



TODOROSKI
AIR SCIENCES

AIR QUALITY MANAGEMENT PLAN
PROPOSED RESOURCE RECOVERY
FACILITY AT 25 MARTIN ROAD,
BADGERYS CREEK

Precise Planning

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Prepared by

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Air Quality Management Plan

Proposed Resource Recovery Facility at 25 Martin Road, Badgerys Creek

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1 INTRODUCTION

The proposed development of a Resource Recovery Facility located at 25 Martin Road, Badgerys Creek New South Wales (NSW) (hereafter referred to as the Project) has the potential to affect the air quality in the surrounding environment. As such, this Air Quality Management Plan (AQMP) will be applied to ensure that the activities will be conducted in a manner that minimises the potential to cause an impact at the nearest sensitive receptors.

An Air Quality Impact Assessment (AQIA) for the Project found that with application of the measures outlined in this AQMP, the project could operate without any discernible air quality impact at the sensitive receptors in the surrounding environment. The AQIA is described in detail in the *Air Quality Impact Assessment – Proposed Resource Recovery Facility at 25 Martin Road, Badgerys Creek NSW* (Todoroski Air Sciences, 2015).

1.1 AQMP objectives

This AQMP describes operational management practices and details the management framework and mitigation actions to be taken in the operation of the Project to minimise potential air quality impacts. Specifically, the AQMP aims to:

- ✦ Describe the activities of the Project and the receiving environment;
- ✦ Describe the means of managing and minimising the potential dust emissions;
- ✦ Outline the processes to follow in order to meet with the relevant criteria; and,
- ✦ Through these measures ensure that the activities are conducted in a manner that minimises the potential to exceed the relevant criteria at the sensitive receptors.

2 PROJECT SETTING AND DESCRIPTION

2.1 Project location

The proposed Project is located approximately 2.5 kilometres (km) west of Kemps Creek and 2km northeast of Badgerys Creek, in NSW (see **Figure 2-1**). The site is bounded to the east by Martin Road and to the west by Lawson Road. The local land use surrounding the site is comprised of semi-rural land holdings with small-scale agricultural operations and the Kemps Creek Landfill and SAWT facility located approximately 0.9km north of the site.

Residences surrounding the proposed site are identified as the nearest sensitive receptors to the Project, and are shown in **Figure 2-1**.





Figure 2-1: Project location

2.2 Project description

Activities at the Project would generally consist of the importation (materials sourced from off-site) and processing of various materials for resource recovery. These materials would consist of the following:

- ✦ 50,000 tonnes per year of building demolition waste for example, concrete, bricks, tiles, plastic, wood and metal; and,
- ✦ 10,000 tonnes per year of green waste material

The proposed site layout is shown in **Figure 2-2**. Material would be delivered to the site via the north-eastern corner along Martin Road before being unloaded and distributed to designated areas and stockpiles within the site. The materials would be sorted and processed before dispatch to customers off-site.

Material would be obtained from construction and demolition activities conducted by the Proponent. The green waste material would be processed on-site (chipped or shredded) before being dispatched off-site within a nominal 24 hour period. Only fresh green waste material would be received at the Project.

The site covers an area of approximately 2 hectares and would be prepared with a compacted gravel base, except at the western portion of the site, which would include a hard stand area.

No putrescible waste would be accepted on-site for processing. The proposed operating hours of the site are Monday to Friday 7am to 5pm and Saturday 8am to 2pm.

2.3 Baseline meteorological conditions

Long-term climatic data from the Bureau of Meteorology weather station at Badgerys Creek Automatic Weather Station (AWS) (Site No. 067108) were analysed to characterise the local climate in the proximity of the Project. The Badgerys Creek AWS is located approximately 4km southwest of the Project.

Figure 2-3 presents a summary of data from the Badgerys Creek AWS collected over an approximate 15-year period.

As expected, mean temperatures are highest during the summer months and lowest during the winter months. Rainfall exhibits variability and is generally greater during the summer months and declines during winter. Humidity levels exhibit variability and seasonal flux across the year. Wind speeds have a greater spread between the 9:00am and 3:00pm conditions during the warmer months compared to the colder months.

