APPENDIX B6

Construction Air Quality Management Sub Plan

Sancrox Traffic Arrangement Project

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Appendix A Dust catchment areas and sensitive receivers

Glossary / Abbreviations

CAQMP	Construction Air Quality Management Sub Plan
CEMP	Construction Environmental Management Plan
CoA	Condition of Approval
DEC	Department of Environment and Conservation
EA	Environmental Assessment
EEC	Endangered Ecological Community
EPA	Environment Protection Authority
EP&A Act	*Environmental Planning and Assessment Act 1979*
EPL	Environmental Protection Licence
ER	Environmental Representative
ESR	Environmental Site Representative
EWMS	Environmental Work Method Statements
FAA	Ferrovial Agroman Australia
FM Act	*Fisheries Management Act 1994*
NERDDC	National Energy Research, Development and Demonstration Council
NEPM	National Environment Protection Meassures
NOW	NSW Office of Water
OEH	NSW Office of Environment and Heritage
PESCP	Progressive Erosion and Sediment Control Plan
PM	FAA Project Manager
POEO Act	Protection of the Environment Operations Act 1997
PESCPs	Progressive Erosion Sediment Control Plans
Project, The	Sancrox Traffic Arrangement Project
Q&E Manager	FAA Quality & Environmental Manager
SoC	Revised Statement of Commitments included in the Submissions Report
SWMP	Soil and Water Management Plan

1 Introduction

1.1 Context

This Air Quality Management Sub Plan (CAQMP or Plan) forms part of the Construction Environmental Management Plan (CEMP) for the Sancrox Traffic Arrangement (the Project) works which is part of the upgrade of the Pacific Highway between Oxley Highway and Kempsey (the Project).

This CAQMP has been prepared to address the requirements of the Minister's Conditions of Approval (CoA), the Roads and Maritime's Statement of Commitments (SoC), the mitigation measures listed in the Oxley Highway to Kempsey Environmental Assessment (EA) and all applicable legislation.

1.2 Background

The Oxley Highway to Kempsey – Upgrading the Pacific Highway – Environmental Assessment (Road and Maritime Services 2010) assessed air quality impacts from the Project in Chapter 20.

The EA identified the potential for minor impacts on air quality during construction typically associated with dust. However, concluded any potential impacts could be managed by standard mitigation and management measures.

1.3 Environmental Management Systems Overview

The overall Environmental Management System for the Project is described in the Construction Environmental Management Plan (CEMP).

The CAQMP is part of the Ferrovial Agroman Australia **(FAA)** Environmental Management framework for the Project, as described in Section 4.1 of the CEMP. Management measures identified in this Plan will be incorporated into site or activity specific Environmental Work Method Statements (EWMS).

EWMS will be developed and signed off by Environment and Management representatives prior to associated works and construction personnel will be required to undertake works in accordance with the identified requirements and associated mitigation measures.

Used together, the CEMP, strategies, procedures and EWMS form management guides that clearly identify required Environmental Management actions for reference by **FAA** personnel and contractors.

The review and document control processes for this CAQMP are described in Chapters 9 and 10 of the CEMP.

2 Purpose and objectives

2.1 Purpose

The purpose of this Plan is to describe how for the Project, **FAA** proposes to manage and protect air quality during construction of the Project.

2.2 Objectives

The key objective of the CAQMP is to ensure that impacts air quality are minimised and within the scope permitted by the planning approval. To achieve this objective, **FAA** will undertake the following:

- Ensure appropriate controls and procedures are implemented during construction activities to avoid or minimise air quality impacts and potential adverse impacts to the sensitive receivers along the Project corridor.
- Ensure appropriate measures are implemented to address the relevant CoA and SoC outlined in Table 3-1 and Table 3-2, and the mitigation measures detailed in the EA.
- Ensure appropriate measures are implemented to comply with all relevant legislation and other requirements as described in Section 3.1 of this Plan.

Refer to sections 5.9 and 6 of the Construction Waste and Energy Management Sub Plan for measures to reduce greenhouse gas emissions during construction.

2.3 Targets

The following targets have been established for the management of air quality impacts during construction of the Project:

- Ensure full compliance with the relevant legislative requirements, CoA and SoC.
- Implement feasible and reasonable air quality control measures with the aim of constructing the Project in a manner that minimises dust emissions from the site.
- Complaints from the community and stakeholders are minimised and managed.

3 Environmental requirements

3.1 Relevant legislation and guidelines

3.1.1 Legislation

Legislation relevant to air quality management includes:

- Environmental Planning and Assessment Act 1979 (EP&A Act).
- Protection of the Environment Operations Act 1997 (POEO Act).
- National Greenhouse and Energy Reporting Act 2007.

Relevant provisions of the above legislation are explained in the register of legal and other requirements included in Appendix A1 of the CEMP. Matters relating to the *National Greenhouse and Energy Reporting Act 2007* are addressed in the Waste and Energy Management Sub Plan.

