

# APPENDICES



## Appendix A

# PROJECT APPROVAL



# Project Approval

## Section 75J of the *Environmental Planning and Assessment Act 1979*

As delegate for the Minister for Planning and Infrastructure, I approve the project application referred to in Schedule 1, subject to the conditions in Schedules 2 to 5.

These conditions are required to:

- prevent, minimise, and/or offset adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the Project.

Sydney

1< January

2012



Marcus Ray  
Acting Deputy Director-General

### SCHEDULE 1

<b>Application No:</b>	08_0255
<b>Proponent:</b>	Elf Farm Supplies Pty Ltd and Elf Mushrooms
<b>Approval Authority:</b>	Minister for Planning and Infrastructure
<b>Substrate Plant Site Land:</b>	Lot 14 DP 1138749 and part Lot 13DP 1138749 108 Mulgrave Road, Mulgrave
<b>Mushroom Farm Site Land:</b>	Lot 138 DP 752037, 521 The Northern Road, Londonderry
<b>Project:</b>	Elf Substrate Plant and Elf Mushroom Farm Project

## DEFINITIONS

APZ	Asset Protection Zone
BCA	Building Code of Australia
Construction	The demolition of buildings or works, carrying out of works, including bulk earthworks, and erection of buildings and other infrastructure covered by this approval
Day	The period from 7am to 6pm on Monday to Saturday, and 8am to 6pm on Sundays and Public Holidays
Department	Department of Planning and Infrastructure
Director-General	Director-General of the Department (or delegate)
EA	Environmental assessment titled Mushroom Industry Expansion in Western Sydney – Environmental Assessment dated December 2010 and the associated response to submissions, dated 17 March 2011 and 15 June 2011
ENM -	Excavated Natural Material
EPA	Environment Protection Authority of NSW
EP&A Act	Planning & Assessment Act 1979
EP&A Regulation	Environmental Planning & Assessment Regulation 2000
EPL	Environment Protection Licence
Evening	The period from 6pm to 10pm
Feasible	Feasible relates to engineering considerations and what is practical to build
Heavy Vehicle	Any vehicle with a gross vehicle mass of 5 tonnes or more
Incident	An incident causing or threatening material harm to the environment, and/or an exceedance of the limits or performance criteria in this approval
Land	In general, the definition of land is consistent with the definition in the EP&A Act.
LGA	Local government area
Material harm to the environment	Harm to the environment is material if it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial
Minister	Minister for Planning and Infrastructure
Mitigation	Activities associated with reducing the impacts of the Project
Mushroom Farm site	Lot 138 DP 752037 521 The Northern Road, Londonderry
Night	The period from 10pm to 7am on Monday to Saturday, and 10pm to 8am on Sundays and Public Holidays
NOW	NSW Office of Water
OEH	Office of Environment and Heritage
Operation (Mushroom farm site)	Operation commences when the Substrate Plant increases production above 1,000 tonnes of substrate per week
Operation (Substrate Plant site)	Operation commences upon receipt of substrate at the Mushroom Farm site
Phase 1 substrate	Substrate that has been through the composting process only
Phase 2 substrate	Phase 1 substrate that has been pasteurised at high temperature
Phase 3 substrate	Phase 2 substrate that contains mushroom spawn
POEO Act	Protection of the Environment Operations Act 1997
Project	The development described in the EA
Proponent	Elf Farm Supplies Pty Ltd and Elf Mushrooms or their successor in title
Reasonable	Reasonable relates to the application of judgment in arriving at a decision, taking into account: mitigation benefits, costs of mitigation versus benefits provided community views, and the nature and extent of potential improvements.
Rehabilitation	The treatment or management of land disturbed by the Project for the purpose of establishing a safe, stable and non-polluting environment
RMS	Roads and Maritime Services (formerly Roads and Traffic Authority)
SRDAC	Sydney Regional Development Advisory Committee
Stages 1 to 5 at the Mushroom Farm site	The development stages shown on the plan in Appendix 4
Stages 1 to 3 at the Substrate Plant site	The development stages shown on the plan in Appendix 2
Statement of Commitments	Proponent's Statement of Commitments in Appendix 1
Substrate	Mushroom growing medium
Substrate Plant site	Lot 14 DP 1138749 and part Lot 13 DP 1138749, 108 Mulgrave Road, Mulgrave
Vegetation Management Area	The area shown on the Plan in Appendix 5
VENM	Virgin Excavated Natural Material

## SCHEDULE 2 ADMINISTRATIVE CONDITIONS

### OBLIGATION TO MINIMISE HARM TO THE ENVIRONMENT

1. The Proponent shall implement all reasonable and feasible measures to prevent and/or minimise any harm to the environment that may result from the construction, operation or decommissioning of the Project.

### TERMS OF APPROVAL

2. The Proponent shall carry out the Project generally in accordance with the:
  - (a) EA;
  - (b) statement of commitments (see Appendix 1);
  - (c) site layout plans and drawings in the EA; and
  - (d) conditions of this approval.
3. If there is any inconsistency between the above, the conditions of this approval shall prevail to the extent of any inconsistency.
4. The Proponent shall comply with any reasonable requirement/s of the Director-General arising from the Department's assessment of:
  - (a) any reports, plans, strategies, programs or correspondence that are submitted in accordance with this approval; and
  - (b) the implementation of any actions or measures contained in these reports, plans, strategies, programs or correspondence.
5. This approval shall lapse if the Proponent does not physically commence the proposed development associated with this approval within 5 years of the date of this approval.

### LIMITS ON APPROVAL

#### Substrate Plant Site

6.
  - (1) The Proponent shall ensure that the Project on the Substrate Plant site does not:
    - a) produce more than 3,200 tonnes per week of phase 1 substrate; subject to (2) below and
    - b) dispatch more than 1,920 tonnes of phase 3 substrate per week.
  - (2) The proponent must not produce on the Substrate Plant site more than 1,000 tonnes of phase 1 substrate per week except in accordance with a staged approval granted by the Director-General in accordance with condition 7 Schedule 2 below.
7.
  - (1) The Proponent may apply to the Director-General for approval to increase production of substrate up to the rate of 1,600 tonnes of phase 1 substrate a week on the Substrate Plant site if –
    - a) the Odour Management Plan required under condition 6 of Schedule 4 has been prepared to the satisfaction of the Director-General and is being implemented; and
    - b) an independent odour audit has been prepared and submitted in accordance with condition 5 of Schedule 3.
  - (2) The Proponent may apply to the Director-General for approval to increase production of substrate up to the rate of 2,400 tonnes of phase 1 substrate a week on the Substrate Plant site if –
    - a) the site has been producing phase 1 substrate at a rate between 1,500 and 1,600 tonnes per week in accordance with an approval granted by the Director-General under this condition; and
    - b) an independent odour audit of the site operating in this range has been prepared and submitted in accordance with condition 5 of Schedule 3;
  - (3) The Proponent may apply to the Director-General for approval to increase production of substrate up to the rate of 3,200 tonnes of phase 1 substrate a week on the Substrate Plant site if –
    - a) the site has been producing phase 1 substrate at a rate between 2,300 and 2,400 tonnes per week in accordance with an approval granted by the Director-General under this condition; and
    - b) an independent odour audit of the site operating in this range has been prepared and submitted in accordance with condition 5 of Schedule 3.
  - (4) In deciding whether to approve an increase in substrate production under this condition, the Director-General must:
    - a) assess the odour performance of the premises at its current rate of production; and
    - b) assess the likely odour impacts from the proposed increase; and
    - c) consider the requirement not to cause or permit the emission of offensive odours from the Substrate Plant site as defined in section 129 of the POEO Act.

## **Mushroom Farm Site**

8. The Proponent shall ensure that the Mushroom Farm site does not produce more than 220 tonnes mushrooms per week.

## **EXISTING DEVELOPMENT CONSENTS AND RIGHTS**

9. The Proponent shall surrender all existing development consents in accordance with Clause 97 of the EP&A Regulation for the land referred to in Schedule 1, within 12 months of commencement of stage 1 operations, or as otherwise agreed by the Director-General.

*Note: This requirement does not extend to the surrender of construction and occupation certificates for existing and proposed building works under Part 4A of the EP&A Act. Surrender of a consent or approval should not be understood as implying that works legally constructed under a valid consent or approval can no longer be legally maintained or used.*

## **TRANSITIONAL ARRANGEMENTS**

10. All existing environmental management plans that apply to the Substrate Plant site under DA No. 0623/02, DA No. 0571/06, DA No. 0921/06, DA No. 0701/07 and DA No. 0120/09 shall continue to be fully applied until replaced under this approval.

## **STRUCTURAL ADEQUACY**

11. The Proponent shall ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures are constructed in accordance with the relevant requirements of the BCA.

*Notes:*

- Under Part 4A of the EP&A Act, the Proponent is required to obtain construction and occupation certificates for the proposed building works.
- Part B of the EP&A Regulation sets out the requirements for the certification of the Project.

## **DEMOLITION**

12. The Proponent shall ensure that all demolition work is carried out in accordance with *Australian Standard AS 2601:2001: The Demolition of Structures*, or its latest version.

## **OPERATION OF PLANT AND EQUIPMENT**

13. The Proponent shall ensure that all plant and equipment used for the Project:
  - (a) maintained in a proper and efficient condition; and
  - (b) operated in a proper and efficient manner.

## **UTILITIES**

14. Prior to the construction of any utility works, the Proponent shall obtain the necessary approvals from relevant service providers.

## **SUBMISSION OF PLANS OR PROGRAMS**

15. With the written approval of the Director-General, the Proponent may:
    - (a) submit any reports, plans, strategies or programs required by this approval on a progressive basis; and
    - (b) combine any reports, plans, strategies or programs required for the Substrate Plant site with any similar reports, plans, strategies or programs for the Mushroom Farm site.
    - (c) separate any reports, plans, strategies or programs required for the Substrate Plant site from any similar reports, plans, strategies or programs for the Mushroom Farm site.
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**SCHEDULE 3**  
**SPECIFIC ENVIRONMENTAL CONDITIONS - SUBSTRATE PLANT SITE**

**CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN**

1. The Proponent shall prepare and implement a Construction Environmental Management Plan for the Substrate Plant site to the satisfaction of the Director-General. This Plan must:
  - (a) be prepared in consultation with NOW and OEH;
  - (b) be submitted for approval prior to commencement of construction, and include:
    - a noise and vibration management plan, including a noise monitoring program that can be used to demonstrate compliance with the construction noise criteria in Condition 18 below;
    - an air quality management plan;
    - a soil and water management plan, including details of the erosion and sediment control measures to be used on site;
    - a flora and fauna management plan;
    - a heritage management plan;
    - a traffic management plan; and
    - a waste management plan.

**AIR QUALITY**

**Offensive Odours**

2. The Proponent shall not cause or permit the emission of offensive odours from the Substrate Plant site, as defined under Section 129 of the POEO Act.
3. The Proponent shall design, operate and maintain the bio-scrubber stacks at the Substrate Plant site in a manner that would achieve emissions compliance with the EPL for the Substrate Plant site. The Proponent must advise the Department of any variations to the EPL as approved by the EPA.

**Odour Management Plan**

4. The Proponent shall prepare and implement an Odour Management Plan for the Substrate Plant site to the satisfaction of the Director-General. This plan must:
  - (a) be prepared in consultation with the OEH by a suitably independent, qualified and experienced expert whose appointment has been endorsed by the Director-General;
  - (b) be submitted to the Director-General for approval within 3 months of the date of this approval;
  - (c) describe in detail the measures that would be implemented on site to minimise the odour impacts of the Project, such as storing the stable bedding in the pre-wet shed extension building in Stages 2 and 3, and to ensure that these measures remain effective over time;
  - (d) identify triggers for remedial and contingency action; and
  - (e) include a program for monitoring the odour impacts of the Project.

**Odour Management Audit**

5. Prior to commencement of operation of each development stage at the Substrate Plant site, the Proponent shall commission and pay the full cost of an Independent Odour Audit on the site. This audit must:
  - (a) be prepared in consultation with OEH by a suitably qualified, experienced and independent expert whose appointment has been endorsed by the Director-General;
  - (b) assess the effectiveness of the odour controls on site in protecting receivers against offensive odours;
  - (c) review the Proponent's production data (that are relevant to the odour audit) and complaint records;
  - (d) review the effectiveness of the Odour Management Plan for the Project and advise whether any changes to the Plan are considered necessary;
  - (e) determine whether the Project is complying with condition 2 above; and, if necessary,
  - (f) recommend whether additional measures are required to minimise the odour emissions of the Project, such as enclosing the bale wetting area and water recycling pits and enclosing the chicken manure storage area.
6. Within 2 weeks of this audit being completed, or in a timeframe as otherwise agreed by the Director-General, the Proponent shall submit a copy of the audit report to OEH and the Director-General together with an action plan demonstrating how the findings of the audit are to be implemented.

**Dust**

7. The Proponent shall implement all reasonable and feasible measures to minimise dust generated at the Substrate Plant site.
8. During the construction and operation of the project, the Proponent shall ensure that:
  - (a) all trucks entering or leaving the Substrate Plant site with loads have their loads covered;

- (b) the trucks associated with the Project do not track dirt onto the public road network;
- (c) all areas are maintained in a condition to minimise the emission of wind-blown or traffic-generated dust, to the satisfaction of the Director-General.

## **GREENHOUSE GAS**

### **Energy Efficiency Plan**

- 9. The Proponent shall prepare and implement an Energy Efficiency Plan on the Substrate Plant site to the satisfaction of the Director-General. This plan must:
  - (a) be submitted to the Director-General for approval prior to the commencement of operations on the site;
  - (b) describe the measures that would be implemented to minimise energy use on the site;
  - (c) explore the possibility of using renewable energy use to generate power; and
  - (d) include a program to monitor the effectiveness of these measures, and a protocol to periodically review the plan.

## **SITE OPERATION**

### **Fire Management**

- 10. The Proponent shall:
  - (a) implement suitable measures to minimise the risk of fire on the Substrate Plant site;
  - (b) extinguish any fires on the Substrate Plant site promptly; and
  - (c) maintain adequate fire-fighting capacity on the Substrate Plant site.

### **Hazards**

- 11. The Proponent shall ensure that all dangerous goods and hazardous substances are stored and handled on the Substrate Plant site in accordance with the Dangerous Goods Code and AS 1940-2004: *The storage and handling of flammable and combustible liquids*.

### **Waste**

- 12. The Proponent must not cause, permit or allow any waste generated outside the Substrate Plant site to be received at the site for storage, treatment, processing, reprocessing or disposal at the Substrate Plant site, except with the approval of the Director-General and as expressly permitted by a licence under the *Protection of the Environment Operations Act 1997*.

### **Bunding**

- 13. The Proponent shall store all chemicals, fuels and oils used on the Substrate Plant site in appropriately banded areas, with impervious flooring and sufficient capacity to contain 110% of the largest container stored within the bund, unless double-skinned tanks are used. Any bunds shall be designed and installed in accordance with the requirements of all relevant Australian Standards, and/or DECCW's *Storage and handling liquids: Environmental Protection - Participant's Manual*.

## **SOIL and WATER**

### **Discharge Limits**

- 14. Except as may be expressly provided by an EPL for the Substrate Plant site, the Proponent must comply with Section 120 of the POEO Act.
- 15. The Proponent shall ensure that only VENM and/or ENM or material approved by the OEHS is used as fill.
- 16. The Proponent shall ensure that filling of the manoeuvring area shall be undertaken in accordance with plans submitted with DA 0571/06.

### **Water Management Plan**

- 17. The Proponent shall prepare and implement a Water Management Plan for the Substrate Plant site to the satisfaction of the Director-General. The plan must be submitted to the Director-General for approval prior to the commencement of operation of Stage 1 and be prepared in consultation with OEH and NOW.

## **NOISE**

## Construction Noise Criteria

18. The Proponent shall ensure that the construction noise generated at the Substrate Plant site does not exceed the criteria in Table 1.

Table 1: Construction Noise impact assessment criteria dB(A)

Receiver/Location	Day
	LAeq(15 min)(te)
R1-46 Mulgrave Road, Mulgrave	52
R2-Mulgrave Industrial area	6p
R3 - 2 Railway Road, Mulgrave	52
R4 -126 Mulgrave Road, Mulgrave	5
R5 - Chisholm Place, South Windsor	51

Notes:

- Noise generated by the Project is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy.