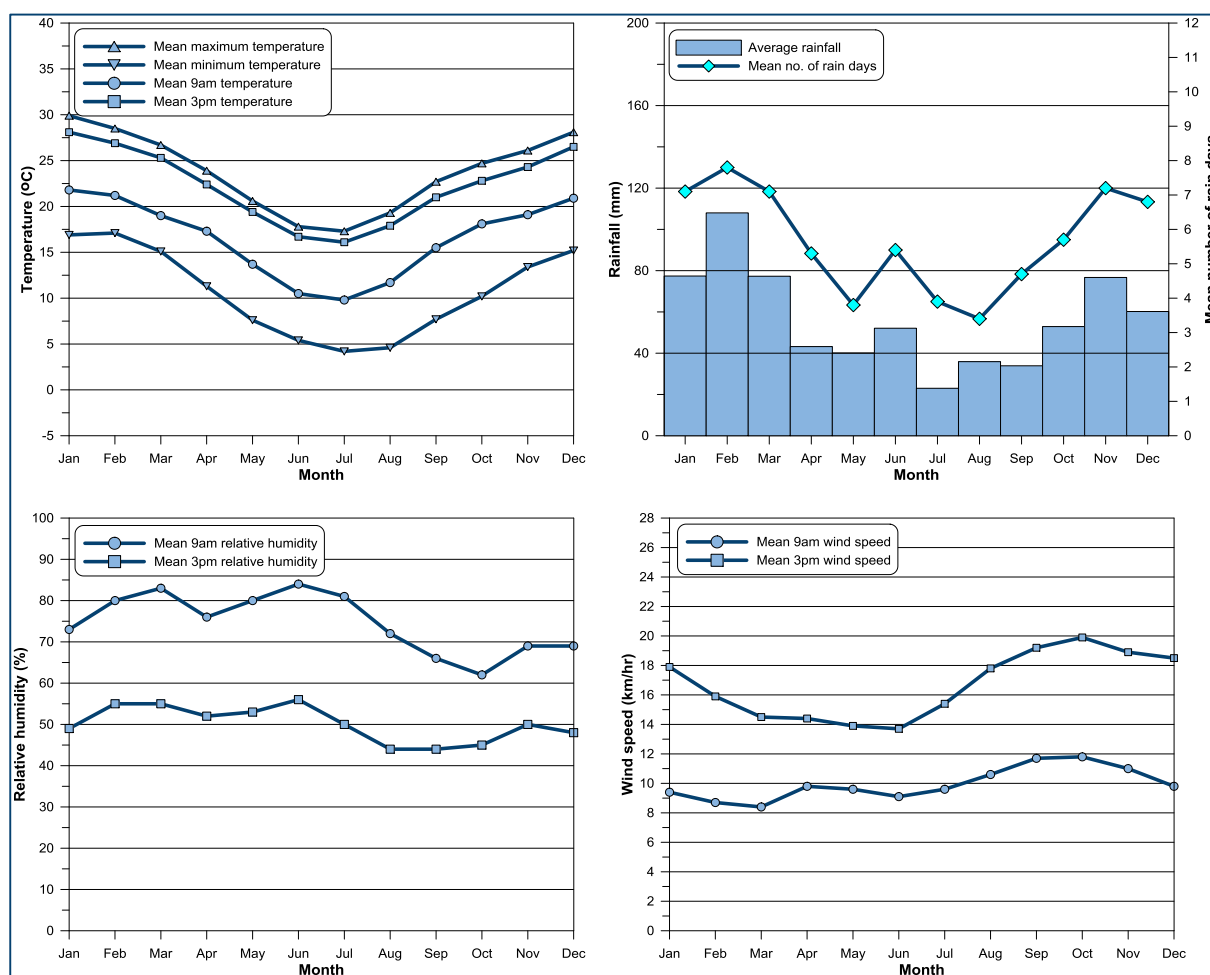


Figure 2-3: Monthly climate statistics summary – Badgerys Creek AWS

Figure 2-4 presents the annual and seasonal windroses for the 2012 calendar year generated using the CALMET meteorological model (**Todoroski Air Sciences, 2015**) and are considered representative of the likely conditions at the Project area.

On an annual basis winds from the southwest are most frequent. During summer, winds are distributed from the north-northeast to the west-southwest, with the most dominant winds from the southwest. The autumn and winter distributions are similar to the annual patterns, typically dominated by winds from the southwest. In spring the distribution shows a similar pattern with that of summer where the winds are distributed from the north-northeast to the west-southwest with the most dominant winds coming from the southwest. The wind distributions are similar to those observed at the Badgerys Creek AWS.

