



**Murra Warra Wind Farm**  
**Dust Management Plan**  
**Final**

Author: Kevin Garthwaite

Date: 30 March 2017

Ref: 02418-006365

PLANNING AND ENVIRONMENT ACT	
<u>YARRIAMBLACK</u> PLANNING SCHEME	
PERMIT NO. <u>PA1600128</u>	
ENDORSED PLAN	
SHEET <u>1</u>	OF <u>12</u>
SIGNED <u>[Signature]</u>	FOR
MINISTER FOR PLANNING	
DATE: <u>15/8/17</u>	

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<u>HORSHAM</u> PLANNING SCHEME	
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ENDORSED TO COMPLY WITH CONDITION <u>44</u> OF PLANNING PERMIT <u>PA1600127 + PA1600128</u>
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## Revision History

Issue	Date	Author	Nature And Location Of Change
01	30 Mar 2017	Kevin Garthwaite	First Created

*The drawings and/or site plans included in this plan are based on layouts submitted by MWWF as part of its planning application for the Murra Warra Wind Farm project. The wind farm permits, (HRCC: PA1600127, YSC: PA1600128 and YSC PA1600129) allow actual locations of wind turbines to be subject to final micro siting up to 100 m and/or minor changes to access track locations and associated plant, equipment and construction facilities, within the boundary of existing constraints and as defined by the permits. The project could also be constructed in stages.*

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## 1 INTRODUCTION

The Dust Management Plan has been prepared for the Murra Warra Wind Farm (MWWF) as part of the overall Environmental Management Plan (EMP) in response to planning permit conditions issued by the Minister for Planning PA1600127, PA1600128 and PA1600129.

In accordance with the planning permit condition 44, the EMP must include a Dust Management Plan, which must be submitted to and approved by the Responsible Authority.

The requirements for Dust Management Plan are set out in the planning conditions presented in Table 1, which also includes references to sections in this plan.

**Table 1: Relevant planning permit conditions from Permit No. PA1600127 (HRCC) and PA160128 (YSC).**

Condition Number	Abbreviated condition details	Plan Section/s
44.a.	Details as to how dust will be managed on site, including dust management for the quarry.	6.1.1
44.b.	Details about when quarrying activities will cease on site due to weather conditions that could result in visible dust being discharged beyond the boundaries of the site.	6.1.2
44.c.	Details about how dust will be monitored, including compliance with the State Environmental Protection Policy (SEPP) (Air Quality Management) 2001.	Section 4 (SEPP Criteria) applicable & Section 7
44.d.	Contingency measures to deal with any elevated dust conditions.	7.3
45.	Any failure to meet the standards of the SEPP (Air Quality Management) must immediately be brought to the attention of the Environment Protection Authority (EPA) Victoria and actions specified by EPA Victoria to bring the use into compliance must be carried out.	9.2
46.	No chemical dust suppressant may be used on the site without the prior written permission of the Responsible Authority.	6.1.1

In meeting the requirements of this plan it is taken that the requirements of Condition 16 of PA1600129 have also been met

## 1.1 Objectives

The objectives of this Dust Management Plan are to:

- Stipulate dust control guidelines to be employed on site
- Describe the standard dust management measures to be implemented
- Stipulate an inspection program which ensures proactive management of dust
- Outline reporting and review requirements
- Establish responsibilities for dust management.

## 2 POLICY AND STATUTORY CONTEXT

### 2.1 State legislation

This management plan has been developed in accordance with the following legislation:

- *Environmental Protection Act 1970* (Vic)
  - State Environment Protection Policy (Ambient Air Quality) (SEPP AAQ)
  - State Environment Protection Policy (Air Quality Management) (SEPP AQM).

The SEPP (AQM) provides design criteria (as ambient ground level concentrations), which apply to new or modified industrial sources. It is the policy intent of the SEPP (AQM) to manage the emissions to the air environment so that:

- ‘the beneficial uses of the air environment are protected, Victoria’s air quality goals and objectives are met, our air quality continues to improve and we achieve the cleanest air possible, having regard to the State’s social and economic development’.

The beneficial uses are defined as protection of the following:

- Life, health and well-being of humans’
- Life, health and well-being of other forms of life, including the protection of ecosystems and biodiversity
- Local amenity and aesthetic enjoyment
- Visibility
- The useful life and aesthetic appearance of buildings, structures, property and materials
- Climate systems that are consistent with human development, the life, health and well-being of humans, and the protection of ecosystems and biodiversity.

### 2.2 Relevant standards and guidelines

There are several guidelines that are used in Victoria to assist in determining the level of management necessary to meet SEPP requirements. These include:

- AS/NZS 3580.1.1 Method for sampling and analysis of ambient air - Guide to siting monitoring equipment



- EPA Victoria, 1998, Environmental Guidelines for the Concrete Batching Industry, Publication 628
- EPA Victoria, 1996, Environmental Guidelines for Major Construction Sites, Publication 480

### 2.3 Licenses, approvals and permits

- Horsham Rural City Council Permit No: PA1600127
- Yarriambiack Shire Permit No: PA1600128
- Yarriambiack Shire Permit No: PA 1600129

### 2.4 Liaison with key stakeholders

Relevant agencies and stakeholders have been consulted with regard to any specific approval requirements in relation to this plan.