## Operational Noise Criteria

19. The Proponent shall ensure that the operational noise generated by the Substrate Plant site does not exceed the criteria in Table 2.

Table 2: Operational Noise impact assessment criteria dB(A)

Receiver/Location	Day/Evening	Night
	LAeq(15 minute)	LAeq(15 minute)
R1-46 Mulgrave Road, Mulgrave		
R2 -Mulgrave Industrial area	42	42
R3 -2 Railway Road, Mulgrave		
R4 - 126 Mulgrave Road	44	39
R5 - Chisholm Place, South Windsor		

Notes:

- Noise generated by the Project is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy.

## Hours of Work

20. The Proponent shall comply with the operating hours in Table 3 at the Substrate Plant site, unless otherwise agreed to in writing by the Director-General.

Table 3: Operating hours

Activity	Day	Time
Construction	Monday – Friday	7:00am to 6:00pm
	Saturday	8:00am to 1:00pm
	Sunday and Public Holidays	Nil
Operation	All days	Any time

## Additional Noise Mitigation Measures

21. The Proponent shall install the southern boundary noise wall adjacent to the bale storage shed on the Substrate Plant site prior to commencement of other stage 1 construction works.

## Noise Management Plan

22. The Proponent shall prepare and implement a Noise Management Plan for the Substrate Plant site in consultation with OEH to the satisfaction of the Director-General. The Plan must be submitted to the Director-General for approval prior to commencement of operations, and include a noise monitoring protocol for evaluating compliance with the noise impact assessment criteria in this approval.

## BIODIVERSITY

### Riparian Management Area

23. The Proponent shall establish a fenced, 35 metre wide riparian corridor along the length of South Creek within 12 months of commencement of operation of Stage 1. The Proponent shall consult with the

Hawkesbury-Nepean Catchment Management Authority on methods and species selection to ensure that best practise techniques are used at the site, to the satisfaction of the Director-General.

## **VISUAL AMENITY**

### **Lighting**

24. The Proponent shall ensure that all external lighting associated with the Substrate Plant site:
- (a) does not create a nuisance to surrounding properties or roadways; and
  - (b) complies with *AS 4282(NT) 1995 – Control of Obtrusive Effects of Outdoor Lighting*.

### **Signage**

25. The Proponent shall not install any advertising signs on the Substrate Plant site without the written approval of the Director-General.

## **TRANSPORT**

26. The Proponent shall ensure that:
- (a) car parking is constructed in accordance with the relevant requirements of the latest version of *AS 2890. 1*; and
  - (b) vehicles associated with the Substrate Plant site do not park or queue on the public road network at any time.
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**SCHEDULE 4**  
**\$PECIFIC ENVIRONMENTAL CONDITIONS - MUSHROOM FARM SITE**

**CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN**

1. The Proponent shall prepare and implement a Construction Environmental Management Plan for the Mushroom Plant site to the satisfaction of the Director-General. This Plan must:
  - (a) be prepared in consultation with NOW and OEH;
  - (b) be submitted for approval prior to commencement of construction, and include:
    - a noise and vibration management plan, including a noise monitoring program that can be used to demonstrate compliance with the construction noise criteria in Condition 15 below;
    - an air quality management plan;
    - a soil and water management plan, including details of the erosion and sediment control measures to be used on site;
    - a flora and fauna management plan;
    - a heritage management plan, including the programs/procedures to be implemented in the event that previously unidentified relics are discovered (Condition 21)
    - a traffic management plan; and
    - a waste management plan.

**AIR QUALITY**

**Offensive Odours**

2. The Proponent shall not cause or permit the emission of offensive odours from the Mushroom Farm site, as defined under Section 129 of the POEO Act.

**Dust**

3. The Proponent shall implement all reasonable and feasible measures to minimise dust generated at the Mushroom Farm site.
4. During the construction and operation of the project, the Proponent shall ensure that:
  - (a) all trucks entering or leaving the Mushroom Farm site with loads have their loads covered;
  - (b) the trucks associated with the Project do not track dirt onto the public road network;
  - (c) all areas are maintained in a condition to minimise the emission of wind-blown or traffic-generated dust;to the satisfaction of the Director-General.

**GREENHOUSE GAS**

**Energy Efficiency Plan**

5. The Proponent shall prepare and implement an Energy Efficiency Plan on the Mushroom Farm site to the satisfaction of the Director-General. This plan must:
  - (a) be submitted to the Director-General for approval prior to the commencement of operations on the site;
  - (b) describe the measures that would be implemented to minimise energy use on the site;
  - (c) explore the possibility of using renewable energy use to generate power; and
  - (d) include a program to monitor the effectiveness of these measures, and a protocol to periodically review the plan.

**SITE OPERATION**

**Hazard and Risk**

6. The Proponent shall:
  - (a) provide and manage a 24 metre wide APZ between the buildings on the Mushroom Farm site and any bushfire hazard;
  - (b) implement suitable measures to minimise the risk of fire on the Mushroom Farm site;
  - (c) extinguish any fires on the Mushroom Farm site promptly;
  - (d) maintain adequate fire-fighting capacity on the Mushroom Farm site; and
  - (e) construct the proposed office building in compliance with section 7 (BAL 29) Australian Standard AS 3959-2009 *Construction of buildings in bush fire-prone areas* and section A3.7 Addendum Appendix 3 of *Planning for Bushfire Protection 2006*.
7. The Proponent shall ensure that all dangerous goods and hazardous substances are stored and handled on the Mushroom Farm site in accordance with the Dangerous Goods Code and AS 1940-2004: *The storage and handling of flammable and combustible liquids*.

## **Waste**

8. The Proponent must not cause, permit or allow any waste generated outside the Mushroom Farm site to be received at the site for storage, treatment, processing, reprocessing or disposal of at the site, except with the approval of the Director-General and as expressly permitted by a licence under the *Protection of the Environment Operations Act 1997*.

## **SOIL AND WATER**

### **Pollution of waters**

9. Except as may be expressly provided in an EPL for the Mushroom Farm site, the Proponent must comply with Section 120 of the POEO Act.

### **Bunding**

10. The Proponent shall store all chemicals, fuels and oils used on the Mushroom Farm site in appropriately bunded areas, with impervious flooring and sufficient capacity to contain 110% of the largest container stored within the bund, unless double-skinned tanks are used. Any bunds shall be designed and installed in accordance with the requirements of all relevant Australian Standards, and/or DECCW's *Storage and handling liquids: Environmental Protection – Participant's Manual*.

### **Minimising Impacts of Chemicals**

11. The Proponent shall ensure that the use of chemicals (including pesticides and herbicides) on the Mushroom Farm site carried out in accordance with:
  - (a) *Agricultural and Veterinary Chemicals Act 1994*; and
  - (b) *Agricultural and Veterinary Chemicals (NSW) Regulation 2000*

### **Imported Soil**

12. The Proponent shall ensure that only VENM and/or ENM or material approved by the OEH is used as fill.

### **Water Management Plans**

13. The Proponent shall prepare and implement an operational Water Management Plan for the Project on the Mushroom Farm site in consultation with OEH, Penrith City Council and NOW to the satisfaction of the Director-General. The plan must:
  - (a) be submitted to the Director-General for approval prior to the commencement of operations;
  - (b) include:
    - a Stormwater Management Plan;
    - a Recycled Water Management Plan; and
    - an effluent irrigation plan.

## **NOISE**

### **Construction Noise Mitigation**

14. The Proponent shall install the northern environmental bund prior to commencement of any other construction works at the Mushroom Farm site.  
Installation of the northern environmental bund must be completed within a period of not more than 3 months.

## Construction Noise Criteria

15. The Proponent shall ensure that the construction noise generated at the Mushroom Farm site does not exceed the criteria in Table 4.

Table 4: Construction noise criteria dB A

Receiver/Location	Day LAeq(15 minute)
Receiver 1-493 The Northern Road, Londonderry	49
Receiver 2 – 509 The Northern Road, Londonderry	54
Receiver 3 – 1 Thomas Road, Londonderry	54
Receiver 4- 6-16 Timothy Road, Londonderry	45

Notes:

- Noise generated by the Project is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy.
- The construction noise criteria do not apply to any works associated with the installation of the northern environmental bund (Condition 14 above).

## Operational Noise Criteria

16. The Proponent shall ensure that the operational noise generated by the Mushroom Farm site does not exceed the criteria in Table 5.

Table 5: Noise impact assessment criteria dB A

Receiver/Location	Shoulder period LAeq(15 minute)	Day LAeq(15 minute)	Evening/Night LAeq(15 minute)	Sleep disturbance LAI(1 minute)	
				Night	Shoulder period (5am - 7am)
Receiver 1 – 493 The Northern Road, Londonderry	44	35	35	45	48
Receiver 2 -509 The Northern Road, Londonderry	40	35	35	45	46
Receiver 3 - 1 Thomas Road, Londonderry	44	45	37	49	51
Receiver 4- 6-16 Timothy Road, Londonderry	38	39	35	45	41

Notes:

- Noise generated by the Project is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy.

## Hours of Work

17. The Proponent shall comply with the operating hours on the Mushroom Farm site in Table 6, unless otherwise agreed with the Director-General.

Table 6: Operating Hours

Activity	Day	Hours
Construction	Monday - Friday	7 am - 6 pm
	Saturday	8 am - 1 pm
	Sunday & Public Holidays	Nil
Operation	All days	Any time

## Noise Management Plan

18. The Proponent shall prepare and implement a Noise Management Plan for the Mushroom Farm site in consultation with OEH to the satisfaction of the Director-General. The Plan must be submitted to the Director-General for approval prior to commencement of operations, and include a noise monitoring protocol for evaluating compliance with the noise impact assessment criteria in this approval.

## BIODIVERSITY

### Vegetation Management Area

19. The Proponent shall establish a Vegetation Management Area at the Mushroom Fann site (as shown in Appendix 5).

### Vegetation Management Plan

20. The Proponent shall prepare and implement a Plan for the Vegetation Management Area to the satisfaction of the Director-General. This plan must be prepared in consultation with OEH by a suitably qualified and experienced expert/s whose appointment has been approved by the Director-General. The plan must:
- (a) be submitted to the Director-General for approval prior to the commencement of construction on the Mushroom Fann site;
  - (b) identify all vegetation that is present within the vegetation management area (as shown in Appendix 5);
  - (c) include details of the mechanism that will be used to ensure that the vegetation within the area is protected in perpetuity;
  - (d) describe the management measures that will be implemented to maintain and enhance the vegetation within the area over time, including fencing of *Dillwynia tenuifolia* and *Persoonia nutans*;
  - (e) include a detailed weed condition map as a baseline from which site rehabilitation/management can be measured.

*Note : all vegetation rehabilitation work is to be supervised by an appropriately qualified and experienced person with minimum qualifications of TAFE Certificate III in Bush Regeneration or Conservation and Land Management - Natural Area Restoration and 4 years bush regeneration experience;*

## HERITAGE

21. The Proponent shall prepare and implement a Heritage Management Plan for the Project to the satisfaction of the Director-General. This Plan must:
- (a) be prepared in consultation with OEH by a suitably qualified and experienced expert;
  - (b) be submitted to the Director-General for approval prior to commencement of construction;
  - (c) include programs/procedures for:
    - managing the discovery of previously unidentified heritage relics including halting of works in the vicinity, notification of OEH and the Department;
    - managing the discovery of human remains including the halting of works in the vicinity, notification of the NSW Police, the Department, the OEH and Aboriginal stakeholders and not recommencing any works in the area unless authorised to do so by the Department and/or the NSW Police (whichever is relevant); and
    - heritage inductions for construction personnel (including procedures for keeping records of inductions).

## VISUAL AMENITY

22. Prior to commencement of construction works, the Proponent shall prepare and implement a Landscape Management Plan for the Project to the satisfaction of the Director-General. This Plan must:
- (a) be prepared in consultation with Penrith City Council
  - (b) Submitted to the Director-General prior to commencement of construction works;
  - (c) where practicable, provide for the early planting of advanced plants along the northern, and southern boundaries to minimise the visual impacts of the Project; and
  - (d) use predominantly endemic species,
  - (e) where practicable, provide for the early planting of advanced plants along the northern, and southern boundaries to minimise the visual impacts of the Project; and
  - (f) provide for the maintenance of landscaping on site.
23. Prior to the commencement of construction on the Mushroom Fann site the Proponent shall offer and implement (if the offer is accepted) landscaping treatments to the residences in Table 7 below. These measures must be reasonable and feasible, and directed toward minimising the visibility of the operations from the residences on the land

*Table 7 – residences at which landscape treatment will be offered*

	Residences
Residence 1	493 The Northern Road, Londonderry
Residence 2	509 The Northern Road, Londonderry
Residence 3	1 Thomas Road, Londonderry



If within 3 months of receiving the offer, the Proponent and the owner can not agree on the landscaping treatment, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Director-General for resolution.

24. Prior to installing any boundary fencing on Mushroom Farm site, the Proponent shall submit detailed plans of this fencing to the Director-General for approval. These plans must be prepared in consultation with Penrith City Council. Following approval, the Proponent must ensure that the fencing is installed in accordance with the approved plans.

#### Lighting

25. The Proponent shall ensure that all external lighting associated with the Project on the Mushroom Farm site:
- (a) does not create a nuisance to surrounding properties or roadways; and
  - (b) complies with AS 4282/(NT) 1995- *Control of Obtrusive Effects of Outdoor Lighting*.

#### Signage

26. The Proponent shall not install any advertising signs on the Mushroom Farm site without the written approval of the Director-General.

#### ACCESS ROAD WORKS

27. Prior to the commencement the operation of stage 1, unless otherwise agreed by the Director-General, the Proponent shall design and construct the Mushroom Farm site access as a 'Type CHR' Rural Intersection, in accordance with the RTA's *Road Design Guide* and relevant Austroads guidelines, to the satisfaction of the RMS.

In finalising the design of the site access, the Proponent shall:

- (a) ensure that the swept path of the largest vehicle entering/exiting the site and manoeuvrability through the site is in accordance with the relevant Australian Standard and to Penrith City Council's satisfaction; and
- (b) sign a *Works Authorisation Deed* with the RMS.

#### TRANSPORT

##### Car Parking

28. The Proponent engage a suitably qualified and experienced expert to prepare a car parking study to re-evaluate parking requirements for stages 2 to 5 of the Project on the Mushroom Farm site. The study shall:
- (a) be submitted to the satisfaction of the Director-General prior to commencement of construction works for stage; and
  - (b) provide recommendations as to whether the car parking is sufficient.
29. The Proponent shall ensure that:
- (a) car parking is constructed in accordance with the relevant requirements of the latest version of AS 2890.1;
  - (b) vehicles associated with the Project do not park or queue on the public road network at any time; and
  - (c) all vehicles enter and leave the site in a forward direction; and
-

## SCHEDULE 5 ENVIRONMENTAL MANAGEMENT and REPORTING

### ENVIRONMENTAL MANAGEMENT

#### Environmental Management Strategy

1. The Proponent shall prepare and implement an Environmental Management Strategy for the Project to the satisfaction of the Director-General. The Strategy must:
  - a) be submitted to the Director-General for approval prior to the commencement of operation;
  - b) provide the strategic framework for environmental management of the Project;
  - c) identify the statutory approvals that apply to the Project;
  - d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the Project;
  - e) describe the procedures that would be implemented to:
    - keep the local community and relevant agencies informed about the operation and environmental performance of the Project;
    - receive, handle, respond to, and record complaints;
    - resolve any disputes that may arise during the course of the Project;
    - respond to any non-compliance; and
    - respond to emergencies;
  - f) include:
    - copies of the various strategies, plans and programs that are required under the conditions of this approval once they have been approved; and
    - a clear plan depicting all the monitoring currently being carried out within the Project area.

#### Management Plan Requirements

2. The Proponent shall ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines, and include:
  - a) detailed baseline data;
  - b) a description of:
    - the relevant statutory requirements (including any relevant approval, licence or lease conditions);
    - any relevant limits or performance measures/criteria; and
    - the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the Project or any management measures;
  - c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;
  - d) a program to monitor and report on the:
    - impacts and environmental performance of the Project;
    - effectiveness of any management measures (see c above);
  - e) a contingency plan to manage any unpredicted impacts and their consequences;
  - f) a program to investigate and implement ways to improve the environmental performance of the Project over time;
  - g) a protocol for managing and reporting any:
    - incidents;
    - complaints;
    - non-compliances with statutory requirements; and
    - exceedances of the relevant limits and/or performance measures / criteria; and
  - h) a protocol for periodic review of the plan.