3.1.2 Guidelines and standards

The main guidelines, specifications and policy documents relevant to this Plan include:

- National Environment Protection Council's (NEPC) – NEPM for Ambient Air Quality Guidelines.
- Protection of the Environment Operations (Clean Air) Regulation, 2002.
- AS 2922 Ambient Air Guide for Citing of Sampling Equipment.
- AS 3580.10.1-1991 Methods of Sampling Analysis of Ambient Air.
- Action for Air 1998 (NSW DEC).
- Approved Methods and Guidance for the Modeling and Assessment of Air Pollutants in NSW (DEC 2005).
- Air Quality Monitoring Criteria for Deposited Dust (DEC Guideline), Refer to Table 5-1 below.

3.2 Minister's Conditions of Approval

The CoA relevant to this Plan are listed Table 3-1 below. A cross reference is also included to indicate where the condition is addressed in this Plan or other Project Management documents.

Table 3-1 Conditions of Approval relevant to the CAQMP

CoA No.	Condition Requirements	Document Reference
B30(e)(i)	Measures to monitor and manage dust emissions including dust from stockpiles, blasting, traffic on unsealed public roads and materials tracking from construction sites onto public roads.	Table 7-1
C2	The Proponent shall employ feasible and reasonable measures (including cessation of relevant works, as appropriate) to ensure that the project is constructed in a manner that minimises dust generation including wind-blown, traffic-generated dust, dust from stockpiles and material tracking from construction and ancillary facility sites onto public roads.	Table 7-1

3.3 Statement of commitments

Relevant SoC are listed Table 3-2 below. This includes reference to required outcomes, the timing of when the commitment applies, relevant documents or sections of the environmental assessment influencing the outcome and implementation.

Table 3-2 Statements of commitment relevant to this CAQMP

Outcome	Ref #	Commitment	Timing	CAQMP Reference
Minimise dust generation and impact to sensitive receivers.	AQ1	Feasible and reasonable mitigation measures will be adopted to minimise windblown, traffic-generated or equipment-generated dust and emissions.	Construction	Table 7-1
	AQ2	Dust generating activities will stop where visible dust is being emitted outside the construction corridor and dust suppression measures are ineffective.	Construction	Table 7-1

4 Existing environment

The following sections summarise what is known about factors influencing air quality within and adjacent to the Project corridor.

The key reference document is Section 20.1 of the EA.

4.1 Air quality records

Local air conditions in the Project area are not influenced by large-scale industrial land uses, exposed soil areas or burning of material and are therefore considered to be good quality.

Long-term monitoring is not usually undertaken outside metropolitan and/or industrial areas, because pollutants typically do not exist in concentrations that would cause adverse environmental or health impacts. However, there has been short-term air quality monitoring adjacent to a dual carriageway section of the Pacific Highway at Korora, which is located in an urban area approximately 120 kilometres north of Kempsey. A monitoring station was established at Korora to monitor the ambient air quality from October 2005 to January 2007.

Table 4-1 Korora air quality monitoring results

Pollutant	Averaging period	NEPM goals		Korora monitoring results	
		Maximum concentration	10-year goal (max allowable exceedence)	Maximum recorded concentration	Average recorded concentration
National standards and goals for ambient air quality					
Carbon monoxide	8 hr	9.0 ppm (10mg/m^3)	1 day a year	0.2 ppm (0.3 mg/m^3)	0.03 ppm (0.04 mg/m^3)
Nitrogen dioxide	1 hr	0.12 ppm (246 µg/m^3)	1 day a year	0.036 ppm (73.8 µg/m^3)	0.004 ppm (9.2 µg/m^3)
Particles as PM_{10}	1 day	50 µg/m^3	5 days a year	37.8 µg/m^3	20.3 µg/m^3
Advisory reporting goals					
$PM_{2.5}$	1 day	25 µg/m^3	Gather data to facilitate review of goal	15.4 µg/m^3	7.7 µg/m^3

Results of the monitoring at Korora showed that all levels were well below NEPM air quality goals.

4.2 Rainfall, soil dryness and wind

The rainfall records from Port Macquarie have been selected to reflect the potential rainfall conditions across the Project site due to the proximity of the Bureau of Meteorology's weather station to the overall site. A summary of the rainfall records from the Bureau of Meteorology is provided in Table 4-2.

Table 4-2 Summary of rainfall records

Summary of Rainfall Records to Present													
	Summer/Autumn						Winter/Spring						
	Dec	Jan	Feb	Mar	Apr	Ma	Jun	July	Aug	Sep	Oct	Nov	Year
Station: Port Macquarie Airport Available records: 1995 – present													
Mean rainfall (mm)	104.8	149.1	172.6	165.7	151.4	112.2	152.5	73.5	62.1	63.5	76.1	158.1	1437.3
Mean rain days	9.3	8.8	10.6	10.9	9.3	8.4	7.5	6.9	5.7	5.5	7.6	10.7	101.2

The above table provides a consideration of typical climatic factors that contribute to the proliferation of dust particulates. In addition to the exposure of unconsolidated material during construction e.g. earthworks, climatic factors such as prolonged dry weather, combined with high winds, can increase the likelihood of dust particulate emissions.

The Project is located in the vicinity of Port Macquarie. This locality has a humid subtropical climate. Rainfall is typically higher during summer and autumn. Winter and spring are typically drier periods during the year. Rainfall reduces the risk of dust generation during construction.