## 3 AIR QUALITY AT THE SITE

### 3.1 Existing environment

The project site is located on the Wimmera Plains approximately 30 km to the north of Horsham. The predominant existing land use is broad acre cropping and grazing. The project site is generally flat. Native vegetation has been mostly removed from the landscape, and is now limited to road reserves, scattered paddock trees and small remnant patches.

#### 3.1.1 *Meteorology*

Meteorological data was sourced from the Bureau of Meteorology (BOM) using the 'Horsham Polkemmet Rd' weather station approximately 30 km south of the project site. The winds in the area of the project site predominantly range from the south-west to north-west, however north-easterly winds are also common (when considered on an annual basis). South-westerly are most common in summer, autumn and spring, while north-westerly winds dominate during winter. The winds are often strongest during spring and are from the south-west. For both summer and winter, afternoon winds are typically stronger than in the morning.

#### 3.1.2 *Local Air Quality*

The project site is located in a rural agricultural area where background levels of pollution are typically low. The main source of particulate emissions would be wind-blown dust from local unsealed roads or dry un-vegetated paddocks. Bushfires and domestic wood fired heaters also have the potential to increase ambient particulate concentrations.

### 3.2 Potential Air Quality Impacts

Dust will be inadvertently produced at the site during the construction and operational stages. Dust will primarily be generated from vehicles on unsealed areas and from activities at the quarry site.

#### 3.2.1 Construction

For the estimated two year construction phase of the project; the potential sources of air quality impacts may include:

- Traffic
  - In the peak of construction there would be approximately 170 vehicle deliveries (mix of 60 trucks and 110 light vehicles) expected per day
  - During the second half of the construction, truck numbers would decrease to between 5 and 10 trucks per day and light vehicles would be up to 20 vehicles per day. NB: The amount of heavy vehicle movements on local roads has been reduced significantly by use of an on-site quarry to provide construction materials rather than sourcing these materials from a quarry remote from site
- Quarry
  - Primary crushing and screening plant
  - Mobile plant consisting of wheel loaders and excavators
  - Other mobile equipment may include bulldozer, grader, scraper and hydraulic drill rig (if blasting is required).

#### 3.2.2 Operation

For the operation of the wind farm; the potential sources of impacts include:

- Traffic
  - It is estimated that there would be up to 15 permanent staff on site likely to commute daily from population centres. In addition to this there would be 2-3 truck deliveries per week.

## 4 AIR QUALITY CRITERIA

### 4.1 SEPP (AQM) 2001

Under Schedule A of the SEPP (AQM), design criteria are prescribed for air quality indicators based on toxicity or odour classification. These design criteria, however, apply to point sources (such as stacks) and are therefore not applicable to the modelling of area and volume sources from a quarry.

The SEPP (AQM) identifies that for the management of large line and area-based sources of emissions, such as mining and extractive industries, the protocol for environmental management (PEM) for that industry should be followed. The level of



assessment required by the PEM is designated into three levels based on the quarry extraction rate and the setting and distance to receptors. The three levels are defined as follows:

- A **level 1** assessment is required when developments are located close to residential areas or urban areas and have the potential to give rise to significant offsite impacts
- A **level 2** assessment is required when the proposed development is in a rural location with residences in close proximity or where a small operation is located in an urban area
- A **level 3** assessment is required when the development is in a rural location with no residences nearby.

The proposed extraction from the quarry is below 150,000 tonnes per year and the nearest dwelling is over 1km from any part of the site. In accordance with Table 1 in the PEM, no air quality modelling assessment or compliance monitoring for ambient particulate is required. Instead, dust emissions must be controlled by the application of best practice site management.

## 5 ROLES AND RESPONSIBILITIES

Responsibilities for the implementation of the Dust Management Plan are summarised in Table 2.

**Table 2: Roles and responsibilities**

Action	Responsibility
Overall implementation of the dust management plan	Project Manager
Coordinate monitoring and compile reports	Environment Manager
Maintain internal records of monitoring	Environment Manager
Collate and maintain records of complaints, respond to complainant	Environment Manager
Identify Non Conformances and notify Project Manager	Environment Manager
Authorise and confirm the implementation of mitigation measures	Project Manager

## 6 DUST MANAGEMENT MEASURES

### 6.1 Construction

#### 6.1.1 *General management strategies*

The following dust management strategies will be implemented during construction:

- daily visual inspections
- minimisation of vehicle movements and speed within work site
- when clearing vegetation, minimisation of exposed areas by progressive clearance
- unsealed roads will be constructed away from sensitive receptors where possible
- watering of exposed areas during dry periods and restrictions on site traffic to areas serviced by water tankers



- No chemical dust suppressant may be used on the site without the written permission of the Responsible Authority
- Water spraying is an approved method of dust suppression for unsealed roads, but dust suppression methods additional to water spraying may be required during dry weather spells and windy conditions

#### 6.1.2 *Quarry management strategies*

Dust will be primarily controlled in and around the quarry and processing plant by using water. Water sprays will operate in the plant on screens, crushers, internal direction change points and conveyor discharge points as required. A water cart will be in operation around the processing area. Unsealed roads will be watered to control dust.