#### Review

3. One year after the commencement of operations, and every three years thereafter, the Proponent shall review the environmental performance of the Project to the satisfaction of the Director-General. This review must:
  - a) describe the operations that were carried out in the past year;
  - b) analyse the monitoring results and complaints records of the Project over the past year, which includes a comparison of these results against the
    - relevant statutory requirements, limits or performance measures/criteria;
    - monitoring results of previous years; and
    - relevant predictions in the EA;
  - c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;
  - d) identify any trends in the monitoring data over the life of the Project; and
  - e) describe what measure will be implemented over the next year to improve the environmental performance of the Project.

<b>Issue</b>	<b>Assessment</b>	<b>Recommendation</b>
		emissions.
<b>Hazards</b>	<ul style="list-style-type: none"> <li>• The Project is located on bushfire prone land; and</li> <li>• Proposed management measures, including a Bushfire Emergency Plan, a 10m wide defendable space to the west, north and south of each building, a 24m asset protection zone to the north, east and western aspects of the buildings, as well as ember protection to the spent substrate store in the form of drencher sprays, would reduce risk from bushfire to acceptable levels.</li> </ul>	<ul style="list-style-type: none"> <li>• Recommended conditions require the Proponent to comply with the EA and <i>Planning for Bushfire Protection 2006</i>.</li> </ul>

The Department has assessed the Project, in accordance with the requirements of Clause 88 of the *Environmental Planning and Assessment Regulation 2000*, and considers that all potential impacts of the Project can be suitably managed to ensure an acceptable level of environmental performance.



## Revision of Plans & Programs

4. Within 3 months of the submission of an:
  - a) incident report under condition 6 of schedule 6; and
  - b) three yearly review under condition 4 of schedule 6,the Proponent shall review, and if necessary revise the plans and programs required under this approval to the satisfaction of the Director-General.

*Note: This is to ensure the plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the Project.*

## REPORTING

### Incident

5. The Proponent shall notify the Director-General and any other relevant agencies of any incident associated with the Project as soon as practicable after the Proponent becomes aware of the incident. Within 7 days of the date of the incident, the Proponent shall provide the Director-General and any relevant agencies with a detailed report on the incident.
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**APPENDIX 1**  
**PROPONENTS STATEMENT OF**  
**COMMITMENTS**

## ATTACHMENT 5 REVISED STATEMENT OF COMMITMENTS

### 1. Mushroom Farm - Construction

Outcome	Commitment		Timing
Environmental management	1.1	Prepare and subsequently implement an environmental management plan for construction, consistent with this environmental assessment and conditions of approval.	Prior to issue of construction certificate
	1.2	Identify and clearly mark vegetation to be retained.	Prior to construction
	1.3	Instruct all construction personnel of the requirements for environmental management on the site.	Prior to and during construction
Minimise soil erosion and sediment deposition	1.4	Implement erosion and sediment controls consistent with the erosion and sediment control plan and keep in place with adequate maintenance until work is complete or they are no longer required.	Prior to commencement of earthworks and thereafter as long as necessary
	1.5	Progressively rehabilitate areas disturbed during construction with grass or landscaping as designed	During construction
Control nuisance dust	1.6	Implement dust mitigation measures as follows: <ul style="list-style-type: none"> <li>• restrict vehicles to a defined route within the site;</li> <li>• limit vehicle speeds on unsealed surfaces;</li> <li>• maintain haul routes for fill trucks in a damp state;</li> <li>• apply temporary stabilisation to any exposed surface that is unlikely to be further disturbed for a period of one month or longer; and</li> <li>• rehabilitate finished surfaces as soon as possible to limit wind-generated dust.</li> </ul>	During construction
Minimise construction noise	1.7	Implement construction noise mitigation measures as follows. <ul style="list-style-type: none"> <li>• Construct the northern acoustic mound as early as practicable in the construction program;</li> <li>• adopt construction practices recommended by DECCW for best management and best available technology economically achievable;</li> <li>• select construction plant and equipment having regard to controlling noise emissions, including reversing alarm noise;</li> <li>• reduce operating speeds of equipment where practical and switch off idle plant when not in active use;</li> <li>• arrange vehicular access to work areas to allow for forward vehicle travel, minimising reversing or manoeuvring wherever possible;</li> <li>• provide site induction and personnel/contractor training in correct use of plant and</li> </ul>	During construction

Outcome		Commitment	Timing
		<p>equipment to minimise noise;</p> <ul style="list-style-type: none"> <li>• develop and implement a program to inspect and maintain mobile plant to ensure noise performance criteria are met;</li> <li>• comply with the standard construction hours of <b>working</b>;</li> <li>• establish a noise complaints procedure with contact phone number and logging and response protocols; and</li> <li>• review the use of mobile plant reversing alarms including altering work practices and/ or replacing with less intrusive devices where practicable.</li> </ul>	
Manage construction traffic	1.8	Prepare in consultation with the RTA and implement a traffic management plan for construction, including signs warning traffic on The Northern Road of the heavy vehicle entry.	Prior to commencement of construction <b>work</b> .
	1.9	Construct the intersection of the site access road and The Northern Road to Type AU in accordance with the RTA <i>Road Design Guide</i>	Prior to issue of occupation certificate
Minimise visual impact	1.10	<p>Implement the following measures to reduce visual impact:</p> <ul style="list-style-type: none"> <li>• select external building finishes and colours to reduce glare and minimise visual obtrusiveness.</li> <li>• construct and landscape the mound along The Northern Road frontage and the northern site boundary as soon as possible after site activities commence;</li> <li>• plant a mixture of semi-advanced trees, shrubs and groundcover on the mound to achieve early coverage and height enhancement;</li> <li>• maintain and nurture the landscaping on the mound with appropriate mulching, frequent watering at first and frequent inspections to correct any wind or animal damage and to replace failed plantings;</li> <li>• plant additional trees in the south eastern corner of the site to further restrict diagonal views from northbound vehicles on The Northern Road;</li> <li>• plant additional trees in the southern section of the site to further restrict views from the adjoining residence to the south towards the development area;</li> <li>• during each stage of the development, when the frame of the main building or building extension has been erected, undertake a visual assessment from The Northern Road and with the agreement of owners, from adjoining properties. Where it is practicable to reduce visual impact:</li> </ul>	During construction and prior to issue of occupation certificate



Outcome	Commitment		Timing
		<ul style="list-style-type: none"> <li>plant additional screening vegetation in strategic locations on the property, such as in the southern area, to further reduce visibility from The Northern Road and the residence to the south;</li> <li>offer to residents on properties to the north to plant screening vegetation on their properties at locations agreed with them and if the offer is accepted, undertake the plantings for the residents to maintain;</li> <li>during construction, minimise the area of physical disturbance to the land at any one time and revegetate any disturbed areas visible from beyond the site that are not required as hardstand.</li> </ul>	
Protect cultural heritage	1.11	<p>Implement the following protocols as required:</p> <ul style="list-style-type: none"> <li>should any Aboriginal object be identified during construction, work should cease and notification given to the NSW OEH, a qualified archaeologist and Aboriginal representatives of the Deerubbin LALC. The archaeologist is to develop an appropriate mitigation or management strategy in consultation with OEH and DLALC and the EMP is to be amended accordingly;</li> <li>should skeletal remains be discovered, cease work at the location and report the find to the police. If the remains prove to be of Aboriginal origin advise DECCW, a qualified archaeologist and Aboriginal representatives of the Deerubbin LALC.</li> </ul>	During construction
Protect flora and fauna	1.12	<p>Implement flora and fauna protection measures as follows:</p> <ul style="list-style-type: none"> <li>avoid removing remnant trees wherever possible;</li> <li>install temporary fencing to protect woodland remnants when undertaking construction work in the immediate vicinity that does not require disturbance of the woodland;</li> <li>collect stormwater from the development in dams rather than directing it into woodland areas;</li> <li>plant local native species from the Castlereagh Woodlands along The Northern Road frontage and elsewhere for landscaping to enhance the remnant of this community. A suitable species list has been provided.</li> <li>manage the rural property during construction to maintain pasture and suppress weeds;</li> <li>separately fence the groupings of threatened species located in the asset protection zone west of the spent substrate store and avoid disturbance to the fenced areas.</li> </ul>	Prior to and during construction

## 2. Mushroom Farm - Operation

Outcome		Commitment	Timing
Environmental management	2.1	Prepare and subsequently implement an environmental management plan for operation consistent with this EA and conditions of approval.	Prior to issue of occupation certificate for each stage
Minimise operational noise	2.2	Operate the farm in a manner to maintain noise levels at nearby sensitive receptors within DECCW criteria.	During operation
	2.3	<p>Implement operational noise mitigation measures as follows:</p> <ul style="list-style-type: none"> <li>• undertake detailed design of buildings and structures to meet specified noise attenuation criteria as indicated in Table 10 of the mushroom farm noise assessment report;</li> <li>• select mechanical plant and equipment to meet sound power levels and/ or acoustic performance indicated in Table 10 of the noise assessment report (see below);</li> <li>• construct a noise mound along the northern boundary with finished level at least 2.5 metres above the floor level of the main building;</li> <li>• construct a noise mound along the eastern boundary with finished level at least 2.5 metres above existing ground level;</li> <li>• modify moving floor substrate trucks to incorporate acoustic enclosures for trailer motors and residential grade mufflers to achieve a minimum 3 dB(A) noise reduction and result in a sound power level in the order of Lw100 dB(A);</li> <li>• maintain truck airbrake release discharge noise levels to Lw115 dB(A) or less;</li> <li>• require trucks to operate on the access roads at speeds not exceeding 20 kph;</li> <li>• fit "quacker" reversing alarms to mobile plant where practicable; and</li> <li>• incorporate the noise management protocols within the environmental management plan for the site.</li> </ul>	During operation

Outcome		Commitment	Timing
Avoid offensive odour	2.4	Implement odour controls as follows: <ul style="list-style-type: none"> <li>• keep spent substrate retained on the site for refining under cover to prevent further wetting during rainfall;</li> <li>• turn and blend spent substrate from time to time to assist aeration;</li> <li>• remove collected solids from pit filters each week using a telescopic loader; and</li> <li>• manage and maintain the wash down water recycling system to prevent odour generation.</li> <li>• include in the environmental management plan a procedure for recording and responding to any complaints that may be received pertaining to operation of the facility</li> </ul>	During operation
Effectively manage operational water	2.5	Manage the operation to prevent discharge of process water from the site and to maximise use of collected and recycled water.	During operation
	2.6	Adequately maintain the sewage treatment plant to ensure satisfactory operation.	During operation
	2.7	Adequately maintain the wash down water recycling system to ensure satisfactory operation.	During operation
	2.8	Maintain 100% ground cover over parts of the site not subject to building work or operations.	During operation
	2.9	Maintain perimeter mounds so that rainfall runoff will continue to flow to natural drainage without ponding.	During operation
Protect flora and fauna	3.0	Continue to suppress weeds on the development site and protect remaining trees.	During operation
Bushfire Protection	3.1	Implement the following measures to minimise bushfire risk: <ul style="list-style-type: none"> <li>• establish and maintain a defendable space of 10 metres to the west, north and south of each building. The defendable space is to be a clear area with unimpeded access for fire fighting;</li> <li>• on sides of the spent substrate store where there is no concrete apron, include a three-metre hardstand area as part of the defendable space;</li> <li>• provide a static water supply (water tank, not dependent upon electricity for pumping) to supplement the reticulated supply;</li> <li>• use non-combustible external cladding to the main building;</li> <li>• provide ember protection to the spent substrate store in the form of drencher sprays to keep the contents damp during a bushfire event;</li> <li>• design the structures to have concrete floors, steel roof cladding non-combustible flashing</li> </ul>	During operation

Outcome		Commitment	Timing
		<p>at roof intersections with no gaps and non-combustible gutters and downpipes;</p> <ul style="list-style-type: none"> <li>• fit steel mesh screens to all windows and personnel doors on the northern and western elevations;</li> <li>• maintain an asset protection zone for 24 metres to the north, east and western aspects of the buildings with shrub layer managed so as not to exceed five tonnes per hectare. Existing trees do not require removal, but branches should not come within five metres;</li> <li>• provide a reticulated water supply compliant with relevant standards capable of providing emergency supply for fire fighting;</li> <li>• provide a rubber fire hose of minimum diameter 18 millimetres capable of reaching all elevations of all buildings;</li> <li>• maintain vehicle access to the site in compliance with the standard and fire brigade access to the northern and western asset protection zones;</li> <li>• develop and adopt an emergency bushfire plan.</li> </ul>	
Monitor performance	3.2	Continue to monitor operations as specified in the environment management plan	During operation

### 3. Substrate Plant - Construction

Outcome		Commitment	Timing
Environmental management	3.1	Prepare and subsequently implement an environmental management plan for construction, or modify the existing EMP, consistent with this EA and conditions of approval.	Prior to issue of construction certificate
	3.2	Instruct all construction personnel of the requirements for environmental management on the site.	Prior to and during construction
Minimise soil erosion and sediment deposition	3.3	Implement erosion and sediment controls consistent with the erosion and sediment control plan and keep in place with -adequate maintenance until work is complete or they are no longer required.	Prior to commencement of earthworks and thereafter as long as necessary
	3.4	Progressively rehabilitate areas disturbed during construction with landscaping or hardstand as designed	During construction

Outcome		Commitment	Timing
Control nuisance dust	3.5	<p>Implement the following dust mitigation measures:</p> <ul style="list-style-type: none"> <li>• limit vehicle speeds on unsealed surfaces;</li> <li>• maintain unsealed haul routes for fill trucks in a damp state;and</li> <li>• rehabilitate finished surfaces as soon as possible either with landscaping or hardstand, according to intended use.</li> </ul>	During construction
Minimise construction noise	3.6	<p>Implement construction noise mitigation measures as follows:</p> <ul style="list-style-type: none"> <li>• avoid operating the bulldozer and compactor simultaneously during filling operations;</li> <li>• when concrete pours are taking place, locate concrete trucks and pumps in a manner that will maximise screening to residential properties to the south and west;</li> <li>• construct the southern boundary wall adjacent to the eastern bale wetting area as early as practicable in the construction program;</li> <li>• adopt construction practices recommended by DECCW for best management and best available technology economically achievable;</li> <li>• select construction plant and equipment having regard to controlling noise emissions, including reversing alarm noise;</li> <li>• where practicable schedule the noisiest activities to occur during parts of the day when ambient noise levels are higher;</li> <li>• undertake audits at receiver locations to monitor noise from site construction;</li> <li>• establish a noise complaints procedure with contact phone number and logging and response protocols;</li> <li>• undertake construction activities in accordance with AS 2436:1981, <i>Guide to Noise Control on Construction, Maintenance and Demolition Sites</i>, with all equipment demonstrating compliance with the noise levels recommended in the standard.</li> </ul>	During construction
Manage construction traffic	3.7	Maintain the intersection of the site access road and Mulgrave Road in a safe condition suitable for heavy construction traffic including vehicles delivering fill.	During construction
Minimise visual impact	3.8	<p>Implement measures to reduce visual impact of the development as follows:</p> <ul style="list-style-type: none"> <li>• commence screen planting around the periphery of the extended platform area as early as possible during the project;</li> <li>• during construction, minimise the area of</li> </ul>	During construction

Outcome		Commitment	Timing
		<p>physical disturbance to the land at any one time and revegetate any disturbed areas visible from beyond the site that are not required as hardstand;</p> <ul style="list-style-type: none"> <li>mulch fill batters as soon as possible after completion and maintain them to achieve total vegetation cover;</li> <li>continue to maintain previous landscaping and screen planting on the site to maximise screening of the plant;</li> <li>incorporate building materials of the same colour and texture as used in the existing plant, which minimise glare and visual obtrusiveness.</li> </ul>	
Protect cultural heritage	3.9	<p>Implement the following protocols as required:</p> <ul style="list-style-type: none"> <li>should any Aboriginal object be identified during construction, work should cease and notification given to DECCW, a qualified archaeologist and Aboriginal representatives of the Deerubbin LALC. The archaeologist is to develop an appropriate mitigation or management strategy in consultation with OEH and DLALC and the EMP is to be amended accordingly;</li> <li>should skeletal remains be discovered, cease work at the location and report the find to the police. If the remains prove to be of Aboriginal origin advise DECCW, a qualified archaeologist and Aboriginal representatives of the Deerubbin LALC.</li> </ul>	During construction
Protect flora and fauna	3.10	Suppress weeds on the construction site and protect existing landscape planting that is to be retained.	During construction