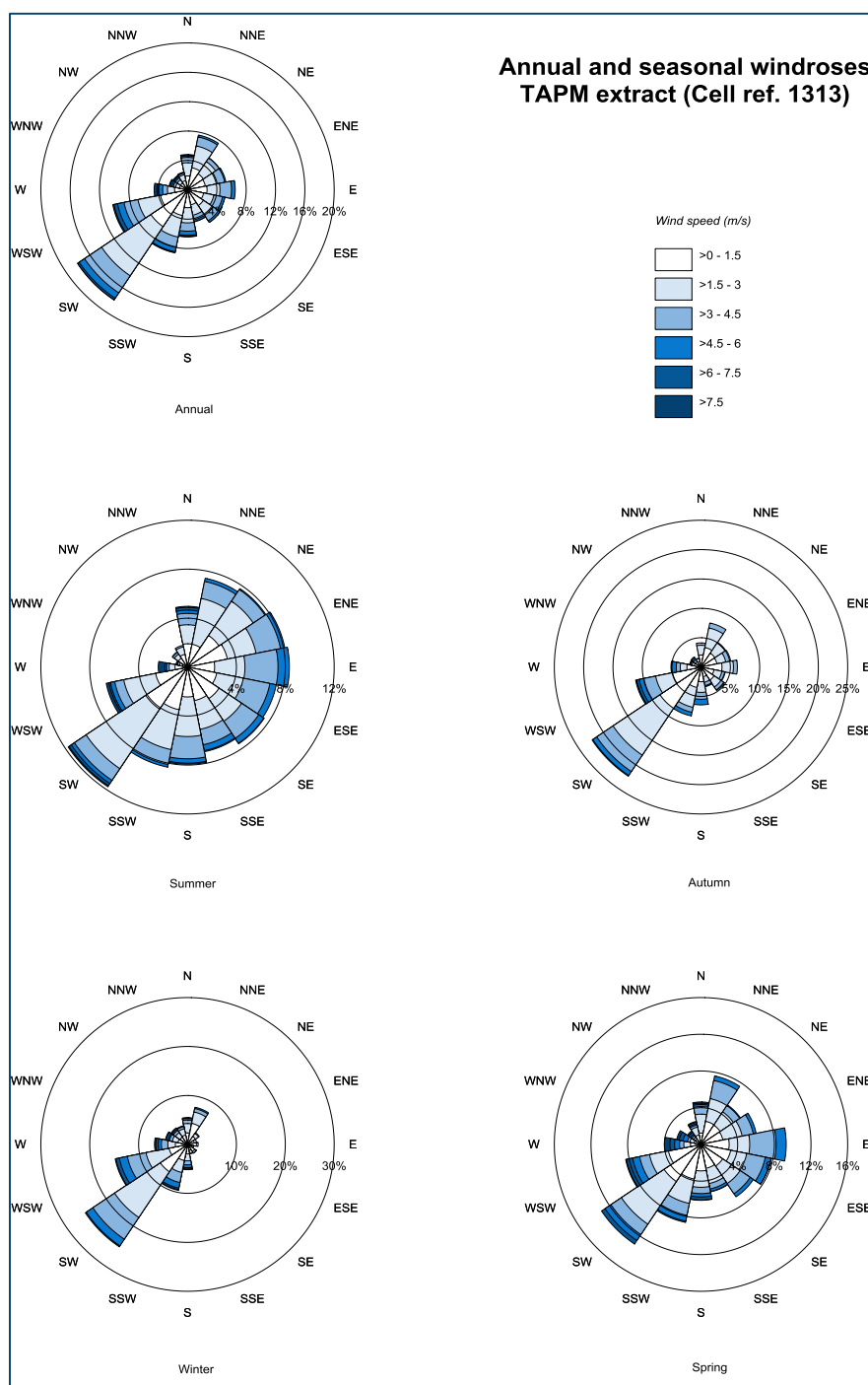


Figure 2-4: Annual and seasonal windroses – TAPM (2012)

2.4 Baseline air quality

The main sources of particulate matter in the wider area around the Project include agricultural activities, emissions from local anthropogenic activities such as motor vehicle exhaust and domestic wood heaters, urban activity and various other commercial and industrial activities.

There are no available site-specific monitoring data. To estimate the background levels for the site which is a requirement to assess any potential impacts, available data from nearby monitoring stations are used.

The air quality monitors reviewed include four Tapered Element Oscillating Microbalances (TEOMs) operated by the NSW EPA located in the wider area. **Table 2-1** presents a summary of the PM₁₀ concentrations for each of the NSW EPA TEOM monitoring stations reviewed from 2010 to 2013. The data indicate that all annual average values are below the relevant criterion of 30µg/m³, however measured dust levels on a 24-hour average basis are on occasion above the 24-hour average criterion of 50µg/m³.

Table 2-1: PM₁₀ levels from NSW EPA monitoring sites (µg/m³)

Year	Bringelly	Liverpool	St Marys	Prospect
Annual average				
2010	15.5	17.0	15.1	15.4
2011	15.9	18.1	14.7	15.8
2012	15.7	19.8	14.5	17.2
2013	17.0	21.0	16.0	19.2
Maximum level (No. of days above criteria)				
2010	41.1 (0)	41.1 (0)	52.1 (1)	40.1 (0)
2011	86.0 (2)	68.8 (1)	73.9 (1)	41.5 (0)
2012	40.1 (0)	42.5 (0)	34.3 (0)	38.7 (0)
2013	97.2 (3)	98.5 (3)	93.0 (2)	81.8 (4)

Figure 2-5 shows all of the measured 24-hour average PM₁₀ levels at the surrounding NSW EPA monitoring stations over the period reviewed. It can be seen that concentrations are nominally highest in the spring and summer months with the warmer weather raising the potential for drier ground elevating the windblown dust, the occurrence of bushfires and pollen levels.

The monitoring station at Bringelly is the closest to the Project area and therefore the dust levels recorded at this station are likely to be the most representative of the ambient air quality in the vicinity of the Project.