Wind data from Port Macquarie has been selected to predict the likely wind speed and across the Project site (http://www.bom.gov.au/climate/averages/wind). Seasonal wind conditions at Port Macquarie are characterised by the following wind speed and directions:

- Spring and Summer months:
- Morning: Moderate (10-20 km/hr) wind speeds from the south west
- Afternoon: Moderate (10-20 km/hr) to high wind (20-30 km/hr) speeds from the north east.
- Autumn and Winter months:
- Morning: Calm to low (0-10 km/hr) wind speeds from the west
- Afternoon: Moderate (10-20km/hr) wind speeds from the north east.

According to the above information dust and suspended particles have the potential to be transported in the direction of the south west during strongest wind events in the afternoon.

However on review of receivers the most sensitive receiver is located to the North East. Cassegrains Winery – this business includes a vineyard and outdoor dining restaurant, in addition to other major functions in their grounds and as such weddings and concerts. The impact of any dust- air pollutants would have a significant impact and as such has been chosen for the monitoring location.

Key considerations for monitoring location shown in Appendix A:

- Most sensitive receiver located in the NE
- Receivers in the SW – residential buffered by 100m bushland/ forest

Business industrial storage areas

Location has been determined in consultation with EPA and the ER.

Note: Initial monitoring prior to works commencing will provide a base line of airborne pollutants given Fernbank Creek Road to the East is a dirt road and is subject to high traffic volumes during outdoor concerts at the Vineyard that can attract 2-3,000 visitors for the event. The location is also in close proximity to the quarry located to the west of the monitoring station that may also impact the monitoring station. If baseline readings are high before works commence consideration may be given to reviewing the location of the monitoring location in consultation with the EPA and ER.

4.3 Soil type and characteristics

The soil types along the Project are described in Table 4-3, with an indication of the potential for wind erosion.

Table 4-3 Soil type and characteristics

Chainage	Hole number	Soil type	Structure
	(A-BH-1003)	*Clay*	*Alluvium*
280	*(A-BH-1004)*	*Sandy Clay*	*Top soil*
	(A-BH-1006)	Clay	Top soil
	(A-BH-1007)	Clay	Top soil
	(A-BH-1008)	*Sandy Clay*	*Top soil and residual soil*
	(A-BH-1009)	*Gravel Clay*	*Top soil*
960	*(A-BH-1011)*	*Sandy Clay*	*Top soil*
	(A-LDC-1001)	*Sandy*	*Topsoil*
	(A-LDC-1002)	*Clay*	*Topsoil)*
940	*(ASR-BH-1001)*	*Clay*	*Alluvium*
960	*(ASR-BH-1002)*	*Clay*	*Residual soil*
	(ASR-BH-1003)	*Sandy Clay*	*Top soil*
	(ASR-BH-1003)	*Clay*	*Alluvium*
	ASR-BH-1004)	*Clay*	*Top soil*
	(ASR-BH-1006)	*Clay*	*Fill*
	(ASR-BH-1007)	*Clay*	*Top soil*
240	*(ASR-BH-2001)*	*Clay*	*Residual soil*
300	*(ASR-BH-2002)*	*Sand*	*Fill*
80	*(ASR-BH-2003)*	*Sand*	*Top soil*
60	*(ASR-BH-2004)*	*Clay*	*Top soil*
740	*(ASR-BH-2005)*	*Silts Sand*	*Top soil - Fill*
950	*(ASR-BH-3001)*	*Clay*	*Top soil*
1000	*(ASR-BH-3002-A)*	*Clay*	*Top soil – Fill*
960	*(ASR-BH-3002-B)*	*Clay*	*Top soil*
1300	*(ASR-BH-3003)*	*Clay*	*Top soil*
1400	*(ASR-BH-3004)*	*Clay*	*Top soil*
360	*(ASR-BH-3005)*	*Silt*	*Top soil*
480	*(ASR-BH-3006)*	*Silt white sand*	*Top soil*

Figure 4-1 below shows soft soils along the Project.