#### ***4. Substrate Plant - Operation***

Outcome		Commitment	Timing
Environmental management	4.1	Prepare and subsequently implement an environmental management plan for operation, or modify the existing EMP, consistent with this EA and conditions of approval.	Prior to issue of occupation certificate for each stage
Production limit	4.2	<p>Maintain average weekly production of Phase 1 substrate within upper limits as follows:</p> <ul style="list-style-type: none"> <li>Stage 1 1600 tonnes</li> <li>Stage 2 2400 tonnes</li> <li>Stage 3 3,200 tonnes</li> </ul>	During operation
Minimise operational	4.3	Operate the plant in a manner to maintain noise levels at nearby sensitive receptors within	During operation

Outcome		Commitment	Timing
noise		DECCW criteria.	
	4.4	<p>Implement the following noise mitigation measures:</p> <ul style="list-style-type: none"> <li>undertake detailed design of buildings and structures to meet requirements specified in section 7.4 of the substrate plant noise assessment report, as follows: <ul style="list-style-type: none"> <li>Building walls for the bale storage and pre-wet sheds shall consist of concrete to a height of 2 metres above FFL followed by galvanised steel frame and galvanised wall/ roof sheeting nominally 0.6 mm BMT and a minimum of Rw22;</li> <li>Internal walls and roof of tunnels within phase 2/3 building constructed of concrete blockwork and/ or hebe! panels/blocks;</li> <li>Building wall cladding (Phase 2/3 building) consisting of insulated colorbond sandwich panels consistent with existing Phase 2/3 building proving a nominal installed noise reduction in the order pf 23dB(A) (Rw28 or greater).</li> <li>Building roof cladding consisting of sheet metal (min 0.42 BMT) over fibreglassbuilding blanket and medium duty thermofoil or similar and insulated colorbond sandwich panel (ceiling) consistent with existing Phase 2/3 tunnel building providing a nominal installed noise reduction in the order of 28 dB(A) (Rw34 or greater).</li> <li>Final details of building designs subject to review prior to final specification</li> </ul> </li> <li>select mechanical plant and equipment to meet sound power levels and/ or acoustic performance in Table 10 of the acoustic assessment report for the substrate plant (see below);</li> <li>require trucks to operate on the accessroads at speeds not exceeding 20 kph;</li> <li>fit "quacker" reversing alarms to mobile plant where practicable;and</li> <li>incorporate noise management protocols within the environmental management plan for the site.</li> </ul>	During operation
Avoid offensive odour	4.5	Operate the plant in a manner to maintain odour emissions within the limit specified in the DECCW licence.	During operation
	4.6	<p>Continue to implement existing odour controls at the plant</p> <ul style="list-style-type: none"> <li>under-cover storage for raw materials to</li> </ul>	During operation

Outcome		Commitment	Timing
		<p>keep them dry;</p> <ul style="list-style-type: none"> <li>enclosed processing areas for all potentially odour-generating activities;</li> <li>air-under system in the pre-wet building and in all Phase 1 tunnels to improve aeration of composting material;</li> <li>automatic control system for fans to maintain optimum air supply and extraction;</li> <li>an enclosed vehicle passageway to enable indoor transfer of partly processed material from the pre-wet building to Phase 1 tunnels;</li> <li>enclosed conveyor transport for tunnel loading, dispatch loading and transfer to Phase 2/3 tunnels;</li> <li>a bioscrubber to remove odorous compounds from exhaust air prior to release to the atmosphere;</li> <li>a chimney to discharge exhaust air 40 metres above ground to aid dispersal; and</li> <li>a monitoring system to detect any faults or operational anomalies and immediately send an alarm to the Duty Manager at any time of day.</li> </ul>	
	4.7	<p>Implement the following additional odour control measures:</p> <ul style="list-style-type: none"> <li>add a second bioscrubber dedicated for the pre-wet processing area to reduce load on the existing bioscrubber and allow better control of negative pressure in the pre-wet building, reducing the likelihood of fugitive emissions;</li> <li>provide an enclosed conveyor from the pre-wet building to the Phase 1 tunnel building replacing the vehicle passageway to speed up the material transfer process and reduce the potential for fugitive emissions from this operation;</li> <li>extract air from the raw materials storage shed, reducing the potential for fugitive emissions from poultry manure.</li> </ul>	
Effectively manage operational water	4.8	Manage the operation to prevent discharge of process water from the site and to maximise use of collected and recycled water.	During operation
Improve runoff water quality	4.9	Implement and maintain the stormwater modifications recommended in the stormwater management plan, including orifice plates, reed bed and bio-basin.	During construction and operation
Minimise visual impact	4.10	Continue to manage the landscaped areas to ensure the vegetation screen remains effective.	During operation



<b>Outcome</b>		<b>Commitment</b>	<b>Timing</b>
Protect flora and fauna	4.11	Continue to suppress weeds on the development site and protect remaining trees.	During construction
Monitor and report performance	4.12	Continue to monitor- operations and report results as specified in the environment management plan	During operation

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Table 10 of the mushroom farm noise assessment report

Table 10: Plant/Equipment Sound Power Levels  $L_{w,eq}$  re:  $10^{-12}$  Watts

Plant Description	Sound Power Level								
	dB(A)	63	125	250	500	1k	2k	4k	8k
Truck (moving)	101	98	102	101	97	94	94	91	80
Truck (idle)	91	88	92	91	87	84	84	81	70
Refrigerated Truck (SB310 refig. unit)	93	90	94	93	89	86	86	83	72
JCB Telescopic Handler	105	109	99	99	100	101	99	95	93
Nufab Compost Turner	93	93	94	93	90	88	84	80	75
Head Filling Activities (truck engine, filling machine & peat loading)	103	113	107	95	100	94	96	92	85
Cooling Towers x2 (each) (AquaCool MSS 187LS3)	99	91	87	88	90	95	93	87	84
Compressors x 5 (total) (PowerPax TT400)	93	82	82	85	85	89	86	79	83
Steam Generator (ST3021)	99	89	89	94	94	96	93	87	82
Humidification Boiler {Saacke SR1000/PAG10A}	90	104	101	94	85	79	76	72	64
Plant Room {space averaged} 1	95	84	84	87	87	91	88	81	85
North Air Intake 2	85	74	74	77	77	81	78	71	75
Roof Air Discharge 2	85	74	74	77	77	81	78	71	75
AHU Ridge Vents 3	63	66	62	60	61	59	51	46	40

Note: 1 All fixed plant in purpose designed plant room resulting in space averaged SPL of 95dB(A)  
2 Noise attenuation incorporated into plant room to result in source noise level of  $L_{w85}$ dB(A) for intake /discharge  
3 AHU would be installed wholly within roof space. Source noise level based on  $L_{w57}$  at discharge for AHU connected via ducted vents comprising a total of 74 vents, adjusted for 18 ridge top source points. AHU are ducted and could incorporate insulated ducting if required prior to discharge to meet specified limits.

Table 10 of the Substrate plant Noise assessment report

Table 10: External Plant/Equipment Sound Power Levels L<sub>kq</sub> re:10-12 Watts

Plant Description	Sound Power Level								
	dB(A)	63	125	250	500	1k	2k	4k	8k
Super Chill Condensers EWK-D680 (x6)	83	79	81	81	78	75	73	76	72
Compressor Room (external door) x2	80	79	75	77	76	76	70	69	63
Bioscrubber 2 Fans – each (x2)	107	-	106	104	107	100	98	92	-
Conveyor Drive –New Phase 3 (E-W)	80	72	74	72	77	76	72	63	55
Conveyor Belt –New Phase 3 (E-W)	70*	75	75	70	70	63	59	52	43
Conveyor Drive –New Phase 3 (N-S)	80	72	74	72	77	76	72	63	55
Conveyor Belt –New Phase 3 (N-S)	70*	75	75	70	70	63	59	52	43
Conveyor Drive –Pre Wet	80	72	74	72	77	76	72	63	55
Conveyor Belt –Pre Wet	70*	75	75	70	70	63	59	52	43
FEL - Volvo L90E	102	115	104	100	98	99	92	92	87
FEL - Volvo L150E	105	120	104	103	102	99	97	95	91
FEL - Komatsu WA320	104	114	102	100	102	99	96	93	86
Traymaster Blender	110	109	110	109	108	104	102	99	96
Pre-Wet Shed (average inshed)	85	84	85	84	83	79	77	74	71
Truck (moving)	101	98	102	101	97	94	94	91	80
Loading Activities (Phase 2/3 average inloading hall)	86	81	84	85	85	81	78	73	65
Loading Activities (Phase 2/3 external facade)	63	66	68	63	61	60	49	43	37