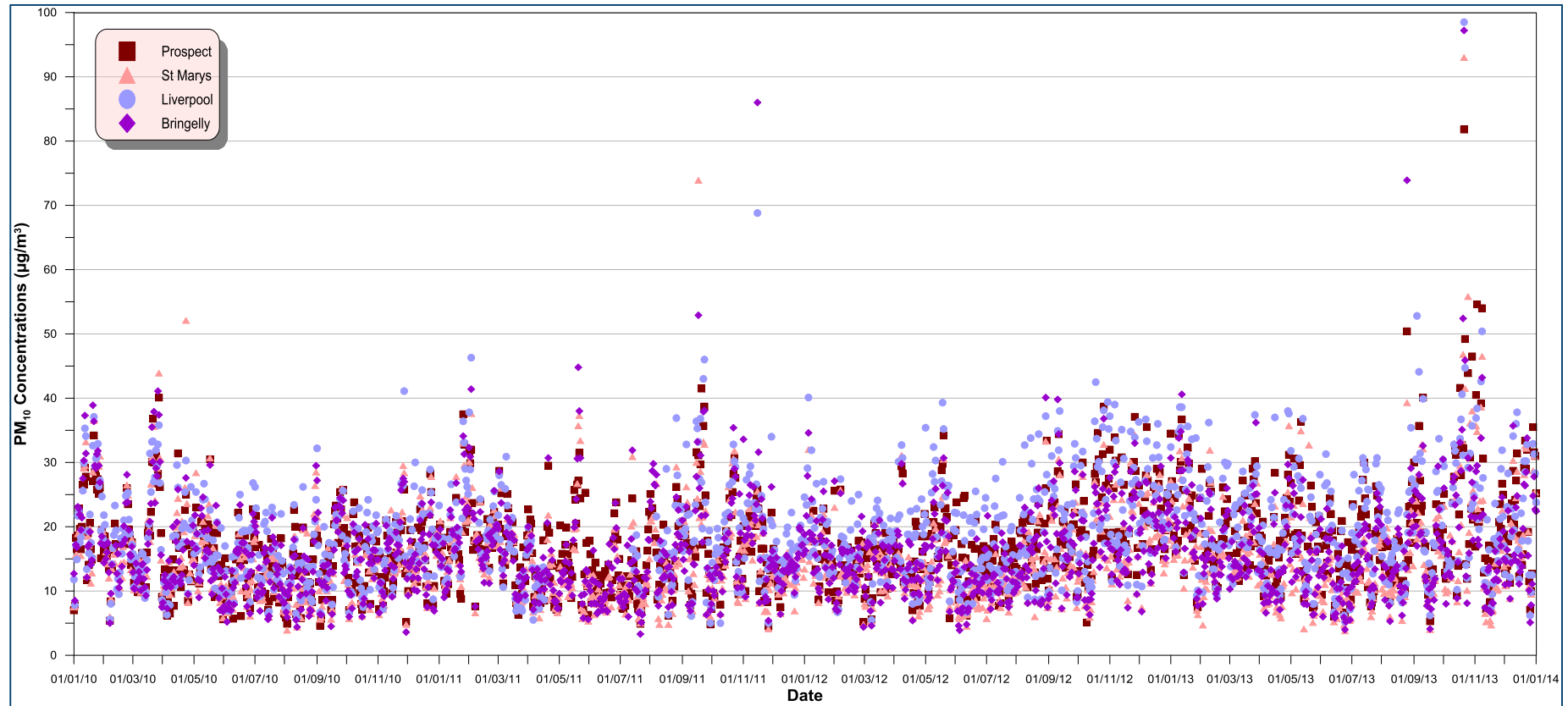


Figure 2-5: Summary of PM₁₀ monitoring data – NSW EPA

A review was also conducted of surrounding facilities to identify any additional monitoring data collected by these operations. The review identified that dust deposition monitoring is conducted at the Kemps Creek Landfill and the Brandown Resource Recovery Facility (RRF). These facilities are located approximately 0.9km north and 4km east, respectively, of the Project site. A summary of dust deposition monitoring at the Kemps Creek Landfill and Brandown RRF is shown in **Table 2-2** and **Table 2-3**, respectively. The data indicate levels above 4g/m²/month at some locations.

Table 2-2: Dust deposition monitoring data – SITA Kemps Creek (g/m²/month)

Year	D5	D6	D8	D10	D17	D20	D21
2007	2.3	3.9	5.3	5.6	5.3	3.6	2.2
2008	3.8	3.2	8.1	4.7	5.7	4.4	2.8
2009	3.6	4.3	6.4	4.9	5	3.8	2.9
2010	4.7	5.6	10.3	4.0	4.7	4.8	2.6
2011	2.8	6.7	5.3	3.3	5.5	2.2	2.9

Source: **AECOM, 2013**

Table 2-3: Dust deposition monitoring data – Brandown Pty Ltd (g/m²/month)

Date	Dust BD-1	Dust BD-2	Dust BD-3
January 2014	2.5	2.0	2.1
February 2014	4.7	5.3	3.3
March 2014	2.7	3.6	3.7

Source: **Brandown, 2014**

Data at some locations indicate levels above 4g/m²/month. The dust deposition monitors at these locations are generally located too close to the dust sources at the nearby operations to be representative of the deposited dust levels around the Project area.

2.5 AQIA results summary

Table 2-4 presents the particulate dispersion modelling results at each sensitive receptor shown in **Figure 2-1**. The incremental impact is the modelled impact associated with the operation of the proposed Project alone while the cumulative impact is defined as the modelled impact associated with the operation of the proposed Project combined with the estimated ambient background levels.

Table 2-4: Particulate dispersion modelling results for sensitive receptors

Receptor ID	PM _{2.5} (µg/m³)		PM ₁₀ (µg/m³)		TSP (µg/m³)	DD (g/m²/mth)	PM ₁₀ (µg/m³)	TSP (µg/m³)	DD (g/m²/mth)
	Incremental impact						Cumulative impact		
	24-hour average	Annual average	24-hour average	Annual average	Annual average	Annual average	Annual average	Annual average	Annual average
	-	-	-	-	-	2	30	90	4
1	0.2	0.03	1.7	0.2	0.4	0.02	15.9	47.5	2.1
2	0.2	0.03	1.9	0.2	0.4	0.03	15.9	47.5	2.1
3	0.2	0.03	1.7	0.2	0.4	0.03	15.9	47.5	2.1
4	0.5	0.07	3.9	0.6	1.1	0.08	16.3	48.2	2.2
5	0.5	0.07	3.6	0.5	1.1	0.08	16.2	48.2	2.2
6	0.4	0.06	3.0	0.5	0.9	0.07	16.2	48.0	2.2
7	0.2	0.02	1.3	0.2	0.4	0.02	15.9	47.5	2.1
8	0.1	0.02	1.2	0.2	0.3	0.02	15.9	47.4	2.1
9	0.4	0.02	2.4	0.2	0.3	0.02	15.9	47.4	2.1
10	0.7	0.05	4.1	0.4	0.8	0.06	16.1	47.9	2.1
11	0.8	0.07	5.1	0.5	1.1	0.09	16.2	48.2	2.2
12	0.2	0.01	1.3	0.1	0.2	0.01	15.8	47.3	2.1
13	0.3	0.01	1.9	<0.1	0.2	0.02	15.8	47.3	2.1
14	0.4	0.01	2.3	<0.1	0.2	0.02	15.8	47.3	2.1