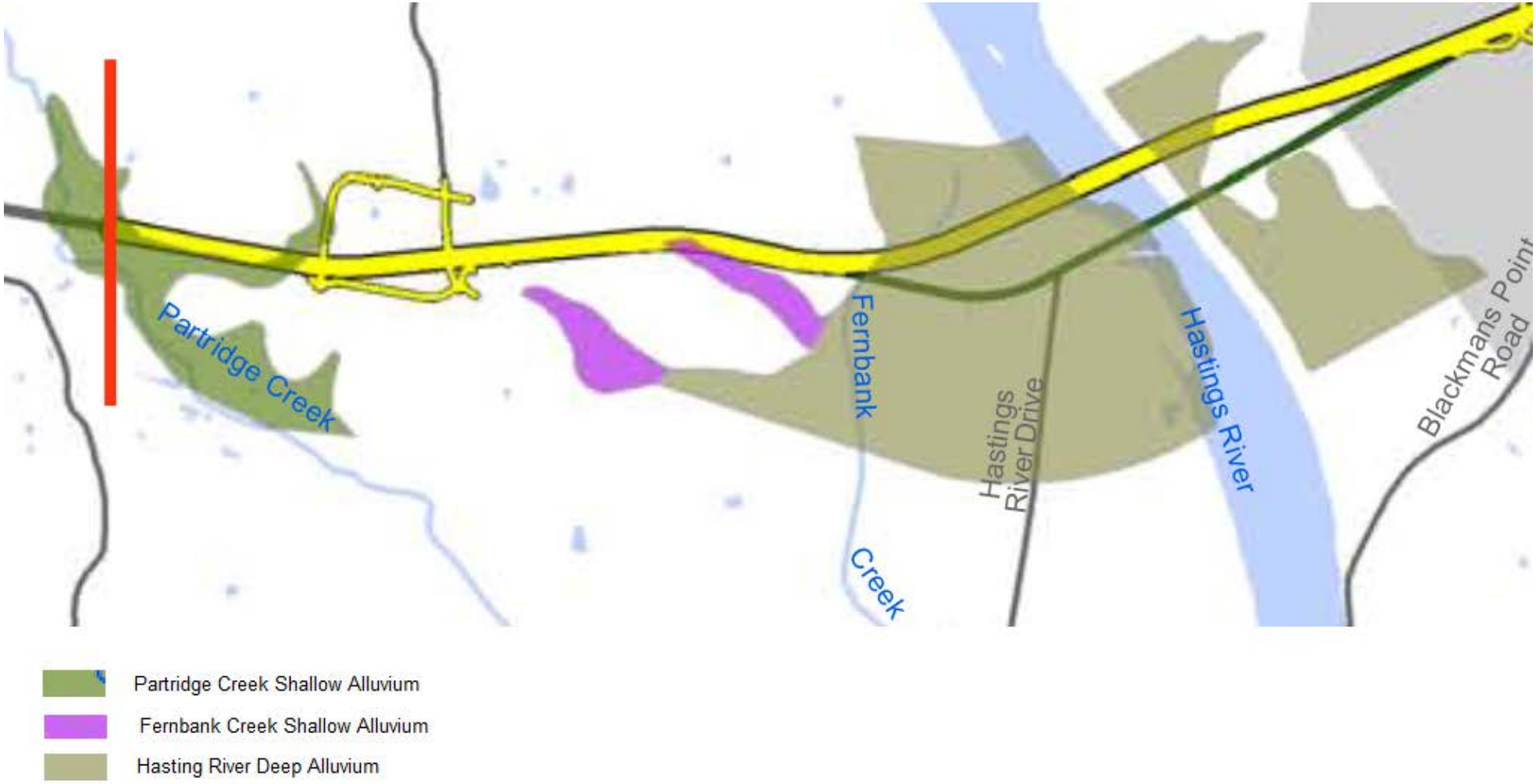

Figure 4-1 Soft soils along the Project

4.4 Sensitive receivers

The construction of the Project will interact with a number of sensitive receivers and natural environments. The lands surrounding the Project have been considered for potential sensitivity to dust and air quality impacts. The potential sensitive receivers include:

- Residences.
- Native vegetation.
- Sensitive commercial or industry users including a vineyard and plant storage.
- Road users.
- Watercourses.

Figure 4-2 shows the location of the Project and the Stockpile site 3.

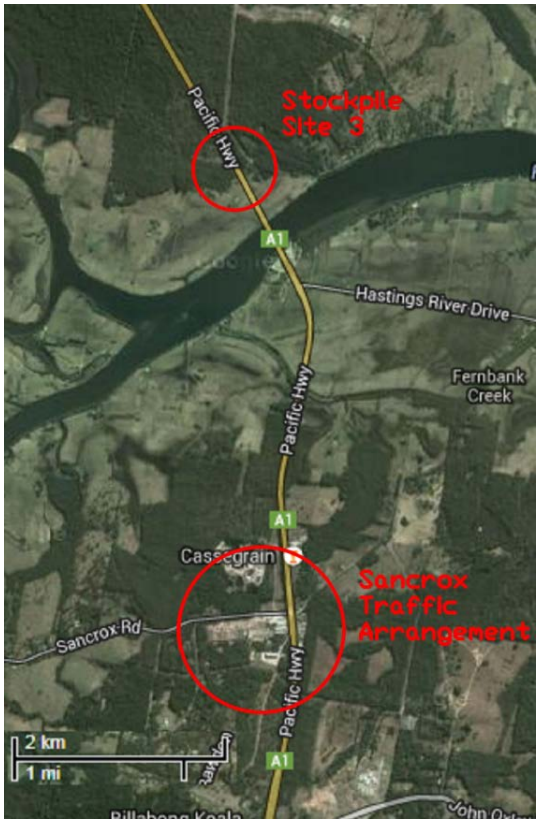

Figure 4-2 location of the Project and Stockpile Site 3

Regarding the Project, the nearest potentially affected residential sensitive receivers will be identified as those seen in Figures 4-3 and 4-4 below.