• sound power level per metre of conveyor



APPENDIX 2  
SUBSTRATE PLANT SITE LAYOUT and STAGES

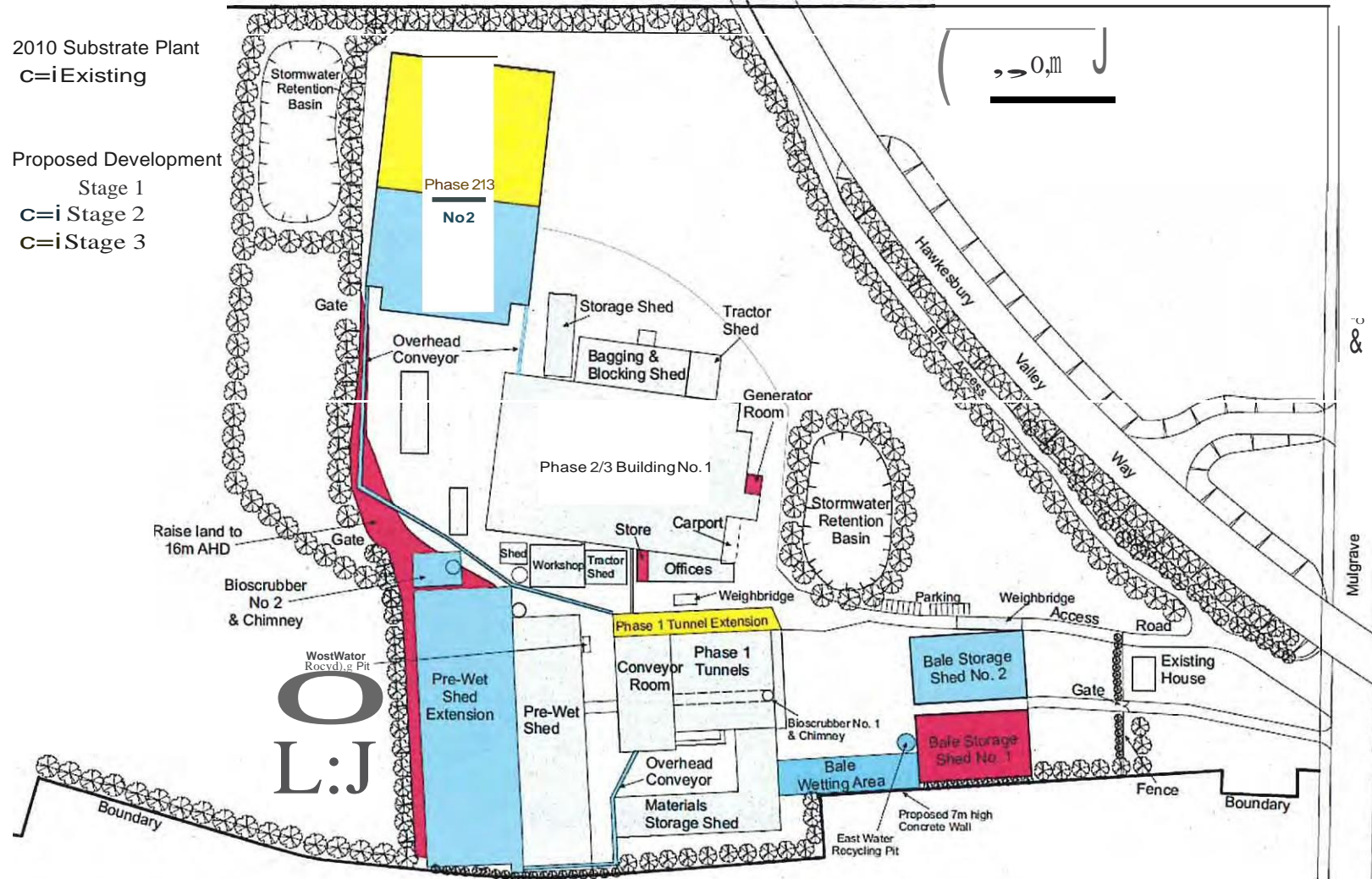
2010 Substrate Plant  
C=i Existing

Proposed Development

Stage 1

C=i Stage 2

C=i Stage 3

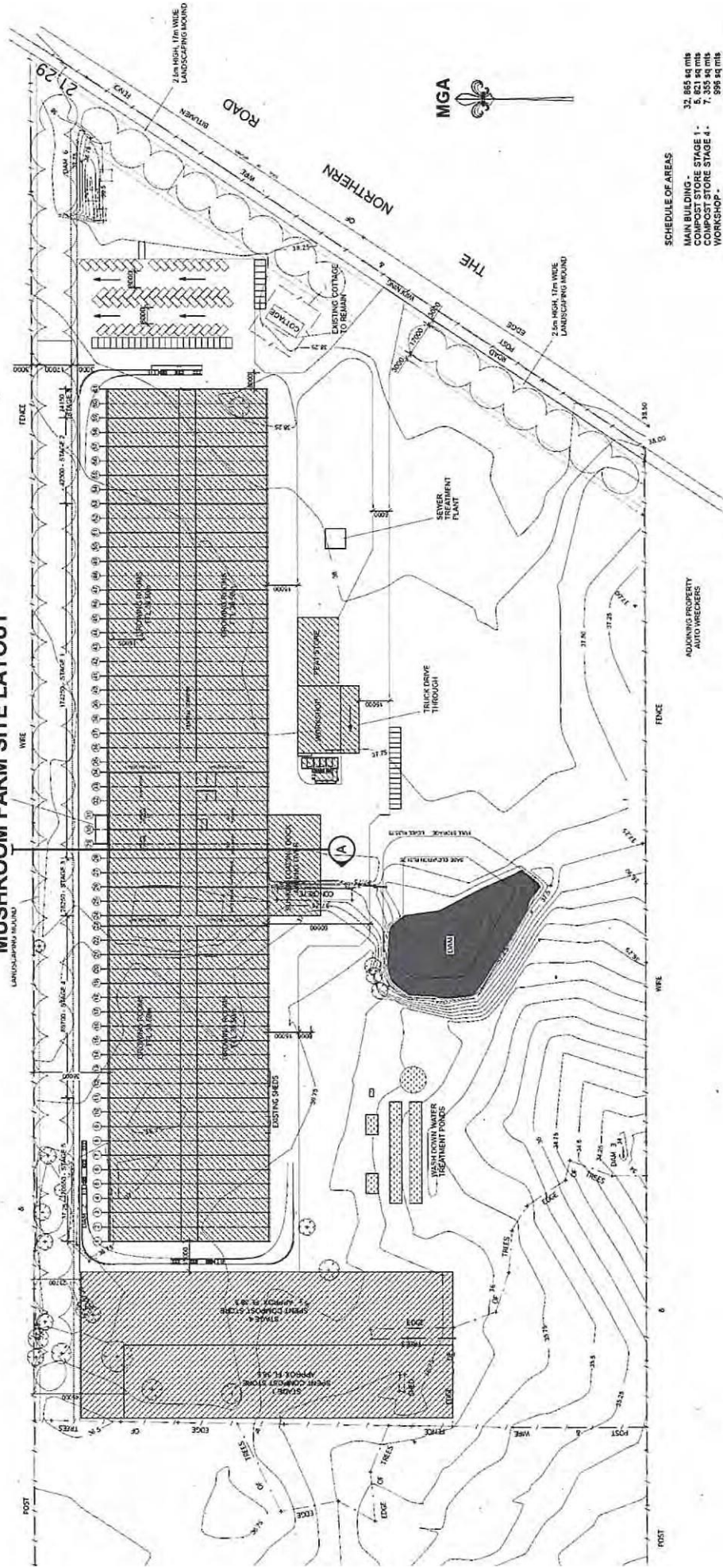


Indicative Substrate Plant Site Layout

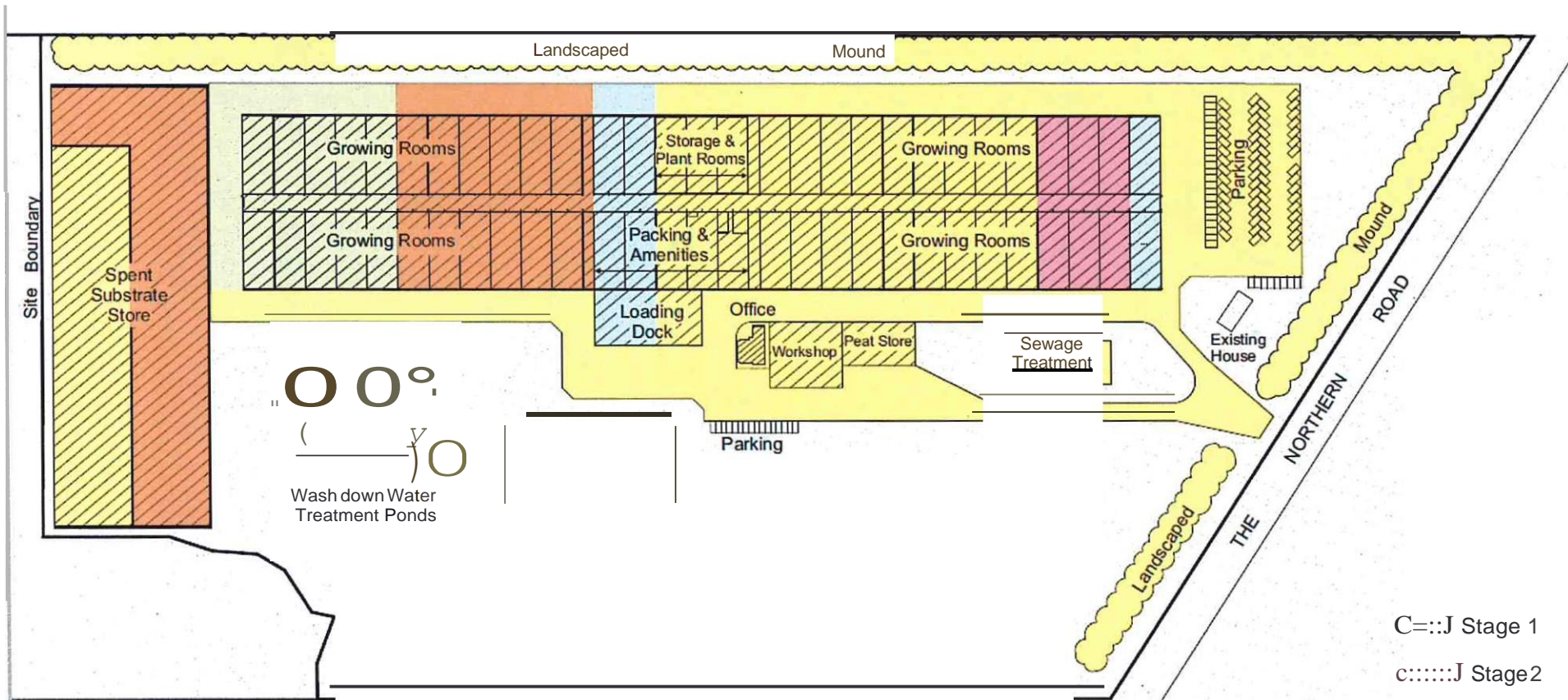
Blacktown to Richmond Railway Line



# APPENDIX 3 MUSHROOM FARM SITE LAYOUT



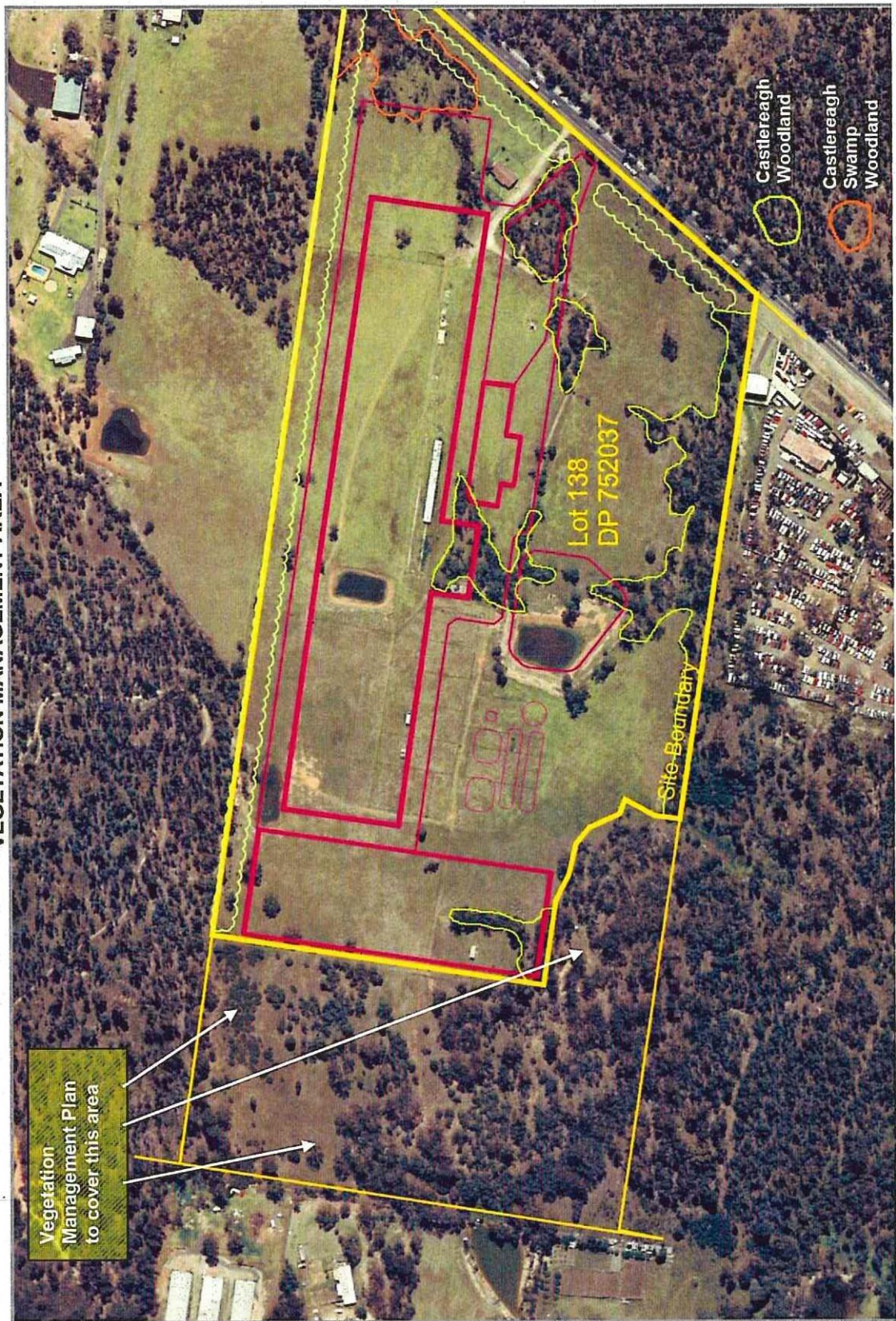
# APPENDIX 4 STAGES MUSHROOM FARM SITE



- C=::J Stage 1
- c:::J Stage 2
- C=::J Stage 3
- C=::J Stage 4
- c:::J Stage 5



APPENDIX 5  
VEGETATION MANAGEMENT AREA





## Appendix B

# ENVIRONMENT PROTECTION LICENCE\*

(\*Current at time of printing)



# Environment Protection Licence



Environment,  
Climate Change  
& Water

Licence - 6229

Licence Details	
Number:	6229
Anniversary Date:	20-May

Licensee	
ELF FARM SUPPLIES PTY LTD	
PO BOX 615	
WINDSOR NSW 2756	

Licence Type	
Premises	

Premises	
ELF FARM SUPPLIES PTY LTD	
108 MULGRAVE ROAD	
MULGRAVE NSW 2756	

Scheduled Activity	
Composting	
Waste storage	

<u>Fee Based Activity</u>	<u>Scale</u>
Composting	> 5000 - 50000 T received
Other types of waste	0 - All

Region	
Waste Operations (Sydney)	
59-61 Goulburn Street	
SYDNEY NSW 2000	
Phone: 02 9995 5000	
Fax: 02 9995 5999	
PO Box A290 SYDNEY SOUTH	
NSW 1232	

# Environment Protection Licence

Licence - 6229



Environment,  
Climate Change  
& Water

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## Information about this licence

### Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

### Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act); and
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

### Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

### Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

### Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

### Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

The EPA publication "A Guide to Licensing" contains information about how to calculate your licence fees.

# Environment Protection Licence

Licence - 6229



Environment,  
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The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

## Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

## Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

## This licence is issued to:

<b>ELF FARM SUPPLIES PTY LTD</b> <b>PO BOX 615</b> <b>WINDSOR NSW 2756</b>
----------------------------------------------------------------------------------

subject to the conditions which follow.

## 1 Administrative conditions

### A1 What the licence authorises and regulates

A1.1 Not applicable.

A1.2 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity
Composting
Waste storage

Fee Based Activity	Scale
Composting	> 5000 - 50000 T received
Other types of waste	0 - All

A1.3 Not applicable.



**A2 Premises to which this licence applies**

A2.1 The licence applies to the following premises:

<b>Premises Details</b>
<b>ELF FARM SUPPLIES PTY LTD</b>
<b>108 MULGRAVE ROAD</b>
<b>MULGRAVE</b>
<b>NSW</b>
<b>2756</b>
<b>LOT 12 DP736138; LOT 4 DP610341</b>

**A3 Other activities**

A3.1 Not applicable.

**A4 Information supplied to the EPA**

A4.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:

- (a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
- (b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

**2 Discharges to air and water and applications to land****P1 Location of monitoring/discharge points and areas**

P1.1 The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the air from the point.

*Air*

EPA Identification no.	Type of Monitoring Point	Type of Discharge Point	Description of Location
1	Discharge to air Air emissions monitoring	Discharge to air Air emissions monitoring	Bioscrubber chimney labelled as "Chimney" on "Figure 5.2 - Plant Layout" and "Figure 5.5 - Stage 1 - Phase 1 Bioscrubber Detail" contained in the "Mulgrave Mushroom Substrate Plant Environmental Management Plan" dated August 2002.

P1.2 Not applicable.

P1.3 Not applicable.

### 3 Limit conditions

#### L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

#### L2 Load limits

L2.1 Not applicable.

L2.2 Not applicable.

#### L3 Concentration limits

L3.1 For each monitoring/discharge point or utilisation area specified in the table\ below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.

L3.2 Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.

L3.3 To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table\.

# Environment Protection Licence

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## Air

### POINT 1

Pollutant	Units of measure	100 percentile concentration limit
Odour	odour units per second	55400

L3.4 For each monitoring/discharge point specified in the table(s) in L3.1 above (by a point number), the reference conditions and averaging period of a pollutant discharged at that point must be reported at the reference conditions and averaging period specified for that pollutant in the following table.

Pollutant	Reference Conditions	Duration	Averaging Period
Odour	dry, 293 K, 101.3 kPa	1 hour	Rolling annual

## L4 Volume and mass limits

L4.1 Not applicable.

## L5 Waste

L5.1 The licensee must not cause, permit or allow any waste to be received at the premises, except the wastes expressly referred to in the column titled "Waste" and meeting the definition, if any, in the column titled "Description" in the table below.

Any waste received at the premises must only be used for the activities referred to in relation to that waste in the column titled "Activity" in the table below.

Any waste received at the premises is subject to those limits or conditions, if any, referred to in relation to that waste contained in the column titled "Other Limits" in the table below.

Condition L5.1 does not limit any other conditions in this licence.

Code	Waste	Description	Activity	Other Limits
NA	Natural organic fibrous materials	As defined in Schedule 1 of the POEO Act, in force from time to time	Composting Waste storage	NA
NA	Horse stable bedding			
NA	Chicken manure			
NA	Feather meal			
NA	Cotton seed meal			
NA	General or Specific exempted waste	Waste that meets all the conditions of a resource recovery exemption under Clause 51A of the <i>Protection of the Environment Operations (Waste) Regulation 2005</i>	As specified in each particular resource recovery exemption.	NA
NA		Any waste received on site that is below licensing thresholds in Schedule 1 of the POEO Act, as in force from time to time		NA

**L6 Noise Limits**

L6.1 Noise generated at the premises must not exceed the noise limits presented in the table below:

**Noise Limits (dB(A))**

Location	Day	Evening	Night
	L <sub>Aeq</sub> (15 minute)	L <sub>Aeq</sub> (15 minute)	L <sub>Aeq</sub> (15 minute)
Most effected residence	44	44	39

L6.2 For the purpose of Condition 6.1:

- Day is defined as the period from 7am to 6pm Monday to Saturday and 8am to 6pm Sundays and Public Holidays,
- Evening is defined as the period from 6pm to 10pm
- Night is defined as the period from 10pm to 7am Monday to Saturday and 10pm to 8am Sundays and Public Holidays

L6.3 Noise from the premises is to be measured at the most affected point on or within the residential boundary or at the most affected point within 30m of the dwelling (rural situations) where the dwelling is more than 30m from boundary to determine compliance with the L<sub>Aeq</sub>(15 minute) noise limits in condition L6.1.

Where it can be demonstrated that direct measurement of noise from the premises is impractical, the EPA may accept alternative means of determining compliance. See Chapter 11 of the NSW Industrial Noise Policy.

The modification factors presented in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise level where applicable.

L6.4 The noise emission limits identified in condition L6.1 apply under meteorological conditions of:

- wind speeds up to 3 m/s at 10 metres above ground level; and/or
- temperature inversion conditions of up to 3 °C/100m.

**L7 Excess compost limit**

L7.1 The licensee must ensure that the amount of excess compost that is stored at the premises does not exceed 150 tonnes at any one time.

## 4 Operating conditions

### O1 Activities must be carried out in a competent manner

#### O1.1 Licensed activities must be carried out in a competent manner.

This includes:

- (a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
- (b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

#### O1.2 There must be no incineration or open burning of any material(s) on the premises, except as specifically authorised by the EPA.

### O2 Maintenance of plant and equipment

#### O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:

- (a) must be maintained in a proper and efficient condition; and
- (b) must be operated in a proper and efficient manner.

### O3 Potentially offensive odour

#### O3.1 No condition of this licence identifies a potentially offensive odour for the purposes of section 129 of the Protection of the Environment Operations Act 1997.

**Note:** Section 129 of the Protection of the Environment Operations Act 1997, provides that the licensee must not cause or permit the emission of any offensive odour from the premises but provides a defence if the emission is identified in the relevant environment protection licence as a potentially offensive odour and the odour was emitted in accordance with the conditions of a licence directed at minimising odour.

### O4 Dust

#### O4.1 The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.

### O5 Pre-wet process

#### O5.1 The licensee must ensure that the area in which the pre-wet process is conducted is fully enclosed within a building which is under negative pressure and ventilated through the bio-scrubber.

## 5 Monitoring and recording conditions

### M1 Monitoring records

- M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.
- M1.2 All records required to be kept by this licence must be:
- in a legible form, or in a form that can readily be reduced to a legible form;
  - kept for at least 4 years after the monitoring or event to which they relate took place; and
  - produced in a legible form to any authorised officer of the EPA who asks to see them.
- M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:
- the date(s) on which the sample was taken;
  - the time(s) at which the sample was collected;
  - the point at which the sample was taken; and
  - the name of the person who collected the sample.

### M2 Requirement to monitor concentration of pollutants discharged

- M2.1 For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:

#### *Air*

#### POINT 1

Pollutant	Units of measure	Frequency	Sampling Method
Odour	odour units per second	Special Frequency 1	OM-7
Temperature	Kelvin	Special Frequency 1	TM-2
Velocity	metres per second	Special Frequency 1	TM-2
Volumetric flowrate	cubic metres per second	Special Frequency 1	TM-2

For the purposes of the table above 'Special Frequency 1' means 'six monthly'.

### M3 Testing methods - concentration limits

- M3.1 Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with:
- any methodology which is required by or under the Act to be used for the testing of the

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concentration of the pollutant; or

- (b) if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or
- (c) if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.

Note: The Protection of the Environment Operations (Clean Air) Regulation 2002 requires testing for certain purposes to be conducted in accordance with test methods contained in the publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".

