL CREEK NSW 24		20.2	No / Type 1	
2-4411 PACIFIC HIGHWAY, WARRELL CREEK NSW		1.3	No / Type 1	
9-4476 PACIFIC HIGHWAY, WARRELL CREEK NSW	40.0	1.1	No / Type 1	
5-4390 PACIFIC HIGHWAY, WARRELL CREEK NSW	40.0	1.4	No / Type 1	
1-196 ALBERT DRIVE, WARRELL CREEK NSW 2447	40.0	1.1	No / Type 1	
5-4478 PACIFIC HIGHWAY, WARRELL CREEK NSW	40.0	1.1	No / Type 1	
9-46 ROSEWOOD ROAD, WARRELL CREEK NSW 24		1.1	No / Type 1	
0-180 ROSEWOOD ROAD, WARRELL CREEK NSW 2		5.8	No / Type 1	
54-69 ROSEWOOD ROAD, WARRELL CREEK NSW 24		1.1	No / Type 1	
56-174 ROSEWOOD ROAD, WARRELL CREEK NSW 2		2.3	No / Type 1	
58-91 ROSEWOOD ROAD, WARRELL CREEK NSW 24		6.5	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: Worst case wind direction

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

SoundAdvice-

Noise Prediction and Management Tool

Noise Impact Assessment Report

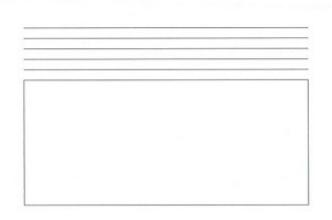
Pacific Highway Upgrade Warrell Creek to Nambucca Heads Chainage 56,400 - 58,400

Noise Impact Assessment	Report				
Report Details				Paver washout 57600	aath
Report Date:	17/01/2013	7	Report Reference:	JH	ndern
Company:	AFJ	/	Prepared by:	JH	
Company					
Proposed Works					
		Time of Proposed Works:	6-8pm	Work Duration:	M-F
Date of Proposed Works:		Paver washout after paving run completed			
Description of Works		Parel Massour and Parels			
Noise Prediction Details					
Expected Meteorological Conditions			Wind Direction	East	
Wind Speed	Strong (16 - 21)		Temperature (Degrees C)	10 - 20 ° C	
Cloud Cover	Clear		Time of Day	Night (7pm-6am M-F,	, 4pm-7am Sat, all day Sunday)
Relative Humidity (%)	< 55%				
Proposed Equipment			the sector	Total Sound Power	
Location	Number of Plant	Equipment	Usage Factor	101	
Location 10	1	Paver washout	0.5	76	
Location 10	1	Ute	<25%	101	
Location 14	1	Paver washout	<25%	76	
Location 14	2	Ute	0.5	101	
Location 9	1	Paver washout	0.5	83	
Location 9	1	Ute	0.5		
Noise Predictions					
Receiver ID	Criteria	Predicted LAeg	Exceedance / Risk	Magnitude - dB(A)	
426-537 OLD COAST ROAD, NORTH MACK	SVILLE NS 38.0	10.5	No/Type1		
490-459 OLD COAST ROAD, NORTH MACK		17.9	No/Type1		
492-469 OLD COAST ROAD, NORTH MACK	SVILLE NS 38.0	15.6	No/Type1		
493-37 SIDING ROAD, NEWEE CREEK NSW	2447 38.0	12.4	No/Type1		
495-OLD COAST ROAD, NORTH MACKSVIL		25.1	No / Type 1		
496-539 OLD COAST ROAD, NORTH MACK		16.6	No / Type 1		
497-72 SIDING ROAD, NEWEE CREEK NSW	2447 38.0	11.6	No / Type 1		
501-525 OLD COAST ROAD, NORTH MACK	SVILLE NS 38.0	20.9	No / Type 1 No / Type 1		
503-219 FLORENCE WILMONT DRIVE, NAI	MBUCCA I 38.0	19.2	No / Type 1		
505-1 SIDING ROAD, NORTH MACKSVILLE	NSW 244 38.0	18.3 13.6	No/Type 1		
514-197 FLORENCE WILMONT DRIVE, NA	MBUCCA F 38.0	13.6	No/Type1		
515-3 CHARLES PLACE, NAMBUCCA HEAD		15.4	No/Type1		
518-18 SIDING ROAD, NORTH MACKSVILL	E NSW 24 38.0	9.6	No / Type 1		
529-169 FLORENCE WILMONT DRIVE, NA		12.2	No / Type 1		
532-23 CHARLES PLACE, NAMBUCCA HEA	DS NSW 2 38.0	10.0	No/Type 1		
543-33 CHARLES PLACE, NAMBUCCA HEA	IDS NSW 2 58.0	2010			
<u>.</u>					
Risk:	ria.				
Type 1 - Complies with assessment crite Type 2 - Low Risk - 0 to 2 dB(A) above as	sessment criteria				
Type 3 - Moderate Risk - 2dB(A) to 5dB(Al above assessment criteria				
Type 4 - High Risk - More than 5dB(A) at	owe assessment criteria				
Notes:					
Worst case wind direction					
and at case while an entering					
Name:					
Date:					
Signature:					
Position:					
		-			
Required Mitigation Measures					