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Receptor ID	PM _{2.5} (µg/m³)		PM ₁₀ (µg/m³)		TSP (µg/m³)	DD (g/m²/mth)	PM ₁₀ (µg/m³)	TSP (µg/m³)	DD (g/m²/mth)
	Incremental impact						Cumulative impact		
	24-hour average	Annual average	24-hour average	Annual average	Annual average	Annual average	Annual average	Annual average	Annual average
	-	-	-	-	-	2	30	90	4
15	0.5	0.03	3.5	0.2	0.4	0.04	15.9	47.5	2.1
16	0.9	0.03	5.2	0.2	0.4	0.05	15.9	47.5	2.1
17	0.9	0.04	5.6	0.3	0.5	0.07	16.0	47.6	2.2
18	1.4	0.11	8.2	0.8	1.6	0.19	16.5	48.7	2.3
19	0.9	0.10	5.2	0.8	1.4	0.11	16.5	48.5	2.2
20	0.6	0.07	3.8	0.5	1.0	0.08	16.2	48.1	2.2

The dust dispersion modelling results show that the Project would have a minimal impact at nearby assessed sensitive receptors. It is unlikely that the Project would result in any discernible change to existing background air quality levels.

A Level 1 assessment method, as outlined in the *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales (NSW DEC, 2005)*, was applied to examine the potential maximum total (cumulative) 24-hour average PM₁₀ impacts for the proposed Project.

The results of the Level 1 assessment are presented in **Table 2-5** for each of the sensitive receptors. Results indicate that the predicted maximum impact at all sensitive receptors is not likely to exceed the relevant criteria.

Table 2-5: Cumulative 24-hour PM₁₀ assessment - Maximum impact

Receptor ID	Predicted concentrations - incremental impact (µg/m ³)	Maximum background concentration (µg/m ³)	Predicted concentrations - maximum impact (µg/m ³)	Impact assessment criteria (µg/m ³)
1	1.7	40.1	41.8	50
2	1.9	40.1	42.0	50
3	1.7	40.1	41.8	50
4	3.9	40.1	44.0	50
5	3.6	40.1	43.7	50
6	3.0	40.1	43.1	50
7	1.3	40.1	41.4	50
8	1.2	40.1	41.3	50
9	2.4	40.1	42.5	50
10	4.1	40.1	44.2	50
11	5.1	40.1	45.2	50
12	1.3	40.1	41.4	50
13	1.9	40.1	42.0	50
14	2.3	40.1	42.4	50
15	3.5	40.1	43.6	50
16	5.2	40.1	45.3	50
17	5.6	40.1	45.7	50
18	8.2	40.1	48.3	50
19	5.2	40.1	45.3	50
20	3.8	40.1	43.9	50

3 APPLICABLE AIR QUALITY CRITERIA

Air quality criteria are benchmarks set to protect the general health and amenity of the community in relation to air quality. The air quality goals that are relevant to this Project are sourced from the NSW EPA document *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* (NSW DEC, 2005) and the National Environment Protection Council (NEPC) variation to the National Environment Protection Measure (NEPM) (NEPC, 2003).

Table 3-1 summarises the air quality goals that are relevant to the Project. The air quality goals for total impact relate to the total burden in the air and not just from the Project. Consideration of background dust levels needs to be made when using these goals to assess potential impacts.

Table 3-1: Project air quality criteria and goals

Pollutant	Averaging Period	Impact	Criterion
Total suspended particulates (TSP)	Annual	Total	90µg/m ³
Particulate matter with aerodynamic diameters ≤10µm (PM ₁₀)	Annual	Total	30µg/m ³
	24 hour	Total	50µg/m ³
Particulate matter with aerodynamic diameters ≤2.5µm (PM _{2.5})	Annual	Total	8µg/m ³
	24 hours	Total	25µg/m ³
Deposited dust	Annual	Incremental	2g/m ² /month
		Total	4g/m ² /month

Source: NSW DEC, 2005 & NEPC, 2003



4 AIR QUALITY MANAGEMENT

The proposed activities at the site will generate dust emissions, therefore it is prudent to take reasonable and practicable measures to prevent and minimise excessive generation of dust emissions to the surrounding environment.

4.1 Air emission sources

To ensure that dust generation during operational activities is managed and the potential for off-site impacts is reduced, appropriate operational and physical mitigation measures would be utilised.

Sources of air emissions from operational activities are identified and are as follows:

- ✦ Wind erosion of exposed areas and stockpiles;
- ✦ Handling of materials;
- ✦ Material processing (i.e. crushing);
- ✦ Vehicle movement and hauling materials; and
- ✦ Engine exhaust of vehicles and plant.

4.2 Dust mitigation measures

The primary dust mitigation measures that are to be applied to the on-site activities to minimise the generation and hence potential of impacts of dust at the nearby sensitive receivers and in the surrounding environment are outlined below.

4.2.1 General

- ✦ Site induction to include air quality management requirements to ensure awareness of potential air quality impacts;
- ✦ Activities are to be assessed during adverse weather conditions and modified as required (e.g. cease activity where reasonable levels of dust cannot be maintained using the available means);
- ✦ Visual surveillance of dust plumes from all activity;
- ✦ Haul roads and plant should be sited away from sensitive receivers where possible; and,
- ✦ The site should be fenced and/or landscaped on all sides to provide wind breaks to minimise on-site wind erosion (refer to landscape plan in **Figure 4-1**); and,
- ✦ Direct traffic to designated entrance and exit points.