M3.2 Not applicable.

## M4 Recording of pollution complaints

- M4.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.
- M4.2 The record must include details of the following:
  - (a) the date and time of the complaint;
  - (b) the method by which the complaint was made;
  - (c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
  - (d) the nature of the complaint;
  - (e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
  - (f) if no action was taken by the licensee, the reasons why no action was taken.
- M4.3 The record of a complaint must be kept for at least 4 years after the complaint was made.
- M4.4 The record must be produced to any authorised officer of the EPA who asks to see them.

## M5 Telephone complaints line

- M5.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.
- M5.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.
- M5.3 Conditions M5.1 and M5.2 do not apply until 3 months after:
  - (a) the date of the issue of this licence or

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- (b) if this licence is a replacement licence within the meaning of the Protection of the Environment Operations (Savings and Transitional) Regulation 1998, the date on which a copy of the licence was served on the licensee under clause 10 of that regulation.

## **M6 Requirement to monitor volume or mass**

M6.1 Not applicable.

## **M7 Monitoring of waste(s) received**

M7.1 The licensee must record the following information for each load of waste(s) received at the premises:

- (a) the registration number of the vehicle;
- (b) the time and date of receipt of the waste;
- (c) the source of the waste;
- (d) the type(s) of waste; and
- (e) the quantity of each type of waste (in tonnes).

# **6 Reporting conditions**

## **R1 Annual return documents**

### **What documents must an Annual Return contain?**

R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:

- (a) a Statement of Compliance; and
- (b) a Monitoring and Complaints Summary.

A copy of the form in which the Annual Return must be supplied to the EPA accompanies this licence. Before the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

### **Period covered by Annual Return**

R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

R1.3 Where this licence is transferred from the licensee to a new licensee:



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- (a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
- (b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

**Note:** An application to transfer a licence must be made in the approved form for this purpose.

- R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:
- (a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
  - (b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

## Deadline for Annual Return

R1.5 The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

## Notification where actual load can not be calculated

R1.6 Not applicable.

## Licensee must retain copy of Annual Return

R1.7 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

## Certifying of Statement of Compliance and signing of Monitoring and Complaints Summary

- R1.8 Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:
- (a) the licence holder; or
  - (b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

R1.9 A person who has been given written approval to certify a certificate of compliance under a licence issued under the Pollution Control Act 1970 is taken to be approved for the purpose of this condition until the date of first review of this licence.

## R2 Notification of environmental harm

**Note:** The licensee or its employees must notify the EPA of incidents causing or threatening material harm to the environment as soon as practicable after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.

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- R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

## R3 Written report

- R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:
- (a) where this licence applies to premises, an event has occurred at the premises; or
  - (b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence,
- and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.
- R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.
- R3.3 The request may require a report which includes any or all of the following information:
- (a) the cause, time and duration of the event;
  - (b) the type, volume and concentration of every pollutant discharged as a result of the event;
  - (c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;
  - (d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
  - (e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
  - (f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and
  - (g) any other relevant matters.
- R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

## R4 Notification of intention to irrigate

- R4.1 The licensee must notify the EPA in writing at least 24 hours prior to irrigating waste water from the dam on the premises.

# General conditions

## G1 Copy of licence kept at the premises

- G1.1 A copy of this licence must be kept at the premises to which the licence applies.
- G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.
- G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

## Pollution studies and reduction programs

- U1 Not applicable.

## Special conditions

### E1 Odour Complaints/Feedback Management System

- E1.1 The licensee must maintain and operate the Odour Complaints/Feedback Management System as set out in the document submitted by Terry Perram and Partners dated 11 July 2002 (HOF 22953). The licensee must adhere to the complaints/feedback management system which is to contain the procedures outlined below.

- E1.2 An advertised telephone number for complaints/feedback:

A 24-hour telephone number is to be set aside for complaints and/or feedback. The number must be made known to the public by

- 1) Inclusion in future telephone directory listings for Elf Farm Supplies
- 2) Direct advice to Hawkesbury City Council, the EPA and any persons who may contact the plant regarding odour by mail or using existing phone numbers
- 3) Inclusion on a sign at the property entrance
- 4) Issue to interested persons via business cards or other media as the case arises.

- E1.3 Complaints logging and investigation:

Details of any complaints received by the Licensee must be documented and kept at a location on the premises as follows:

- (a) Every complaint is to be investigated as far as is practicable and a record created of the response.
- (b) If the complaint is received by staff at the time the odour is claimed to be present, the location where the odour is detected must be attended to confirm the report and note relevant details.
- (c) If for any reason it is not possible to attend the location of the reported odour, and where contact details are available, the Licensee is to contact the complainant for more information regarding the complaint.
- (d) Where investigation or further contact is not possible due to a delayed or anonymous complaint, no contact details for the complainant or difficulty in attending the reported location, a record must nonetheless be made of the complaint.

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- (e) A record is to be made of activities at the plant during the period leading up to the time of the reported incident.
- (f) The wind strength and direction is to be obtained and recorded from the weather station for the period of one hour prior to the reported incident.

E1.4 A process for recording the outcome of investigations and the action taken:

An Odour Complaint Report is to be completed to summarise all actions taken to investigate the complaint including:

- (a) Time, date and location of the odour report;
- (b) Name and address of the complainant (if provided);
- (c) The name of the person conducting the investigation;
- (d) The activities in the plant in the one hour preceding the reported incident;
- (e) The average wind speed and direction during the one hour preceding the odour incident;
- (f) Any other observations as to the possible source of the odour incident.

E1.5 Feedback to complainants following investigation:

A summary of the information documented under Condition E1.1.3 is to be given to the complainant, where possible, in a follow-up telephone call or letter.

- E1.6 (a) The record of a complaint must be kept for at least 4 years after a complaint was made.
- (b) Records must be made available to an authorised officer of the EPA who asks to see them.

## Dictionary

### General Dictionary

In this licence, unless the contrary is indicated, the terms below have the following meanings:

<b>3DGM [in relation to a concentration limit]</b>	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
<b>Act</b>	Means the Protection of the Environment Operations Act 1997
<b>activity</b>	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
<b>actual load</b>	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 1998
<b>AM</b>	Together with a number, means an ambient air monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
<b>AMG</b>	Australian Map Grid
<b>anniversary date</b>	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
<b>annual return</b>	Is defined in R1.1
<b>Approved Methods</b>	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 1998

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<b>assessable pollutants</b>	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 1998
<b>BOD</b>	Means biochemical oxygen demand
<b>CEM</b>	Together with a number, means a continuous emission monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
<b>COD</b>	Means chemical oxygen demand
<b>composite sample</b>	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
<b>cond.</b>	Means conductivity
<b>environment</b>	Has the same meaning as in the Protection of the Environment Operations Act 1997
<b>environment protection legislation</b>	Has the same meaning as in the Protection of the Environment Administration Act 1991
<b>EPA</b>	Means Environment Protection Authority of New South Wales.
<b>fee-based activity classification</b>	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 1998.
<b>flow weighted composite sample</b>	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
<b>general solid waste (non-putrescible)</b>	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
<b>general solid waste (putrescible)</b>	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
<b>grab sample</b>	Means a single sample taken at a point at a single time
<b>hazardous waste</b>	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
<b>licensee</b>	Means the licence holder described at the front of this licence
<b>load calculation protocol</b>	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 1998
<b>local authority</b>	Has the same meaning as in the Protection of the Environment Operations Act 1997
<b>material harm</b>	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
<b>MBAS</b>	Means methylene blue active substances
<b>Minister</b>	Means the Minister administering the Protection of the Environment Operations Act 1997
<b>mobile plant</b>	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
<b>motor vehicle</b>	Has the same meaning as in the Protection of the Environment Operations Act 1997
<b>O&amp;G</b>	Means oil and grease
<b>percentile [in relation to a concentration limit]</b>	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period

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<b>of a sample]</b>	of time is the Reporting Period unless otherwise stated in this licence.
<b>plant</b>	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
<b>pollution of waters [or water pollution]</b>	Has the same meaning as in the Protection of the Environment Operations Act 1997
<b>premises</b>	Means the premises described in condition A2.1
<b>public authority</b>	Has the same meaning as in the Protection of the Environment Operations Act 1997
<b>regional office</b>	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
<b>reporting period</b>	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 months. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
<b>restricted solid waste</b>	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
<b>scheduled activity</b>	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
<b>special waste</b>	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
<b>TM</b>	Together with a number, means a test method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
<b>TSP</b>	Means total suspended particles
<b>TSS</b>	Means total suspended solids
<b>Type 1 substance</b>	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
<b>Type 2 substance</b>	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
<b>utilisation area</b>	Means any area shown as a utilisation area on a map submitted with the application for this licence
<b>waste</b>	Has the same meaning as in the Protection of the Environment Operations Act 1997
<b>waste type</b>	Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non-putrescible), special waste or hazardous waste

Ms Nadia Kanhoush

Environment Protection Authority

(By Delegation)



Date of this edition - 07-Jul-2010

## End Notes

- 1 Licence varied by notice 1001783, issued on 19-Sep-2000, which came into effect on 14-Oct-2000.
- 2 Licence varied by notice 1010892, issued on 19-Oct-2001, which came into effect on 13-Nov-2001.
- 3 Licence varied by notice 1015799, issued on 20-Mar-2002, which came into effect on 14-Apr-2002.
- 4 Licence varied by notice 1018881, issued on 17-Jul-2002, which came into effect on 11-Aug-2002.
- 5 Licence varied by notice 1019967, issued on 29-Aug-2002, which came into effect on 23-Sep-2002.
- 6 Licence varied by notice 1021960, issued on 28-Nov-2002, which came into effect on 23-Dec-2002.
- 7 Licence varied by notice 1031591, issued on 13-Oct-2003, which came into effect on 13-Oct-2003.
- 8 Licence varied by notice 1032264, issued on 02-Dec-2003, which came into effect on 27-Dec-2003.
- 9 Licence varied by notice 1040144, issued on 08-Sep-2004, which came into effect on 03-Oct-2004.
- 10 Licence varied by notice 1064617, issued on 08-Sep-2006, which came into effect on 08-Sep-2006.
- 11 Licence varied by notice 1073027, issued on 28-May-2007, which came into effect on 28-May-2007.
- 12 Licence transferred through application 145582, approved on 06-Aug-2008, which came into effect on 01-Jul-2008.
- 13 Condition A1.3 Not applicable varied by notice issued on <issue date> which came into effect on <effective date>
- 14 Licence varied by notice 1096799, issued on 04-Feb-2009, which came into effect on 04-Feb-2009.
- 15 Licence varied by Correction to EPA Regional data record., issued on 23-Jun-2010, which came into effect on 23-Jun-2010.
- 16 Licence varied by correction to DECCW Region data record, issued on 07-Jul-2010, which came into effect on 07-Jul-2010.

## Appendix C

# WATER MANAGEMENT PLAN







# ELF FARM SUPPLIES MUSHROOM SUBSTRATE PLANT, MULGRAVE WATER MANAGEMENT PLAN

## 1 INTRODUCTION

Water management procedures at Elf Farm Supplies' Mulgrave substrate plant have been developed consistent with previous conditions of approval and to minimise water consumption. The approved expansion of the plant will result in some modifications to operational water and stormwater management. *Figure 1* shows the layout of the substrate plant with the approved staged development.

## 2 OPERATIONAL WATER

*Figure 2* is an operational water flow chart for the plant.

### 2.1 Water Sources

Mushroom substrate production is a water-intensive process. Operational water is obtained from a number of sources:

- D Water for use in the Phase 1 process is pumped from South Creek and/or from a bore in accordance with licences administered by the Office of Water. Creek water is pumped either directly to the bioscrubber reservoir or to a 120,000 litre water tank located beside the maintenance workshop. The Sydney Water service is also connected as a backup to provide operational water should either the South Creek or borehole sources be unavailable.
- D Potable water used for the Phase 2/3 processing area is sourced from the metered Sydney Water supply. The Phase 2/3 processing area requires clean water to minimise the risk of contaminating the pasteurised substrate.
- D Potable water for the office, staff amenities, maintenance workshop and cooling towers is also supplied from Sydney Water. Fire hose reels are also connected to this supply. Fire hydrants are connected to the Sydney Water fire mains.
- D Rainfall runoff from the sealed work area around the raw materials storage shed, Phase 1 tunnel building and the pre-wet shed drains to the west water recycle pit adding to the supply of operational water.
- D The farm dam and sediment retention basins on the property collect building roof water and site drainage water. This water is not currently used in the operation, but may be available for use with future capital investment and licensing, where appropriate.

FIGURE 1 Substrate Plant Staging Plan



## 2.2 *Pre-Wet and Phase 1 Process Water*

Water for use in the pre-wet and Phase 1 process is preferentially drawn from the bioscrubber to maintain a flow of fresh water through the bioscrubber. The pool of water in the base of the No 1 bioscrubber has an operating depth range between 600 and 1,500 mm with automatic top up. If the level reaches the minimum setting, process water is drawn from the creek supply until the bioscrubber level is restored.

Water is used in the Phase 1 processing area for bale wetting, addition to the pre-wet mixture, addition to composting material in the Phase 1 tunnel building and for daily wash down in the Phase 1 buildings and work area. Wash down water collects in the recycle pit for reuse in the process. There is no waste water generated from the Phase 1 process.

## 2.3 *Bale Wetting*

The straw bale wetting operation is a circulatory system with water being pumped from the water recycle pit and sprayed over the stacked straw bales. Surplus water drains from the bales and flows back to the collection pit for recirculation. A gross solids trap is installed in the drain leading to the pit to reduce the volume of solid material entering the pit and allow easy cleaning. Standby pumps are installed in the pit to reduce the risk of interruption to service. The pumps and spray nozzles are designed to allow solids to pass through, minimising the likelihood of blockage. An aeration pump is installed in the pit to oxygenate the water and maintain aerobic conditions.

The water recycle pit is de-sludged fortnightly, producing about a wheelbarrow load of material that is added to the processing substrate. Apart from bale twine, there is no liquid or solid waste from this operation.

## 2.4 *Phase 2/3 Process Water*

The Phase 2/3 processing building requires water for wash down, the refrigeration system, steam boiler and for adding to the substrate if required. There is no waste water from this building as all drainage water from the Phase 2/3 operation is pumped to the west water recycle pit for use in Phase 1 processing.

## 2.5 *Summary of Water Requirements*

Table 1 provides an estimate of water usage at the substrate plant currently and when all stages of development are fully operational.