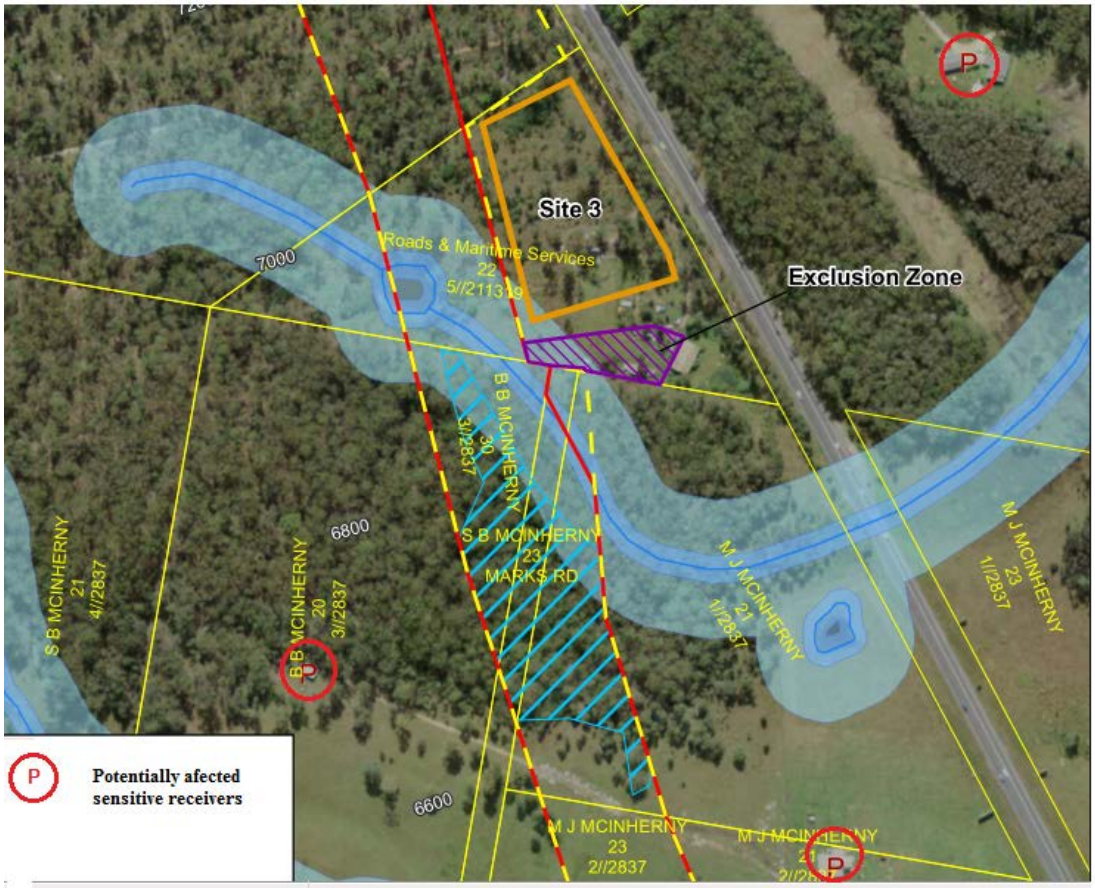

Figure 4-3 Potentially affected residential sensitive receivers. Stock pile site 3 (1)