SoundAdvice

Noise Prediction and Manageme	ent Tool				Pacific Highway Upgrade Warrell Creek to Nambucca Heads Chainage 58,400 - 61,300
Noise Impact Assessment Rep	port				
Report Details					
Repart Date:	17/01/2017		Report Reference:	Paver washout \$8400	-61300
Company:	AFJV		Prepared by:	HL	
Proposed Works					
Date of Proposed Works:		Time of Proposed Works:	6-8pm	Work Duration:	M-F
Description of Works		Paver washout after paving run			
Noise Prediction Details					
Expected Meteorological Conditions					
Wind Speed	Strong (16 - 21)		Wind Direction	East	
Cloud Cover	Clear		Temperature (Degrees C)	30-20*C	
Relative Humidity (%)	< 55%		Time of Day	Night (7pm-6am M-F,	4pm-7am Sat, all day Sunday)
Proposed Equipment					
Location	Number of Flant	Equipment	Usage Factor	Total Sound Power	
Location 1	1	Paver washout	0.5	101	
Location 1	2	Ute	<25%	76	
Location 11	1	Paver washout	0.5	101	
Location 11	1	Ute	<25%	76	
Noise Predictions					
Receiver ID	Critevia	Predicted LAeg	Exceedance / Aisk	Magnitude - d8(A)	
RECEIVER OF 518-18 SIDING ROAD, NORTH MACKSVILLE NSW 2		11.5	No/Type 1	wednesse . nated	
548-3 COCDS COURT, NAMBUCCA HEADS NSW 2		1.7	No/Type 1		
589-10 ALEXANDRA DRIVE, NAMBUCCA HEADS N		3.3	No/Type 1		
611-15 ALEKANDRA DRIVE, NAMBUCCA HEADS N		2.6	No/Type 1		
618-2 BANGALOW DRIVE, NAMBUCCA HEADS NS		2.6	No/Type 1		
633-2 ROYALE COURT, NAMBUCCA HEADS NSW 2		2.4	No/Type 1		
•					
Risk:					
Type 1 - Complies with assessment criteria					
Type 2 - Low Risk - 0 to 2 dB(A) above assessmen					
Type 3 - Moderate Risk - 2dB(A) to 5dB(A) above					
Type 4 - High Risk - More than SdB(A) above ass	essment criteria				
Notes: Worst case wind direction					
work care what arecton					