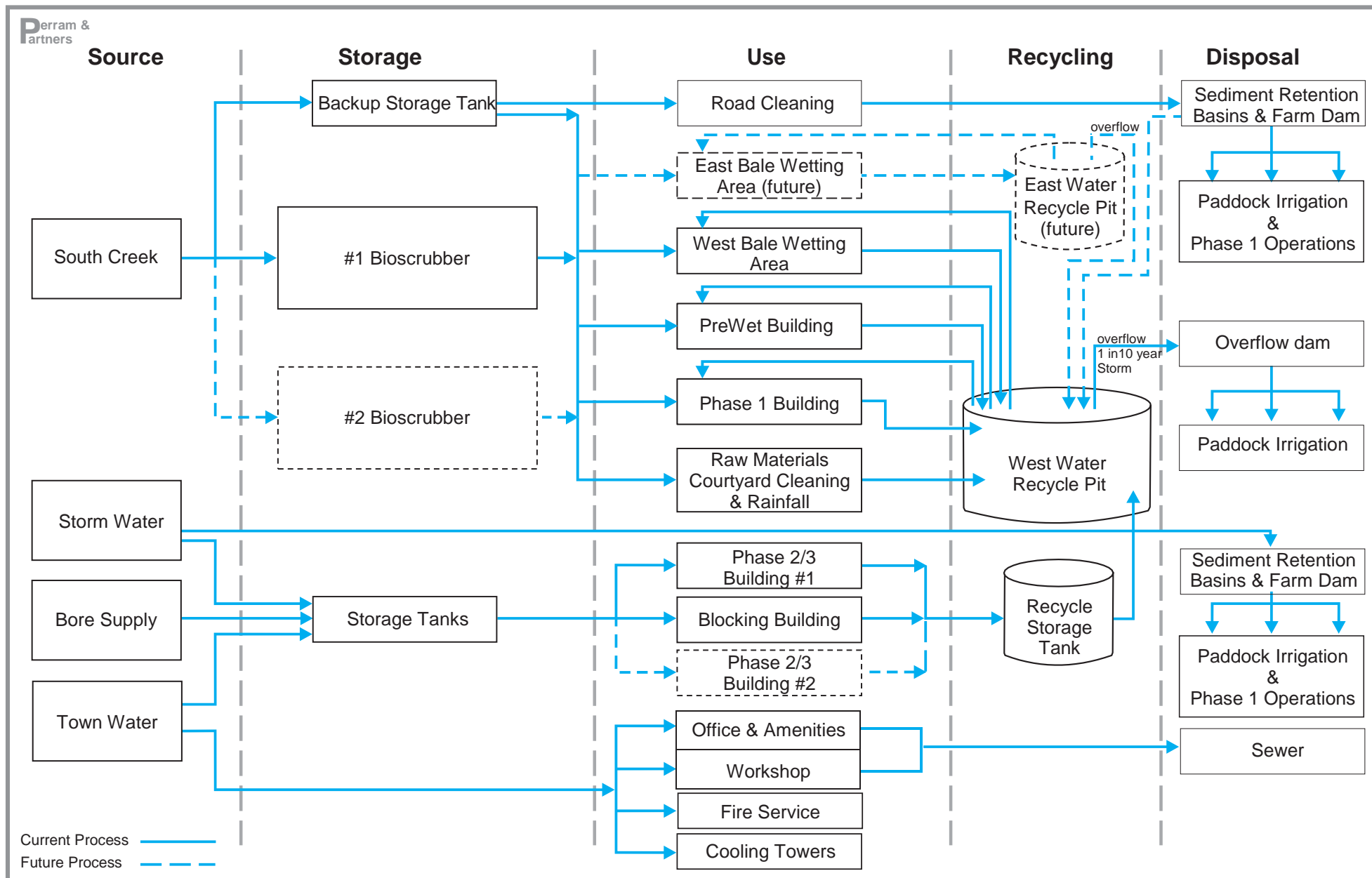


FIGURE 2 Substrate Plant Operational Water Flow Chart

Table 1 SUMMARY OF WATER USE

Water Use	Source	Estimated Water Consumption	
		Current production (1,000 t/w) <sup>1</sup>	Stage 3 production (3,200 t/w) <sup>1</sup>
Phase 1 processing area	South Creek, Phase 2/3 recycled water <sup>2</sup> , with borehole <sup>3</sup> and town water backup	40 megalitres / year	80 to 100 megalitres/year
Phase 2/3 building incl. wash down	Town water	15 megalitres/year	35 megalitres/year
Potable uses	Town water	200 kilolitres/year	250 kilolitres/year
Fire fighting	Town water	nil	nil

1 Tonnes per week of Phase 1 substrate

2 Approximately 92% of the Phase 2/3 water consumption is recovered and recycled for Phase 1 use.

3 Following an extended wet period the quality of water from the borehole has declined and it is not currently in use.

## 2.6 Domestic Wastewater

Wastewater from the maintenance shed and staff amenities is discharged to sewer. This is the only operational wastewater generated on the site.

## 2.7 Operational Water Management Procedures

### 2.7.1 Water Usage Priority

The priority for sourcing process water for Phase 1 operations is as follows:

- (i) West water recycle pit - whenever the pit contains water above its normal operating level, extract water to lower the level and restore holding capacity for stormwater;
- (ii) Bioscrubber reservoir;
- (iii) 120,000 litre storage tank;
- (iv) Bore supply (when of suitable quality);
- (v) Sydney Water service.

### 2.7.2 *Process Water Control*

The following procedures prevent the possibility of process water escaping to South Creek:

- (i) Apply process water only at locations where there is a sealed operational surface so any spillage or surplus will drain to a collection system;
- (ii) Maintain adequate holding capacity in the west water recycle pit with the backup farm dam as described in section 3;
- (iii) Clean the solids filter on the input to the west water recycle pit when water flow is present (operational water or stormwater);
- (iv) Remove any solids or sludge present in the collection pit at intervals not greater than fortnightly.

## 3. **STORMWATER MANAGEMENT**

A Stormwater Management Plan for the proposed expansion was prepared by Barker Ryan Stewart and included in the Environmental Assessment (Perram & Partners 2010).

### 3.1 *Existing Arrangement*

Existing stormwater drainage at the site includes the following features:

- D roof water from most major structures at the site is drained either:
  - to two stormwater detention basins, one discharging to the farm dam in the north east corner of the property and the other discharging to the South Creek flood plain;
  - from some areas, directly to the farm dam; or
  - directly to the South Creek flood plain
- D roof water from buildings near the southern boundary flows beneath the Blacktown – Richmond Railway to the neighbouring market garden which has a large storage dam;
- D surface water from non-operational areas and roadways on the site is directed to two stormwater detention basins, one discharging to the farm dam in the north east corner of the property and the other discharging to the South Creek flood plain; and
- D surface water from the Phase 1 operational area of the site drains to the west water recycle pit, from which it is re-used in the process.

A catchment plan prepared by Barker Ryan Stewart for the project application is appended to this water management plan.



### 3.2 *West Water Recycling Pit*

The west water recycle pit has been designed with sufficient capacity to retain the first flush of rainfall runoff from operational surfaces of the site. The pit can retain at least 29 cubic metres of stormwater, equivalent to 10 millimetres of runoff from the operational surface area of the plant. This capacity exists above a sump where bale-wetting water accumulates for recirculation through the bale sprays. The pit capacity was designed in accordance with requirements specified at the time by the EPA.

Should the pit become full, a weir diverts any surplus runoff to the farm dam immediately west of the plant. The dam is configured so as not to receive runoff water from any other source. Water collecting in this dam is used for farm irrigation with the level of water in the dam maintained at a minimum.

Whenever rainfall results in surplus water being present in the west water recycle pit it is preferentially used for operational purposes, quickly restoring capacity of the pit to collect water from subsequent rainfall.

### 3.3 *Approved Expansion Works*

Expansion of the plant will alter the existing stormwater arrangement as follows:

- D an east water recycle pit will be installed to serve the second bale wetting area and will receive stormwater runoff from this area;
- D the total surface area draining stormwater to the various dams and discharges on the property will increase only marginally as a result of the development.
- D the additional area of roof and paving will increase the volume of stormwater and its flow rate; and
- D additional paved and hardstand areas may contribute increased sediment to stormwater runoff.

The following works are included in the project to manage the changed stormwater conditions resulting from the development. These works were described in the Environmental Assessment (Perram & Partners 2010) and the stormwater management plan for the development enclosed in that document:

- D the east water recycle pit will be sized to contain the first flush of rainfall runoff from its catchment as for the existing (west) pit. Any surplus runoff will be diverted at the inlet to the west water recycle pit and thence to the western farm dam;
- D the two existing sediment basins will be modified to better detain stormwater during storm events. Works include fitting orifice plates to the outlets of both basins and minor earthworks at the north-western basin; and
- D water quality works include enlarging a reed bed at the inlet to the north eastern farm dam and installing a bio basin to receive stormwater discharging to the west onto the flood plain;

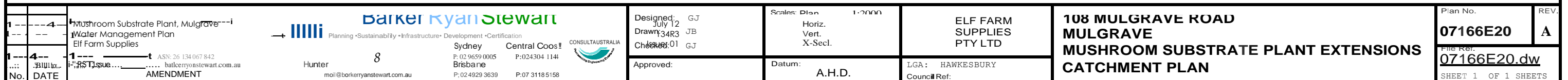
The detention basin modifications are designed to ensure there will be no increase in stormwater flow from the developed area. The enlarged reed bed and new bio basin will ensure that stormwater quality does not deteriorate as a result of the development.

When construction work is in progress, the detention basins will also serve as sediment basins. The enlarged reed bed will be vegetated by transplanting existing aquatic vegetation.

### **3.4 Stormwater Management and Maintenance Procedures**

The stormwater system requires the following intervention to ensure continued correct operation:

- (i) As soon as possible following rainfall, ensure that sufficient stormwater is removed from the west water recycling pit to restore 29 cubic metres of available stormwater storage capacity;
- (ii) Ensure the maximum water level in the pit for normal (dry weather) operations remains clearly marked;
- (iii) Utilise stormwater from the farm dam west of the site as first priority for pasture irrigation whenever water collects in the dam;
- (iv) Maintain the operational areas of the site in a clean state to minimise the quantity of solid materials washed into the stormwater system;
- (v) Apply maintenance protocols to the water recycle pits indicated in section 2:7.2
  - clean the solids filter on the input to the water recycle pits when water flow is present (operational water or stormwater);
  - remove any solids or sludge present in the collection pits at intervals not greater than fortnightly.
- (vi) Remove any accumulated sediment or sludge from the detention basins when required; and
- (vii) Inspect and maintain vegetation in the reed bed and bio-retention basin as required, including harvesting and desludging should this become necessary.





## Appendix D

# NOISE MANAGEMENT PLAN





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Consulting Acoustical & Vibration Engineers

**OPERATIONAL NOISE MANAGEMENT PLAN  
SUBSTRATE PLANT  
MULGRAVE**

**42.6411.ONMP\_Mul:CFCD5  
Rev 02**

**Prepared for:** ELF FARM SUPPLIES  
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April 2012

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## 1.0 INTRODUCTION

Atkins Acoustics was engaged by Perram & Partners on behalf of Elf Farm Supplies to prepare an Operational Noise Management Plan (*ONMP*) for the existing and upgraded (Approval 08\_0255) mushroom substrate plant at Mulgrave.

This report addresses procedures for the management of noise issues associated with the operation of the Mulgrave substrate plant. The facility would be expanded in three (3) stages over ten (10) years.

## 2.1 REQUIREMENTS

### 2.2 Ministers Conditions of Approval

Conditions of Approval were issued by Department of Planning and Infrastructure (11 January 2012) for the development under Application No. 08\_0255. Condition 22 of Schedule 3 requires the preparation of a Noise Management Plan for the Substrate Plant. Specifically:

#### *Noise Management Plan*

- 22. The Proponent shall prepare and implement a Noise Management Plan for the Substrate Plant site in consultation with the OEH to the satisfaction of the Director-General. The Plan must be submitted to the Director-General for approval prior to commencement of operations, and include a noise monitoring protocol for evaluating compliance with the noise impact assessment criteria in this approval.*

In terms of specific operational noise limits, Condition 19 states:

#### *Operational Noise Criteria*

- 19. The Proponent shall ensure that the operational noise generated by the Substrate Plant site does not exceed the criteria in Table 2.*

Table 2: Operational Noise impact assessment criteria dB(A)

<b>Receiver / Location</b>	<b>Day/Evening</b> <i>L<sub>Aeq</sub> (15 minute)</i>	<b>Night</b> <i>L<sub>Aeq</sub> (15 minute)</i>
<i>R1 – 46 Mulgrave Road, Mulgrave</i>	42	42
<i>R2 – Mulgrave Industrial Area</i>		
<i>R3 – 2 Railway Road, Mulgrave</i>		
<i>R4 – 126 Mulgrave Road, Mulgrave</i>	44	39
<i>R5 – Chisholm Place, South Windsor</i>		

Notes:

- Noise generated by the Project is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy.

## 2.3 Relevant Guidelines

The Substrate Plant, Mulgrave ONMP was prepared with consideration of:

- o *OEH, Industrial Noise Policy (2004)*
- o *Department of Planning and Infrastructure, Approval 08\_0255*

### 3.0 PROPOSAL

The expansion of the substrate site will be accommodated within the south-east, south-west and north-west portions of the site (*Figure 1*). The substrate production at Mulgrave is currently limited by its development consent to a maximum of 1,000 tonnes/week of Phase 1 substrate, regardless of whether this is the final product or further processed to produce Phase 2 or 3 products. Due to efficiencies and refinement of processing operations, increased production utilising the current plant is possible. In addition, with the advent of Phase 2 and 3 processing, demand for substrate by mushroom growers has increased and production levels at Mulgrave have operated maximum levels for the last 3 to 4 years. The expansion of the existing substrate plant is a prerequisite for the development of the mushroom farm at Londonderry (Approval 08\_0255).

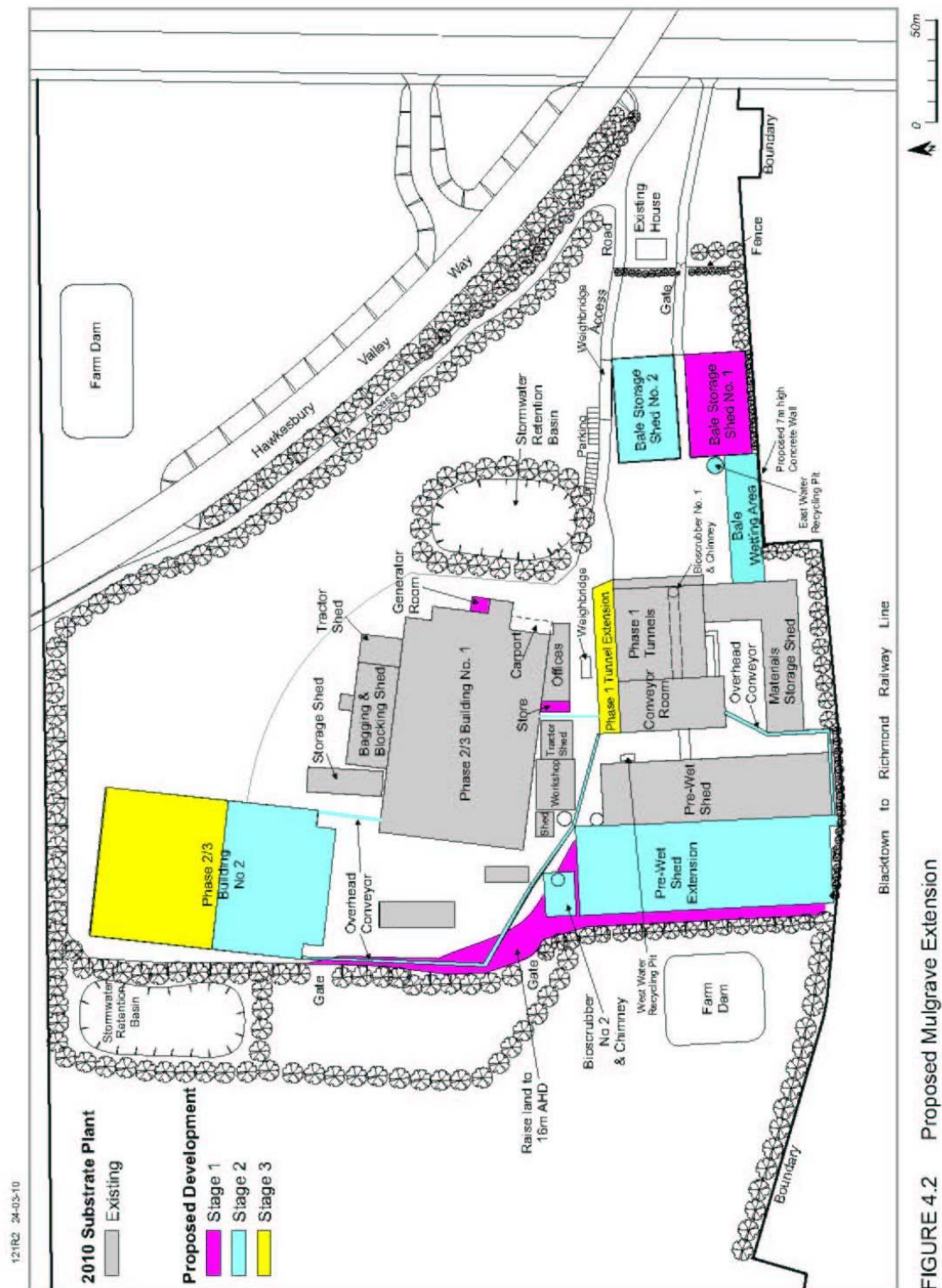
An increased production capacity of 1,600 tonnes/week can be accommodated utilising the existing substrate production plant and would not require any additional plant and equipment with the exception on an additional shed for the storage of straw.