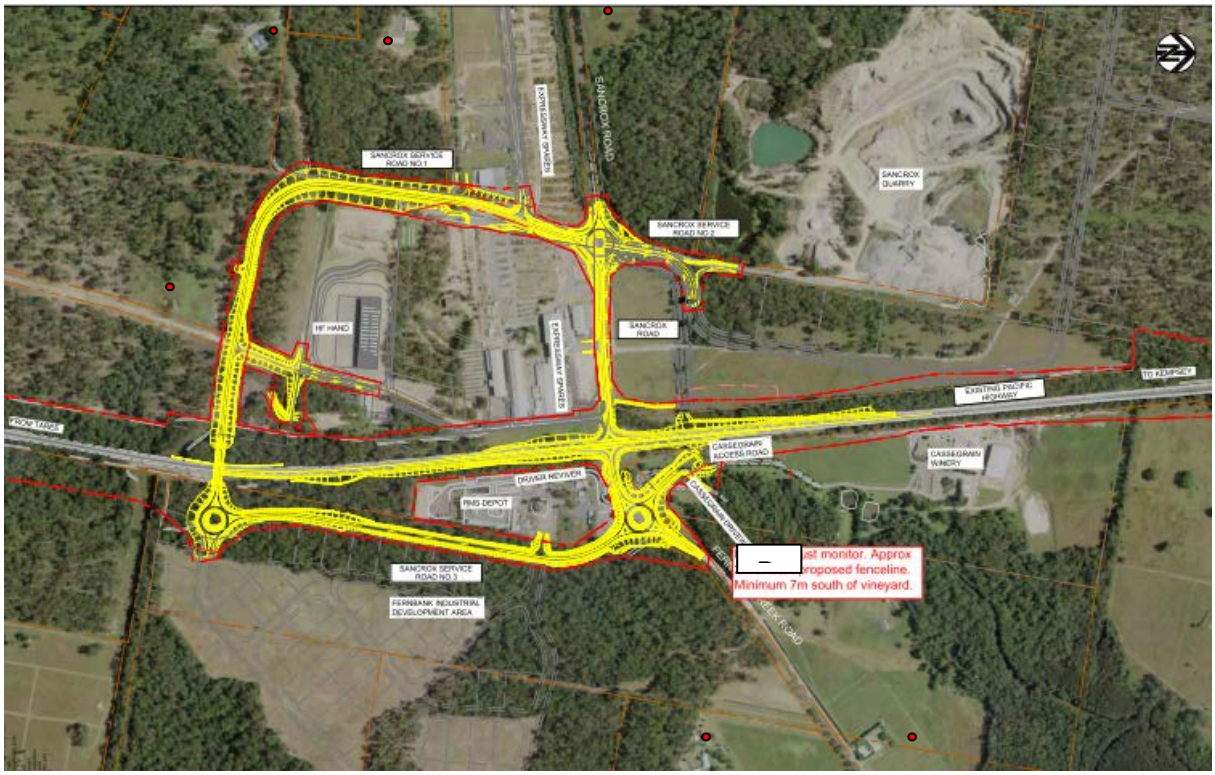

Figure 4-4 Potentially affected residential receivers (2). Shown in red

The nearest potentially affected industrial/commercial sensitive receivers will be identified as those shown in Figure 4-5, below:

1. - Expressway Spares (Industrial)
2. - Roads and Maritime depot (Industrial) and adjoining Driver Reviver
3. - Cassegrain winery (Industrial/commercial)
4. - Roads and Maritime Drive Reviver
5. - Hansons Quarry
6. - HF Hand

Figure 4-5 Location of potentially affected industrial/commercial sensitive receivers

5 Air quality criteria

The Environment Protection Agency (EPA) sets goals for ambient dust concentrations and dust deposition, which is a measure of the impacts of nuisance (EPA 2001).

The acceptable increment in annual average dust deposition depends on the existing deposition level. These are based on research by Dean (1990) and other investigations, which detail community response to dust fallout. It should be remembered that the air quality goals relate to the total dust burden in the air and not just the dust from the Project. In other words, there needs to be some consideration of background levels when using these goals to assess impacts.

Table 5-1 below details the air quality monitoring criteria for deposited dust.

Table 5-1 Air quality monitoring criteria for deposited dust

Pollutant	Annual concentration		Source
Deposited dust[b]	2g/m^2/month[c]	4 g/m^2/month[d]	NERDDC (1988)

Note:

a. Adapted from DEC guideline; Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales.

b. Dust is assessed as insoluble solids as defined by AS 3580.10.1-1991 (AM-19).

c. Maximum increase in deposited dust level.

d. Maximum total deposited dust level.

6 Environmental aspects and impacts

6.1 Construction activities

Emissions to the atmosphere during construction that could result in adverse impacts to air quality are typically divided into two categories. These are:

- Dust and particulates.
- Gaseous.

Key aspects of the Project that could result in dust emissions include:

- General earthworks particularly during site establishment.
- Vegetation clearing.
- Bulk Earthworks.
- Topsoil / material handling including stockpiling, material loading and material haulage.
- Vehicular movements over unpaved surface (including unsealed access roads).
- Wind erosion of exposed areas and temporary stockpiles.
- Tracking of dirt onto roads.

Air emissions, other than dust, which may be generated by construction activities include:

- Vehicle and plant exhaust emissions, which may be excessive if vehicles and plant are poorly maintained.

Odours/gases released during:

- Excavations of organic or contaminated materials.
- During sealing works.

6.2 Factors likely to affect dust generation and impacts

In addition to the inherent risks of specific construction activities creating the potential to generate dust, a number of other environment factors also affect the likelihood of dust emissions. These include:

- Wind direction – determines whether dust and suspended particles are transported in the direction of the sensitive receivers.
- Wind speed – governs the potential suspension and drift resistance of particles.
- Soil type – more erodible soil types have an increased soil or dust erosion potential.
- Soil moisture – increased soil moisture reduces soil or dust erosion potential.
- Rainfall or dew – rainfall or heavy dew which wets the surface of the soil and reduces the risk of dust generation.

6.3 Impacts

The potential for impacts on air quality will depend on a number of factors. Primarily impacts will be dependent on the nature, extent and magnitude of construction activities and their interaction with the natural environment. Potential impacts attributable to construction might include:

- Deposition of dust on surfaces where it may cause damage and/or lead to a need for increased cleaning or repair.
- Aesthetic effects that arise from visible airborne dust plumes and from deposits of dust on surfaces.
- Need for increased maintenance of air filtering systems (e.g. air conditioners etc.).
- Potential adverse health effects including eye, nose and throat irritation from excessive inhalation of fine particles.
- Impacts on water quality and/or vegetation health from dust deposition.
- Impacts on residential sensitive receivers, including impacts on living areas, swimming pools and general amenities.
- Complaints from the public relating to dust or odours.

Some impacts on air quality attributable to the Project are anticipated and have been described in the EA. Chapter 7 provides a suite of mitigation measures that will be implemented to avoid or minimise those impacts.