4.2.2 Wind erosion of exposed areas and stockpiles

- ✦ The area of exposed surfaces should be minimised where practicable, such as by shaping stockpiles in a manner which reduces the exposed surface area, or by covering exposed surfaces;



- ✦ Exposed areas and stockpiles should be regularly watered to keep moisture levels sufficient to minimise wind erosion;
- ✦ Exposed areas should have barriers or coverings or should be temporarily rehabilitated where possible;
- ✦ Stockpiles should be located as far away from sensitive receivers as possible;
- ✦ All material to be stored in designated storage bays to reduce exposed surface and wind flows over material. Layout of material storage bays are shown in **Figure 4-1**;
- ✦ By scheduling material logistics, the amount of stockpiled materials on-site can be minimised by reducing their residence time by methods such as by receiving deliveries only when the amount of materials on-site are considered low or by disposing of materials to customers as soon as practicable when there are high amounts of material on-site. Appropriate allowance should be given such that there would be no shortage of materials;
- ✦ Construction activities should be progressively staged. The size of staging areas should be minimised by working on small areas and completing them before progressively proceeding to disturb another area;
- ✦ Completed sections should be rehabilitated as soon as practicable; and,
- ✦ Ancillary vehicles should be kept off exposed areas to avoid potential disturbances of these areas.

4.2.3 Handling of material

- ✦ When loading and unloading material, the drop height of the material should be minimised as far as is practical, for example the front end loader should tip the bucket only when it is close to the ground, the bed of the truck or the material pile being added to;
- ✦ Minimise spillage from loading/unloading and clean up any spillage as soon as practicable;
- ✦ Use of watering to ensure moisture content of material handling is sufficient to minimise dust generation; and,
- ✦ During periods of high wind speeds and winds blowing towards the sensitive receivers, the material handling activities should be minimised or stopped as practicable.

4.2.4 Material processing (i.e. crushing)

- ✦ When operating the crusher, the materials being crushed should be sprayed with water;
- ✦ The conveyor of the crusher should be adjusted such that the drop height of the material is as low as practicable (e.g. as close to the ground or to the area where the materials are dropped);
- ✦ Overloading of the conveyor should be prevented to avoid spillage; and,
- ✦ If possible, appropriate wind shields and chutes should be installed on the conveyors.



4.2.5 Vehicle movement and hauling materials

- ✦ Haul roads should be watered regularly using water sprinklers and/or water carts such that the road surface has sufficient moisture to minimise on-road dust generation but not as much to cause mud/dirt track out;
- ✦ Roads that are heavily used or used for a long term and cannot be maintained in a low-dust state by watering should be sealed;
- ✦ Sealed haul roads should be cleaned regularly. When spillage occurs, it should be cleaned as soon as possible;
- ✦ Vehicle traffic should be restricted to designated routes that can be managed by regular watering;
- ✦ A speed limit of no more 40 kilometres per hour should be imposed on-site;
- ✦ To minimise mud or dirt track out (e.g. during prolonged wet rainy periods), a wheel wash or grids are to be installed and used near exit points;
- ✦ Streets should be cleaned to remove dirt tracked onto sealed roads;
- ✦ Vehicle loads should be secured and covered when transporting materials. The exposed surface of the materials to be hauled should be watered if needed;
- ✦ Materials loaded onto vehicles should be levelled and not be higher than the highest side of the vehicle load compartment; and,
- ✦ The number of trips should be minimised such as by maximising the vehicle load but not overloading.

4.2.6 Engine exhaust of vehicles and plant

- ✦ Where possible, the use of vehicles and plant should be minimised by scheduling operations to maximise their use (e.g. using at or near to their capacity) in order to minimise the amount of time they will need to be utilised;
- ✦ When not in use, engines of on-site vehicles and plant should be switched off;
- ✦ Pollution reduction devices should be fitted to vehicles and plant where practicable; and,
- ✦ Vehicles and plant should be maintained and serviced according to manufacturer's specifications.