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



Pacific High

SoundAdvice-

Noise Prediction and Management Tool

Noise Impect Accessment Ren				Warrell Cree Chainage 45
Noise Impact Assessment Rep Report Details	ort			
Report Date:	20/01/201	7	Report Reference:	Albert Drive Concrete F
Company:	Papitic		Prepared by:	N.Rutherford
Proposed Works				
Date of Proposed Works:	21/1/17	Time of Proposed Works;	7am-3am	Work Duration:
Description of Works	21/1/17	rane of Proposed Works:	7am-apm	werk peranen:
Description of House				
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	Extended Hours
Proposed Equipment				
Location	Number of Plant	Equipment	Usage Factor	Tatal Sound Power
Location 9	1	Concrete Pump + Cement Mixer Truck B t / 350 ba	r 0.75	94
Location 9	1	Water Cart	0.5	104
Noise Predictions				
Receiver ID	Critenia	Predicted LAeg	Exceedance / Risk	Magnitude - dB(A)
28-425 UPPER WARRELL CREEK ROAD, CONGARIN	45.0	8.4	No / Type 1	
42-395 UPPER WARRELL CREEK ROAD, CONGARIN		11.6	No / Type 1	
48-13A SONNYS LANE, WARRELL CREEK NSW 2447		8.1	No / Type 1	
51-196 ALBERT DRIVE, WARRELL CREEK NSW 2447		10.6	No / Type 1	
55-4478 PACIFIC HIGHWAY, WARRELL CREEK NSW		8.2	No/Type 1	
57-153 ALBERT DRIVE, WARRELL CREEK NSW 2447		16.9	No / Type 1	
58-19 ROSEWOOD ROAD, WARRELL CREEK NSW 2		17.5	No/Type 1	
59-46 ROSEWOOD ROAD, WARRELL CREEK NSW 2		11.3 26.4	No / Type 1 No / Type 1	
61-124 ALBERT ORIVE, WARRELL CREEK NSW 2447 63-115 ALBERT ORIVE, WARRELL CREEK NSW 2447		37.0	No/Type 1 No/Type 1	
64-69 ROSEWOOD ROAD, WARRELL CREEK NSW 2447	1.014	12.1	No / Type 1	
68-91 ROSEWOOD ROAD, WARRELL CREEK NSW 2		84	No/Type 1	
71-DP1150527, ROSEWOOD ROAD, WARRELL CREEK HARVE		5.7	No / Type 1	
74-73 ALBERT DRIVE, WARRELL CREEK NSW 2447	45,0	34.0	No / Type 1	
77-62 O'DELLS ROAD, WARRELL CREEK NSW 2447	40.0	19.0	No / Type 1	
81-40 ALBERT DRIVE, DONNELLYVILLE NSW 2447	45.0	25.1	No / Type 1	
89-33 O'DELLS ROAO, DONNELLYVILLE NSW 2447	45.0	16.6	No / Type 1	
93-8 MAIN STREET, DONNELLYVILLE NSW 2447	45.0	18.2	No / Type 1	
100-17 ALBERT DRIVE, DONNELLYVILLE NSW 2447	45.D	12.6	No / Type 1	
111-12 PARKINS CLOSE, WARRELL CREEK NSW 244	40.D	14.1	No / Type 1	

Risk:

Risk: Type 1 - Complies with assessment criteria Type 2 - Low Risk - 0 to 2 dB(A) above assessment criteria Type 3 - Moderate Risk - 2d8(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:

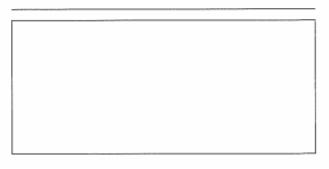
Monthly Report

SoundAdvice-

Noise Prediction and Management Tool

an aut Datalla				
eport Details				
nport Date:	20/01/201		Report Reference:	BR12 Backfill
ALIGNUE:	Pacific	D	Prepared by:	N.Rutherford
roposed Works				
ste of Proposed Works:	2/01/17-12/02/17	Time of Proposed Works:	7em-5pm Sundays	Work Duration:
escription of Works				
loise Prediction Details				
pacted Meteorological Conditions				
	itrong (16 - 21)		Wind Direction	South West
oud Cover 0	Sear		Temperature (Degrees C)	10-20°C
slative Hamildity (%)	55%		Time of Doy	Night (7pm-6am M-F, 4
roposed Equipment				
cotion	Number of Plant	Equipment	Usage Factor	Total Sound Power
cation 18	1	Excavator 20T - 50T - loading	0.75	108
cation 13	1	xy 30T articulated dump truck-CAT730-Moving forv	0.75	111
cation 15	1	Water Cart	0.25	101
cation 13	3	ooth barrel roller 7T-Dynapac CA15-Moving with all	0.75	113
cation 18	2	Wacker Packer	0.5	105
loise Predictions				
regiver ID	Criteria	Predicted LAeg	Exceedance / Risk	Mognitude - dB(A)
18-18 SIDING ROAD, NORTH MACKSVILLE NEW 24	38.0	9.8	No / Type 1	
48-3 COCOS COURT, NAMBUCCA HEADS NSW 244	44.0	26.8	No / Type 1	
19-10 ALEXANDRA DRIVE, NAMBUCCA HEADS NSA	44.0	35.3	No / Type 1	
11-15 ALEXANDRA DRIVE, NAMBUCCA HEADS NSA	44.0	27.3	No / Type 1	
18-2 BANGALOW DRIVE, NAMBUCCA HEADS NSW	44.0	32.0	No / Type 1	
13-2 ROYALE COURT, NAMBUCCA HEADS NSW 24	44.0	32.0	No / Type 1	
ski				
pe 1 - Complies with assessment oriteria				
pp 2 - Low Risk - 0 to 2 dD(A) above assessment of	riteria			
rpe 3 - Moderate Risk - 2dB(A) to 5dB(A) above as	construct priticia			

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



Noise Prediction and Managemen	t Tool			Pacific
				Warrell Chaina
Noise Impact Assessment Rep	ort			
Report Details	8/12/2016		Report Reference:	Early Start at Upper V
Company:	Pacifico		Prepared by:	N.Rutherford
Proposed Works				
Date of Proposed Works: Description of Works	Dec 2016 -feb 2017	Time of Proposed Works:	4am-7am M-F, 4am-8am, 1pm-	4pm Werk Durotion:
Noise Prediction Details				
Wind Speed	Medium (10 - 16)		Wind Direction	South West