7 Environmental control measures

A range of environmental requirements and control measures are identified in the various environmental documents, including the EA, Statement of Commitments, supplementary assessments, Conditions of Approval and Roads and Maritime documents, and from recent experience on similar road projects. Specific measures and requirements to address impacts on air quality are outlined in Table 7-1.

Table 7-1Air quality management and mitigation measures

ID	Measure / Requirement	Resources needed	When to implement	Responsibility	Reference
GENERAL					
AQ1	Training will be provided to all project personnel, including relevant sub-contractors on sound air quality control practices and the requirements from this plan through inductions, toolboxes and targeted training.		Pre-construction Construction	Site Engineer / ESR	G38/G36, Good practice
AQ2	Air quality control measures from this plan will be included in relevant Environmental Work Method Statements (EWMS) and/or Progressive Erosion and Sediment Control Plans (PESCP).		Pre-construction / Construction	Site Engineer / ESR	Good practice
AQ3	Vegetation clearing will be staged where possible to minimise the area and time that surfaces are exposed.		Construction	Site Engineer	CoA B30(e)(i) and C2 SoC AQ1 G36
AQ4	Exposed surfaces with no scheduled work for two weeks will be treated to minimise dust generation. Exposed surfaces will be stabilised progressively using the most practical site specific methods, including watering and geo-fabrics for short term exposure and emulation spray, spray grass, soil compaction and revegetation for longer term exposed areas or final finishes.		Construction	Site Engineer	CoA B30(e)(i) and C2 SoC AQ1 G36 EA
AQ5	Construction activities will be modified, reduced or controlled during high or unfavourable wind conditions if they have a potential to increase off-site dust generation.		Construction	Site Engineer	CoA B30(e)(i) and C2 SoC AQ2 G36
AQ6	Control measures including water carts, sprinklers, sprays, dust screens or the application of geo-binding agents will be utilised where applicable to control dust emissions. The frequency of use will be modified to accommodate prevailing		Construction	Site Engineer/ESR/ Supervisor	CoA B30(e)(i) and C2 SoC AQ1 G36

ID	Measure / Requirement	Resources needed	When to implement	Responsibility	Reference
	conditions.				
AQ7	Erosion control structures will be checked regularly for buildup of silt and other materials to ensure deposits do not become a dust source.		Construction	ESR/Site Engineer	CoA B30(e)(i) Good practice
AQ8	Waste will be segregated and collected on a regular basis to ensure odours associated with waste do not become an issue.		Construction	Site Engineer/Supervisor	Good practice
AQ9	The application of pesticides will be modified, reduced or controlled during high or unfavourable wind conditions where wind can carry pesticides outside of the defined treatment area.		Construction	Site Engineer/Supervisor	G36
AQ10	Stockpiles will be located in accordance with the criteria established in Appendix I of the SWMP. A suitable cover crop or provision of other covering over topsoil stockpiles that will be established where stockpiles prone to wind erosion are in place for longer than 2 weeks.		Construction	Site Engineer/Supervisor	CoA B30I(i) and C2 G36
AQ11	There will be no burning off of waste.		Construction	Site Engineer/Supervisor	G36
VEHICLE MOVEMENT AND MATERIAL STORAGE					
AQ12	Areas of disturbed material and access roads will be stabilised where possible by methods such as compaction. Compounds, ancillary facilities, administration access roads and standing areas will be hard surfaced.		Construction	Site Engineer/Supervisor	CoA B30(e)(i) and C2 SoC AQ1 G36
AQ13	Measures implemented to minimise dust, soil or mud from being deposited vehicles on public roads. This will be achieved by implementing mitigation measures such as rumble grids and rail ballast at entry/exit points. Manual cleaning will also be carried out where appropriate. In the event of any spillage or tracking, the spilt material will be removed within 24 hours.		Construction	Site Engineer/Supervisor	CoA B30(e)(i) and C2 SoC AQ1 G36

ID	Measure / Requirement	Resources needed	When to implement	Responsibility	Reference
AQ14	Hardstand areas and surrounding public roads will be cleaned, as required, using methods including brooms, bobcat attachments or street sweepers.		Construction	Site Engineer/Supervisor	Good practice
AQ15	Vehicle movement will be confined to designated haul roads and areas. These roads will have speed limits of 40km/h in order to reduce dust generation. Reduced speed limit maybe implemented where dust generation persists		Construction	Site Engineer/Supervisor	CoA B30(e)(i) and C2 SoC AQ1 G36
AQ16	All loaded haulage trucks will be covered where there is a risk of release of dust or other materials and at all times on public roads.		Construction	Site Engineer/Supervisor	CoA B30(e)(i) and C2 SoC AQ1 G36