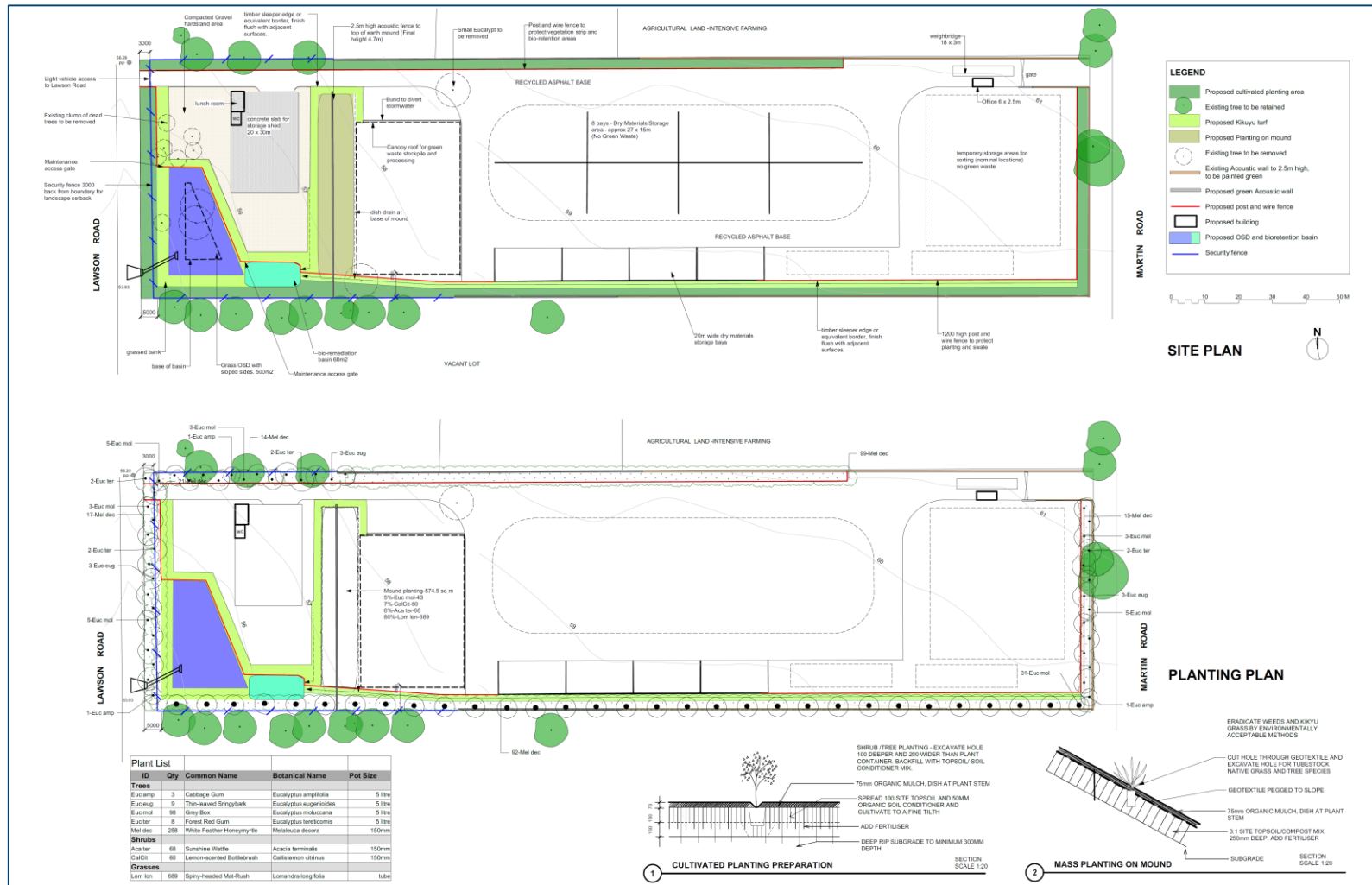


Figure 4-1: Landscape plan for the Project

4.3 Odour mitigation measures

Odour emissions can potentially arise from the processing and storage of green waste material at the site. The primary odour mitigation measures that are to be applied to the on-site activities to minimise the generation and hence potential for odour impacts at the nearby sensitive receivers, and in the surrounding environment, are outlined below.

- ✦ Green waste material to be obtained only from construction and demolition activities conducted by the Proponent;
- ✦ Only fresh green waste material to be received at the site;
- ✦ Green waste material would be processed on-site (chipped or shredded) in designated undercover area (see **Figure 4-2** showing indicative design of green waste awning roof);
- ✦ All green waste material would dispatched off-site within a nominal 24-hour period; and
- ✦ No composting of green waste material to occur at the site.

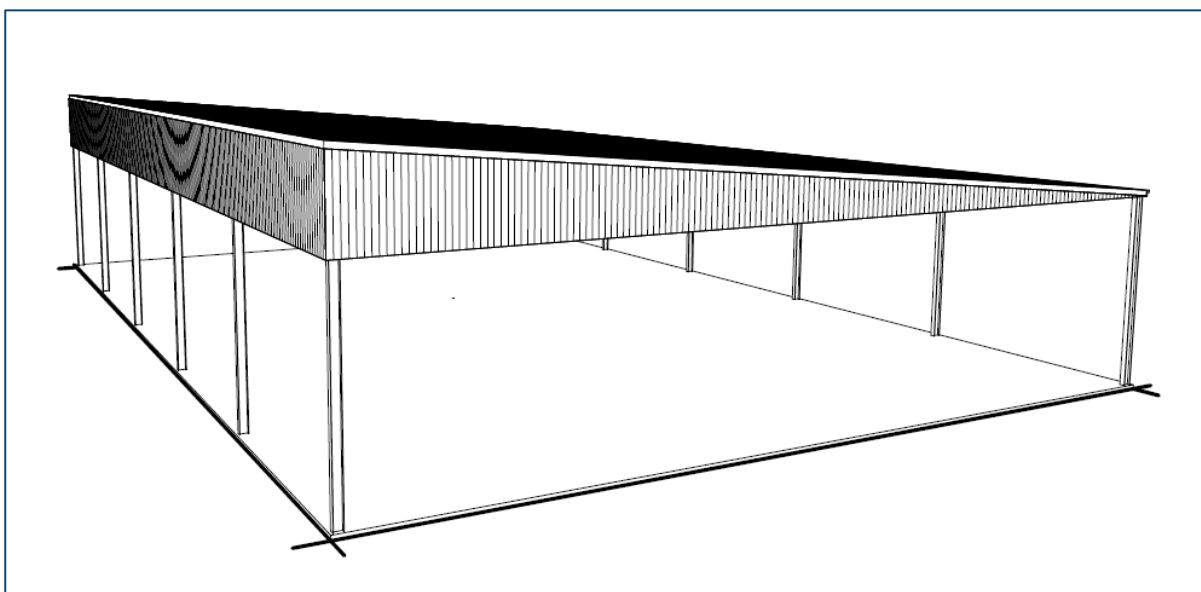


Figure 4-2: Indicative design of green waste awning roof

4.4 Key performance indicators

The key performance indicators for the Project are associated with the potential for air quality impacts to arise at the surrounding sensitive receptor locations. The key performance indicators are triggered when:

- ✦ A complaint is received regarding air quality from the operation of the Project; or
- ✦ Significant visual dust plumes arise from the activities or areas associated with the Project.

These key performance indicators will give some insight into management of the operation and if the objectives of the AQMP are being met. If these key performance indicators are triggered at any time, further contingency action would be required.