Cloud Cover	Clear		Temperature (Degrees C)	10 - 20 ° C
Relative Humidity (%)	< 55%		Time of Day	Night (7pm-6am M-F,
Proposed Equipment				
location	Number of Plant	Equipment	Usage Factor	Total Sound Power
Location 4	1	Concrete Pump + Cement Mixer Truck 8 t / 350 bar		94 95
Location 4	1	Concrete Agitator Concrete Vibrator	0.75	99 97
Location 4	1	Crane - SD -100T (160kW)	0.25	98
ocation 4	,	Handtools	0.75	93
Location 4	1	BG28 Piling Rig	0.75	104
Notes Basellations				
Noise Predictions	Criteria	Predicted LAeg	Exceedance / Risk	Magnitude - dB(A)
1-76D UPPER WARRELL CREEK ROAD, CONGARINA		17.7	No / Type 1	
8-BOD UPPER WARRELL CREEK ROAD, CONGARINE	40.0	17.0	No / Type 1	
4-4201 PACIFIC HIGHWAY, EUNGAI CREEK NSW 2		25.0	No / Type 1	
5-464 BROWINS CROSSING ROAD, WARRELL CREE 5-4227 PACIFIC HIGHWAY, CONGARINNI NSW 244		21.0 35.6	No / Type 1 No / Type 1	
10-4317 PACIFIC HIGHWAY, CONGARINAN MAY 24-		29.4	No/Type1	
11-4263 PACIFIC HIGHWAY, CONGARINNI NSW 24		44.7	Yes / Type 3	4.7
12-4371 PACIFIC HIGHWAY, WARREUL CREEK NSW	40.0	22.9	No / Type 1	
16-DP755562, COCKBURNS LANE, WARRELL CREE		39.2	No / Type 1	
19-73 COCKBURNS LANE, WARRELL CREEK NSW 2		50.6	Yes / Type 5	10.6
22-4411 PACIFIC HIGHWAY, WARRELL CREEK NSW 39-4476 PACIFIC HIGHWAY, WARRELL CREEK NSW		20.3	No / Type 1 No / Type 1	
45-4390 PACIFIC HIGHWAY, WARRELL CREEK NSW		19.6	No / Type 1	
51-196 ALBERT DRIVE, WARRELL CREEK NSW 244		12.5	No / Type 1	
55-4478 PACIFIC HIGHWAY, WARRELL CREEK NSW		15.2	No / Type 1	
59-46 ROSEWOOD ROAD, WARRELL CREEK NSW 2		12.5	No / Type 1	
60-180 ROSEWOOD ROAD, WARREUL CREEK NSW		17.2	No/Type1 No/Type1	
64-69 ROSEWOOD ROAD, WARRELL CREEK NSW 2 66-174 ROSEWOOD ROAD, WARRELL CREEK NSW		8.5	No/Type1 No/Type1	
68-91 ROSEWOOD ROAD, WARRELL CREEK NSW 2		12.6	No / Type 1	
Risk:				
Type I - Complies with assessment critoria Type 2 - Low Risk - 0 to 2 dD[A] above assessmen	et criteria			
Type 3 - Moderate Risk - 2dB(A) to 5dB(A) above				
Type 4 - High Risk - More than 5dB(A)	above assessmen	t criteria		
Notes:				
Nome:				
Date:				
Signature:				
Position:				
Required Mitigation Measures:				