Speed limits on all site roads will be enforced to further control dust. Seeding of exposed surfaces which will be unused for some time will be undertaken to reduce windblown dust.

If weather conditions, such as strong winds, are causing visible dust to be discharged beyond the site boundaries, water spraying activities will be increased. If water spraying is unable to control dust leaving site, quarrying activities will cease until calmer wind conditions. .

### 6.2 Operation

Standard dust reduction measures will be implemented during operation including:

- watering of roads as required
- truck movements on-site will be minimised and truck speed will be kept as low as practicable, further minimising the generation of dust.

## 7 MONITORING PROGRAM

### 7.1 Construction

Monitoring and inspections will be undertaken during construction, including daily observations of:

- dust and emission plumes on site associated with construction works and vehicles transporting materials, and associated visibility observations
- the effectiveness of water sprayed from water trucks as a method to suppress dust
- stockpiles, roads and vehicles leaving site for evidence of dust generation or loose, unstable material with potential for dust.

Daily visual inspections of the construction site will be undertaken by the Environment Manager (or delegate) and construction personnel to identify actual or potential dust related concerns.

If deemed necessary the Environment Manager could implement a further dust monitoring program which could include one or more of the following:

- dust deposition gauges
- high volume air samplers
- fixed location continuous ambient monitors
- occupation dust monitoring
- meteorological monitoring.

## 7.2 Operation

The wind farm operation will be monitored daily by personnel located in the maintenance and service building on-site.

## 7.3 Contingency measures

In the event that the objectives of the dust control system are not being met, which will be indicated by the dust monitoring observations or results, remedial actions will be implemented to minimise the future occurrence of dust emissions. They may include:

- internal review and amendment of the dust controls.
- external review and recommendations for amendment of the dust controls (by a dust specialist).
- increase in the water spraying conducted.

# 8 QUALITY ASSURANCE

## 8.1 Data quality objectives

The National Environmental Protection Measure (NEPM, Schedule B[2]) *Guideline on Data Collection, Sample Design and Reporting* (1999), specifies that the nature and quality of the data produced in an investigation will be determined by the Data Quality Objectives (DQOs). As referenced by the NEPM, the DQO process is detailed in the US EPA *Guidance for the Data Quality Objectives Process* (1994), EPA QA/G-4 (EPA 600/R-96/055). The US EPA defines the process as:

*'a strategic planning approach based on the Scientific Method that is used to prepare for a data collection activity. It provides a systematic procedure for defining the criteria that a data collection design should satisfy, including when to collect samples, where to collect samples, the*



*tolerable level of decision errors for the study, and how many samples to collect'.*

The DQO process will be used to obtain relevant data to monitor project performance in terms of dust and implementation of associated management or mitigation measures.

The process of establishing appropriate DQOs is defined by the USEPA according to the following seven steps (Table ).

**Table 3: DQO Steps**

Step	Data Quality Objective
1	State the problem - define the problem to be addressed, identify the planning team, examine budget and schedule.
2	Identify the decision - outline the decision, the study question and alternative actions.
3	Identify inputs to the decision - present parameters and inputs for decision, including information sources, basis for trigger/guideline levels, sampling and analysis methodology, etc.
4	Define the study boundaries - present spatial and temporal limits for study, sample characteristics and decision making units.
5	Develop a decision rule - define a statistical parameter, specify trigger/guideline levels and develop argument for action.
6	Specify limits on decision errors - set acceptable limits for decision errors relative to potential consequences such as health, budget, social or environmental impacts.
7	Optimise the design for obtaining data - develop an effective sampling and analysis plan that meets resource and performance criteria.

## 9 COMMUNITY CONSULTATION

### 9.1 Reporting and record keeping

Reporting and record keeping of daily inspections is to be managed in accordance with the Contractor's Quality Management System.

### 9.2 Non-compliance and corrective action

Any failure to meet the standards of the SEPP (AQM) will be reported to EPA Victoria and actions specified by EPA Victoria to bring the use into compliance will be carried out.



### 9.3 Complaint management

Complaints will be managed through procedures outlined in the Complaint Investigation and Response Plan (CIRP).

## 10 GLOSSARY AND ABBREVIATIONS

BOM	Bureau of Meteorology
EMP	Environmental Management Plan
HRCC	Horsham Rural City Council
SEPP (AAQ)	State Environment Protection Policy (Ambient Air Quality)
SEPP (AQM)	State Environment Protection Policy (Air Quality Management)
YSC	Yarriambiack Shire Council

## 11 REFERENCES

AS/NZS 3580.1.1 Method for sampling and analysis of ambient air - Guide to siting monitoring equipment  
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