ID	Measure / Requirement	Resources needed	When to implement	Responsibility	Reference
PLANT AND EQUIPMENT					
AQ17	Haul trucks and plant equipment will be switched off when not in operation for periods of more than 30 minutes.		Construction	Supervisor/ Operators	SoC AQ1 G36
AQ18	Engines of plant parked next to residents will be switched off when not in operation.		Construction	Supervisor /Operators	Good practice
AQ19	Exhaust systems of construction plant, vehicles and machinery will be maintained in accordance with manufacturer's specifications to ensure that emissions do not exceed EPA regulations. Periodic visual checks will be undertaken to ensure ongoing compliance, typically weekly.		Construction	Supervisor/Site Engineer	SoC AQ1 G36
INSPECTION, MONITORING AND RECORDS					
AQ26	Public roads will be inspected each day at main entry and exit points to and from areas where construction activities are taking place and compound. Material tracked onto the road pavement will be removed in accordance with AQ13.		Construction	Site Engineer/Supervisor	G36
AQ27	Dust deposition gauges will be established three months prior to the commencement of construction to establish background dust levels. Monitoring equipment will remain in place until completion of the construction works and/or where ground conditions are stable. Results will be captured on a monthly basis and collected in accordance with DEC's "Approved Method for the Sampling and Analysis of Air Pollutants in NSW" guidelines.	Approved Method for the Sampling and Analysis of Air Pollutants in NSW (DEC,1998) Approved Methods for the Modeling and Assessment of Air Pollutants in NSW (DEC, 2001)	Pre-construction / Construction	ESR	G36
AQ28	Weather forecast will be reviewed on a daily basis and appropriate measures implemented where		Construction	ESR/Supervisor	Good practice

ID	Measure / Requirement	Resources needed	When to implement	Responsibility	Reference
	unfavourable weather conditions (dry weather, strong winds) are anticipated.				
AQ29	An onsite weather station will be established to record weather data. Rainfall at the premises will be measured and recorded in millimetres per 24-hour period at the same time each day from the time that the site office is established.		Pre-construction / Construction	ESR	Good practice
AQ30	Dust control and operational procedures will be reviewed and modified if results exceed the air quality criteria and are attributable to construction activities.		Construction	ESR/Supervisor	Good practice

8 Compliance management

8.1 Roles and responsibilities

FAA Project Team's organisational structure and overall roles and responsibilities are outlined in section 4.2 of the CEMP. Specific responsibilities for the implementation of environmental controls are detailed in Chapter 7 of this Plan.

8.2 Training

All employees, contractors and utility staff working on site will undergo site induction training relating to air quality management issues. The induction training will address elements related to air quality management including:

- Existence and requirements of this sub-plan.
- Relevant legislation.
- Roles and responsibilities for air quality management.
- Air quality mitigation and management measures.
- Procedure to be implemented in the event of an incident (e.g. release of dust or gaseous emissions from site).

Targeted training in the form of toolbox talks or specific training will also be provided to personnel with a key role in air quality management. Examples of training topics include:

- Erosion and sediment control installation methodology.
- Preparedness for high wind events.
- Lessons learnt from incidents and other event e.g. low rainfall/high wind.

Further details regarding staff induction and training are outlined in Chapter 5 of the CEMP.

8.3 Monitoring and inspection

Regular monitoring and inspections will be undertaken during construction. Monitoring and inspections will include, but not be limited to:

- Monthly dust monitoring in accordance with EPA's "Approved Method for the Sampling and Analysis of Air Pollutants in NSW" guidelines.
- Weather data at the premises, including rainfall measured and recorded in millimetres per 24-hour period at the same time each day from the time that the site office is established.

Additional requirements and responsibilities in relation to inspections are documented in section 8.2 of the CEMP.

Pending consultation with land owners, a static dust monitoring gauge will be located at the location presented in Appendix A.

8.4 Licenses and permits

An EPL will be obtained for the scheduled activity “Extractive Activities”. The EPL typically prescribes air quality parameters to be measured. The air quality monitoring criteria for the Project is listed in Table 5-1.

Any other relevant licenses or permits will be obtained in the lead up to and during construction as required.

8.5 Auditing

Audits (both internal and external) will be undertaken to assess the effectiveness of environmental controls, compliance with this sub plan, CoA and other relevant approvals, licenses and guidelines.

Audit requirements are detailed in section 8.4 of the CEMP.

8.6 Reporting

Reporting requirements and responsibilities are documented in sections 8.4 and 8.5 of the CEMP.

9 Review and improvement

9.1 Continuous improvement

Continuous improvement of this Plan will be achieved by the ongoing evaluation of environmental management performance against environmental policies, objectives and targets for the purpose of identifying opportunities for improvement.

The continuous improvement process will be designed to:

- Identify areas of opportunity for improvement of environmental management and performance.
- Determine the cause or causes of non-conformances and deficiencies.
- Develop and implement a plan of corrective and preventative action to address any non-conformances and deficiencies.
- Verify the effectiveness of the corrective and preventative actions.
- Document any changes in procedures resulting from process improvement.
- Make comparisons with objectives and targets.

9.2 CAQMP update and amendment

The processes described Section 8 and Section 9 of the CEMP may result in the need to update or revise this Plan. This will occur as needed.

Only the FAA Q&E Manager, or delegate (ESR), has the authority to change any of the Environmental Management documentation.

A copy of the updated plan and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure – refer to section 10.2 of the CEMP.

Appendix A

Dust catchment areas and sensitive receivers