Contingency actions may include the following depending on the situation:

- ✦ A review of local conditions at the time of the event;
- ✦ An investigation and review of activities occurring at the time of the event and consideration of ways to prevent further events;
- ✦ A review of current control measures which are ineffective and implementation of new control measures.

4.5 Complaints management

All complaints are to be considered. A complaints line will be made available for any complaints regarding air quality impacts to be made. Any incident or complaint relating to air quality will be recorded and investigated to identify wherever possible the specific cause and corrective action will be implemented where necessary and feasible to do so. The following would be conducted where required:

- ✦ Review of air quality management practices to systematically identify and implement options to modify site practices, to ensure effective control of activities so as to achieve compliance with the air quality criteria; and
- ✦ All complaints will be documented by appropriate personnel on the complaints register along with the correction action taken.

The complaints register will document the following information of each complaint:

- ✦ Date and time complaint was lodged;
- ✦ Details of complainant (if provided);
- ✦ Nature of complaint;
- ✦ Action taken and reasoning behind action; and
- ✦ Follow up with the complainant.

The complainant will be advised of any actions implemented or proposed and their feedback sought in this regard.

4.6 Monitoring systems

4.6.1 Air quality monitoring

The NSW EPA ambient air quality monitoring data and regional Air Quality Index will be regularly reviewed. The environmental manager at the site will subscribe to the daily email and SMS forecasts and alerts for Sydney and use them as part of the day to day management of the Project operations.

When a warning message is received indicating that the regional Air Quality Index is forecast to be "high", the operations at the site will be reviewed to ensure visible dust is minimised as far as practicable.

For days on which the NSW EPA issues a "poor" or worse forecast or alert for Sydney, the Project should consider the implementation of additional watering controls and to modify the proposed activities for the day.

Measures should also be taken to reduce the risk of pollutant exposure from local incidents such as fires, and potentially the emissions from any new neighbouring operations.

4.6.2 Meteorological monitoring

Meteorological observations from a nearby Bureau of Meteorology (BoM) station (see <http://www.bom.gov.au/nsw/observations/sydney.shtml>) would be regularly reviewed. When any complaint is received or adverse event is logged, the meteorological conditions at the time and up to 10 hours prior will be also recorded. This information will provide insight into the meteorological conditions that result in these events and assist with the development of preventative measures.

The meteorological forecast conditions (see <http://www.bom.gov.au/australia/meteye/>) will be reviewed prior to the commencement of daily activities. This would provide a peremptory alert for any periods of weather conditions that may affect the proposed operations, allowing them to be altered as required to minimise the risks.

4.7 Roles and responsibilities

Air quality management roles and responsibilities are listed in **Table 4-1**.

Table 4-1: Roles and responsibilities

Role	Responsibility
Operations Manager	<ul style="list-style-type: none"> ✦ Provide sufficient resources to manage air quality related risks and progress opportunities for improvement. ✦ Identify and allocate sufficient resources to manage air quality related risks by supporting AQMP implementation.
WH&S/ Environment Manager	<ul style="list-style-type: none"> ✦ Oversee the implementation, monitoring and review of the AQMP in accordance with applicable requirements. ✦ Record, investigate and respond to air quality related incidents and complaints in accordance with complaint and incident management procedures. ✦ Provide training to employees and contractors for the implementation of management related procedures. ✦ Implement, monitor and review programs, systems and procedures linked to the AQMP.

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Role	Responsibility
Employees	<ul style="list-style-type: none"> ✦ Attend and complete site inductions. ✦ Conduct work activities in accordance with the directions of the supervisor and the AQMP. ✦ Report non-compliances or suspected near misses to the supervisor.

4.8 Environmental air quality awareness and training

Training will be provided commensurate with the roles and responsibilities of personnel outlined in **Table 4-1**.

Training implemented with respect to air quality management includes the following:

- ✦ Site familiarisation inductions provided to all new employees and contractors;
- ✦ General environmental awareness provided to all employees and contractors; and
- ✦ Issue specific training sessions provided to employees and contractors involved in the use of watering and other mitigation measures to control dust.

5 REPORTING AND REVIEW

Project evaluation reports would be prepared annually with the purpose of outlining the activity at the Project and the compliance with the relevant air quality goals.

The annual evaluation report would include a detailed summary of activities performed at the site during the annual period and include a summary of the analysis of the actions taken in regard to the key performance indicators for the Project.

Any non-compliance event, near misses and complaints received regarding the Project would be outlined in the annual evaluation report. Details regarding the nature of the complaint and actions taken to address the complaint including any comment regarding the effectiveness of the measures of further actions should be noted.



10 REFERENCES

AECOM (2013)

"Expansion of the Advanced Waste Treatment Facility, Kemps Creek Resource Recovery Precinct – Air Quality Impact Assessment", prepared for SITA Australia Pty Ltd by AECOM, March 2013

Brandown (2014)

www.brandown.com.au/environmental-monitoring-data

Bureau of Meteorology (2014)

Climate Averages Australia, Bureau of Meteorology website.
<http://www.bom.gov.au/climate/averages>

NEPC (2003)

"National Environment Protection (Ambient Air Quality) Measure", National Environment Protection Council Service Corporation, Level 5, 81 Flinders Street, Adelaide SA 5000.

NSW DEC (2005)

"Approved Methods for the Modelling and Assessment of Air Pollutants in NSW", August 2005

Todoroski Air Sciences (2015)

"Air Quality Impact Assessment – Proposed Resource Recovery Facility at 25 Martin Road, Badgerys Creek NSW", prepared by Todoroski Air Sciences for Precise Planning, October 2015.