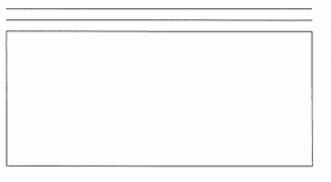
SoundAdvice-

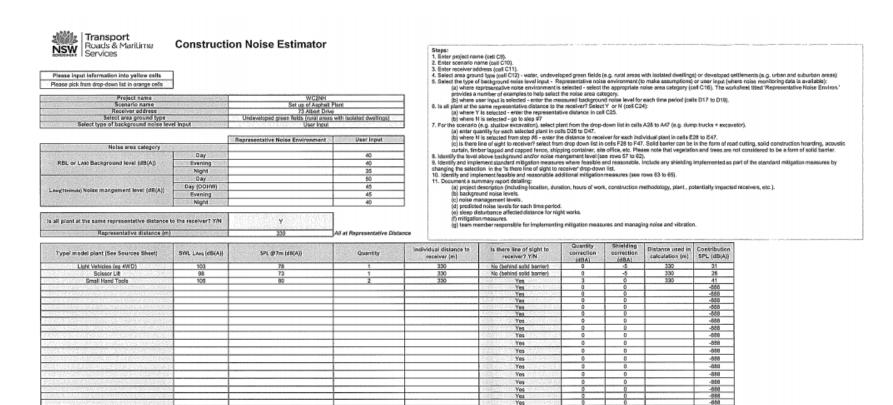
Noise Prediction and Management Tool

Report Details				
Report Date:	27/01/2013		Repart Reference:	BR12 Concreting, Insta
Company:	Pacifico	, ,	Prepared by:	N.Rutherford
Proposed Works				
Date of Proposed Works; Description of Works	27/01/17-31/08/17	Time of Proposed Works:	Sam-7pm M-F, 7am-7pm Sat, 7	am-; Work Duration:
Noise Prediction Details				
Expected Meteorological Conditions				
	Strong (16 - 21)		Wind Direction	South West
	Clear		Temperature (Degrees C)	10 - 20 * C
Relative Humidity (%)	< 55%		Time of Day	Night (7pm-6am M-F,
Proposed Equipment				
location	Number of Plant	Equipment	Usage Factor	Total Sound Power
location 13	1	Concrete Pump + Cement Mixer Truck 8 t / 350 bar	0.75	94
location 13	2	Concrete Agitator	0.75	95
location 13	5	Electric power tools	0.5	91
location 13	5 LV's		<25%	75
location 13	1	Franna - 25T	<2586	93
location 13	1	EWP	0.5	86
location 13	1	Compressor	0.5	97
location 13	4	Concrete vibrators	0.75	99
location 18	2	Vibrating screed	0.5	301
Noise Predictions				
Receiver ID	Criteria	Predicted LAep	Exceedance / Alak	Megnitude - dS(A)
518-18 SIDING ROAD, NORTH MACKSVILLE NSW 24	38.0	7.5	No / Type 1	
548-3 COCOS COURT, NAMBUCCA HEADS NSW 244	44.0	22.7	No / Type 1	
89-10 ALEXANDRA DRIVE, NAMBUCCA HEADS NSV	44.0	29.8	No / Type 1	
511-15 ALEXANDRA DRIVE, NAMBUCCA HEADS NSV	44.0	22.8	No / Type 1	
518-2 BANGALOW DRIVE, NAMBUCCA HEADS NSW	44.0	26.1	No / Type 1	
533-2 ROYALE COURT, NAMBUCCA HEADS NSW 24	44.0	26.1	No / Type 1	

Hasis Type 2 - Compiles with assessment criteria Type 2 - Low Risk - 0 to 2 dB(A) above assessment criteria Type 4 - 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:





		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 outle
	Standard hours	50	55	65	55	65	60	75	70
Voise stanegement cever (ob(A))	Day (OOHW)	45	55	63	\$5	65	60	75	50 Charles 70 (2011
	OOHW Period 1	45	1935	65		65	60	75	55 (11.5 m) 70 (15.5
	ODHW Period 2	49	10.025	65	55	2		75	70
Level above background (dB(A)) Day (ODHW ODHW Period	Standard hours	4	2014						
	Day (OOHW)	1	329						
	ODHW Period 1	1	004						
	OOHW Period 2	6	(Contraction)						
Level above NML (dB(A)) Day (DDH OOHW Peri OOHW Peri	Standard hours			and the second second second second	and the second state of the second	 antitication state 	ALL STREET	Carles State	
	Day (DDHW)		en el construction de la construcción de la		and the second second second	STREET, STREET, ST	1. 6.2 5 5 6 6 6 6 7 9 10 1		8-750012385080
	OOHW Period 1		8455	CERTIFICATION AND A STATE OF A ST	one Address Transmission	 Approximation and a second seco	A REAL PROPERTY.	NAMES OF A DESCRIPTION OF	G. Distantistante
	OOHW Period 2	1	ânter	Distriction of the second second		100 C			S Scholtzpeline States
distribution of an distantions and an and	Standard Hours		ten stand entre house and	Contraction - Contraction -	AND ALL AND AND AND A COMPANY AND A COMPANY	P Provide Street of	(entrole=tespint	Constitute - Internation	S CONTRACTOR CONTRACTOR
		Strange and the state of the second se	CALL AND ADDRESS . A MAD DO TO THE	1980 Investigation of the second state of the	Addition of the second s	C DODALAS MONTON	 Manufacture Advances 	standard the second	Contraction and the
Additional millination mansures	Day (OOHW)	restancies in the desired in the second restance has	STOL INSIDE WORKSTONDERS						
Additional mitigation measures	OOHW Period 1 OOHW Period 2	Ň	000	-		-	and a subscript	erreizie - terreiz	

Abbreviation	Measure		
N	Notification (letterbox drop or equivalent		
SN	Specific notifications		
PC	Phone calls		