To facilitate increased production up to 3,200 tonnes/week it is proposed to expand the facility in three (3) stages over ten (10) years. The main components of the expansion are presented below:

Stage	Description	Plant Capacity (tonnes/week*)
1	Additional straw bale storage shed. Fill final small area on western side	1,600
2	Pre-wet shed extension with new conveyor, new bio scrubber with chimney, extra bale wetting area, extra bale storage shed, relocate weighbridge, new Phase 2/3 building with 9 tunnels and overhead supply conveyor	2,400
3	Extra Phase 1 tunnels and 13 Phase 2/3 tunnels	3,200

\* Tonnes of Phase 1 substrate (1,000t Phase 1 reduces to 600t Phase 3)

**Figure 1: Site Layout - Substrate Plant Expansion**



**FIGURE 4.2 Proposed Mulgrave Extension**

In terms of vehicle trips associated with the development, the following numbers have been projected for the staged tonnage increases:

<i>1,000 tonne/week</i>	16 trucks/day 29 cars/day
<i>1,600 tonne/week</i>	24 trucks/day 32 cars/day
<i>3,200 tonne/week</i>	50 trucks/day 36 cars/day

In terms of vehicle *movements* the numbers presented have been doubled for modelling traffic noise.

Utilising the projected numbers, the hourly generation has identified the following day and night traffic *movements* for the final design level of 3,200 tonne/week:

Day (7.00am to 10.00pm)	70 trucks (5/hr) 50 cars (3/hr)
Night (10.00pm to 7.00am)	30 trucks (3/hr) 22 cars (2/hr)

The plant and equipment used at the facility is consistent with existing plant and includes front end loaders, mobile blender and tunnel loading machines. Fixed plant and equipment include exhaust and supply air fans, bio-scrubber, conveyors, chillers, compressors and pumps.

Hours of operation for the facility are twenty-four (24) hours, seven (7) days a week consistent with current use of the site and in accordance with Project Approval 08\_0255 (Condition 20).

## 4.1 OPERATIONAL NOISE

### 4.2 Noise Receivers

The nearest potentially affected residential dwellings are located to the north (46 Mulgrave Road – feedlot and associated residence), south-east (commercial market garden - 124 Mulgrave Road and isolated residential dwellings - 2 Railway Road) and west (Chisholm Place, South Windsor) of the development. The closest residential dwellings are located approximately 460m north, 170-280m south-east and 390m to the west. *Table 1* and *Figure 2* identifies the receiver locations selected for noise assessment.

***Table 1: Assessment Locations***

Reference	Description	Location
R1*	46 Mulgrave Road, Mulgrave	North
R2	Mulgrave Industrial Area	East
R3	2 Railway Road, Mulgrave	South-east
R4*	126 Mulgrave Road, Mulgrave	
R5*	Chisholm Place, South Windsor	West

\* Noise monitoring locations

**Figure 2: Reference Assessment Locations**



### 4.3 Existing Noise Environment

For the purpose of assessing noise impacts from the proposal and establish project specific noise assessment goals, the ambient noise environment was monitored from Friday 20 March 2009 to Friday 27 March 2009.

The results of the noise monitoring at reference locations (*Table 1*) and shown on *Figure 2* confirmed daytime background  $L_{A90}$  noise levels of:

<i>M1</i>	46 Mulgrave Road, Mulgrave	39-43dB(A) (RBL 42dB(A))
<i>M2</i>	126 Mulgrave Road, Mulgrave	41-46dB(A) (RBL 42dB(A))
<i>M3</i>	3 Chisholm Place, South Windsor	39-43dB(A) (RBL 41dB(A))

Considering the measured noise levels, procedures of the *Industrial Noise Policy* and location of referenced receivers, noise assessment goals were established for operation of the site and summarised in *Table 2*.

**Table 2: Operational Noise Assessment Goals**

*dB(A) re: 20 x 10<sup>-6</sup> Pa*

Period <sup>(1)</sup>	Recommended Amenity L <sub>Aeq</sub> Noise Level	Existing RBL	Existing L <sub>Aeq</sub> Noise Level	Assessment Intrusive Criterion L <sub>Aeq</sub> Noise Level	Assessment Amenity Criterion L <sub>Aeq</sub> Noise Level	Project Assessment Goals L <sub>Aeq</sub> Noise Level
<b>Reference Location R1 – north (M2)</b>						
Day	60	42	53	47	60	<b>47</b>
Evening	50	42	57	47	47	<b>47</b>
Night	45	38	53	43	43	<b>43</b>
<b>Reference Location R2: Mulgrave Industrial (east)</b>						
When in use	65-70					<b>65-70</b>
<b>Reference Location R3 &amp; 4 – southeast (M1)</b>						
Day	60	42	53	47	60	<b>47</b>
Evening	50	43	49	48	50	<b>47*</b>
Night	45	37	46	42	43**	<b>42</b>
<b>Reference Location R5 –west (M3)</b>						
Day	60	41	57	46	57	<b>46</b>
Evening	50	42	58	47	48	<b>46*</b>
Night	45	39	55	44	45	<b>44</b>

**NOTE:** Daytime : 7.00am to 6.00pm Monday to Saturday, 8.00am to 6.00pm Sunday and Public Holidays.  
Evening : 6.00pm to 10.00pm.

Night : 10.00pm to 7.00am Monday to Saturday, 10.00pm to 8.00am Sunday and Public Holidays.

\* Application Notes – NSW Industrial Noise Policy: RBL levels for evening should be no higher than day, and night RBL no higher than evening or day

\*\* Based on Industrial noise contribution of <40dB(A)

The project noise goals presented in *Table 2* were established during the preparation of the noise impact assessment of the development. The assessment demonstrated that predicted noise levels are expected to be lower than the *Table 2* assessment goals presented above. Accordingly, *Department of Planning and Infrastructure* imposed specific noise limits at reference receivers (*Condition 19*), reproduced below:

<i>Receiver / Location</i>	<i>Day/Evening</i> <i>L<sub>Aeq</sub> (15 minute)</i>	<i>Night</i> <i>L<sub>Aeq</sub> (15 minute)</i>
<i>R1 – 46 Mulgrave Road, Mulgrave</i>	42	42
<i>R2 – Mulgrave Industrial Area</i>		
<i>R3 – 2 Railway Road, Mulgrave</i>		
<i>R4 – 126 Mulgrave Road, Mulgrave</i>	44	39
<i>R5 – Chisholm Place, South Windsor</i>		



*Notes:*

- Noise generated by the Project is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy.

## 4.4 Operational Noise Sources

Operational noise from the Mulgrave Substrate Facility includes both mobile (FEL, trucks, blenders) and fixed mechanical plant (compressors, condensers, fans). A summary of the plant/equipment sound power levels adopted for the noise modelling to represent Stage 3, final design level of 3,200t/week are presented in *Table 3*. Sound power levels and octave band spectrum presented were established from site attended noise audits of the existing plant and equipment at Mulgrave, audits of similar equipment and manufacturer data. In terms of conveyor drives and belts, the levels presented are from similar installations.

**Table 3: Plant/Equipment Sound Power Levels**

*L<sub>Aeq</sub> re: 10<sup>-12</sup> Watts*

Plant Description	Sound Power Level								
	dB(A)	63	125	250	500	1k	2k	4k	8k
Super Chill Condensers EWK-D680 (x6)	83	79	81	81	78	75	73	76	72
Compressor Room (external door) x2	80	79	75	77	76	76	70	69	63
Bioscrubber 2 Fans – each (x2)	107	-	106	104	107	100	98	92	-
Conveyor Drive – New Phase 3 (E-W)	80	72	74	72	77	76	72	63	55
Conveyor Belt – New Phase 3 (E-W)	70*	75	75	70	70	63	59	52	43
Conveyor Drive – New Phase 3 (N-S)	80	72	74	72	77	76	72	63	55
Conveyor Belt – New Phase 3 (N-S)	70*	75	75	70	70	63	59	52	43
Conveyor Drive – Pre Wet	80	72	74	72	77	76	72	63	55
Conveyor Belt – Pre Wet	70*	75	75	70	70	63	59	52	43
FEL – Volvo L90E	102	115	104	100	98	99	92	92	87
FEL – Volvo L150E	105	120	104	103	102	99	97	95	91
FEL – Komatsu WA320	104	114	102	100	102	99	96	93	86
Traymaster Blender	110	109	110	109	108	104	102	99	96
Pre-Wet Shed (average in shed)	85	84	85	84	83	79	77	74	71
Truck (moving)	101	98	102	101	97	94	94	91	80
Loading Activities (Phase 2/3 average in loading hall)	86	81	84	85	85	81	78	73	65
Loading Activities (Phase 2/3 external facade)	63	66	68	63	61	60	49	43	37

\* sound power level per metre of conveyor

Fixed mechanical plant including condensers and compressors presented in *Table 3* are based on audit measurements of the existing plant servicing the current Phase 2/3 building. Existing compressor room and condensers are located on the eastern façade of the existing Phase 2/3 building. The compressors and condensers servicing the new Phase 2/3 building on the north-west corner of the site are proposed to be located along the southern façade of the new building.

#### 4.5 Assessment

The results of noise modelling (Reference: 40.6411.R1:CFCD4 Rev03 *Tables 12-14*) demonstrated that with the incorporation of noise and management controls, the predicted noise levels satisfy the project operational noise goals and satisfy the operational noise criteria specified in *Condition 19* under calm and adverse weather conditions identified in accordance with procedures of the *INP*.

The operational noise modelling utilised specific scenarios for day/evening and night as follows:

<i>Day /Evening</i>	<p>2 x trucks - 4 movements (base Lw101dB(A) adjusted for total 3min duration on access road and 3min duration for entry/exit paths to building)</p> <p>1 x Existing Phase 2/3 Building (exit &amp; entry points)</p> <p>1 x New Phase 2/3 Building (exit &amp; entry points)</p> <p>2 x Access Road</p> <p>3 x FEL (Komatsu WA320, Volvo L90E and Volvo L150E)</p> <p>1 x Bale Storage Area - Komatsu WA320</p> <p>1 x Materials Storage Area - Volvo L90E</p> <p>1 x Pre Wet (between Pre Wet and Conveyor Building) - Volvo L150E</p> <p>1 x Traymaster Blender within Pre Wet Shed</p> <p>Loading in both Phase 2/3 Buildings</p>
<i>Night</i>	<p>2 x trucks - 4 movements (base Lw101dB(A) adjusted for 3min duration on access road and 3min duration for entry/exit paths to building)</p> <p>1 x Existing Phase 2/3 Building (exit &amp; entry points)</p> <p>1 x New Phase 2/3 Building (exit &amp; entry points)</p> <p>2 x Access Road</p> <p>3 x FEL (Komatsu WA320, Volvo L90E and Volvo L150E)</p> <p>1 x Bale Storage Area - Komatsu WA320</p> <p>1 x Materials Storage Area - Volvo L90E</p> <p>1 x Pre Wet (between Pre Wet and Conveyor Building) - Volvo L150E</p> <p>Loading in both Phase 2/3 Buildings</p>

## 5.0 ROLES and RESPONSIBILITIES

This section of the *ONMP* provides an outline of the roles and responsibilities of the personnel involved in the operation of the site, including contractors to ensure that noise impacts are managed to comply with the relevant assessment goals and do not adversely impact the identified sensitive receivers. The personnel, roles and responsibilities are summarised below:

- General Manager*
- reviewing and authorising the *ONMP* in conjunction with *Managing Director*;
  - designate environmental responsibilities to the project *Operations Manager*;
  - ensure that the specified production limits for Phase 1 substrate are not exceeded as follows:

Stage 1	1,600 tonnes
Stage 2	2,400 tonnes
Stage 3	3,200 tonnes
  - ensure dispatch of Phase 3 substrate does not exceed 1,920 tonnes per week;
  - ensure sufficient resources are allocated such that the *ONMP* commitments are adopted; and,
  - continual review and monitoring of environmental performance to ensure suitability and effectiveness of *ONMP* and objectives in conjunction with *Managing Director*.
- Operations Manager*
- reviewing, maintaining, updating and implementing the *ONMP*;
  - educate staff and contractors to ensure all relevant personnel are aware of their obligations under the *ONMP*;
  - review identified noise issues or complaints and action;

- co-ordination of any activities and duties required under this *ONMP*;
- initial contact person in relation to any noise issues;
- provide advice on noise controls to manage any noise exceedances / complaints;
- designate an appropriately qualified person to provide specialist advice for managing noise as required; and,
- periodic review to ensure the *ONMP* is being implemented.

*Operational Staff*

- aware of their responsibilities under the *ONMP*;
- aware of the specific noise and vibration sources in their work area and requirements under this *ONMP* to minimise operational noise impacts; and,
- inform the *General Manager or Operations Manager* without delay where change in operations are required that may result in high levels of noise.

## **6.1 OPERATIONAL NOISE MANAGEMENT**

Notwithstanding the predicted compliance with the operational noise goals, to ensure that noise is managed and impacts minimised, the following measures are recommended:

- adoption of Best Management Practice (BMP) and Best Available Technology Economically Achievable (BATEA) practices as encouraged by the *OEHS*;
- Site developed generally in accordance with *Figure 1*;
- Site constructed with site levels approximately RL16-17, building heights of approximately eight to twelve (8-12) metres for Pre Wet Shed, seven to ten (7-10) metres for Bale Storage Shed and eleven (11) metres for new Phase 2/3 building;
- Cooling towers, compressors, conveyor drives, and mobile plant and equipment selected to satisfy the referenced acoustic performance (*Table 2*);

- Mechanical plant and equipment selections subject to review by Acoustic Consultant prior to final specification;
- A seven (7.0) metre high wall adjacent southern side of Stage 1 Bale Storage Shed and Bale Wetting Area constructed during Stage 1 works;
- Building walls (Bale Storage and Pre Wet) constructed with concrete to two (2) metres above FFL followed by galvanised steel frame and galvanised wall / roof sheeting nominally 0.6mm BMT and a minimum acoustic rating of Rw22. Final details subject to review prior to final specification;
- Internal walls and roof of tunnels within Phase 2/3 building constructed with concrete blockwork and/or Hebel panels/blocks;
- Building wall cladding (Phase 2/3 building) constructed with insulated colorbond sandwich panels consistent with existing Phase 2/3 building providing a nominal installed noise reduction in the order of 23dB(A) (Rw28 or greater). Final details subject to review prior to final specification;
- Building roof cladding constructed with sheet metal (min. 0.42BMT) over fibreglass building blanket and medium duty thermofoil or similar and insulated colorbond sandwich panel (ceiling) consistent with existing Phase 2/3 building providing a nominal installed noise reduction in the order of 28dB(A) (Rw34 or greater). Final details subject to review prior to final specification;
- Truck drivers instructed and contracted to operate on-site trucks at less than 20kph;
- Mobile plant fitted with low level or broadband 'quacker' reversing alarms; and
- Site inductions and personnel / contractor training in correct use of plant and equipment to minimise noise impacts;
- Truck access arrangements to allow for forward travel throughout the site and minimise reversing or manoeuvring where possible;

- Inspection / maintenance / repair program for mobile mechanical plant;
- The existing Environmental Management Plan should be amended and updated to ensure the following items are incorporated:
  - procedures for residents to contact the Operations Manager in regard to complaints or additional information;
  - follow-up procedures to inform residents of actions implemented following any noise complaints;
  - regular inspections of site plant including trucks to ensure that the installed noise suppression systems are functioning and require no maintenance; and,
  - regular audits at sensitive receiver locations to identify additional procedures to minimise noise impacts from the site.

## 6.2 Noise Monitoring

Considering the distance separation from the site and sensitive receivers, and predicted compliance with the noise assessment goals, exceedance of *Condition 19* noise criteria is not anticipated.

However *Schedule 3 - Condition 22* requires noise monitoring to evaluate noise compliance. Accordingly this *ONMP* recommends that noise monitoring be incorporated into the site Environmental Management Plan. It is proposed that within six (6) months of completion of each stage of the proposed upgrade of the substrate plant, noise monitoring be conducted at two (2) reference locations consistent with the closest residential receivers identified in *Table 1*, specifically Chisholm Place to the west and Railway Road/126 Mulgrave Road to the south-east. Where access to the identified receiver is not practical, alternative locations representative of the subject receiver/s could be considered.

Nearfield measurements of fixed and mobile plant and equipment would also be conducted within six (6) months of completion of each stage of the proposed upgrade or when there is significant changes to site plant and equipment, to ensure compliance with the noise levels presented in *Table 3* (Atkins Acoustics Report No. 41.6411.L4:CFCD5 *Table 10*).

In addition to the noise monitoring within six (6) months of the commissioning of each stage, where noise complaints are received by the Operations Manager, the source of the noise complaint will be identified and ameliorative measures considered if required. Following audits, control measures will be reviewed should additional ameliorative measures be required.

Complaints will be recorded, and include location of complainant, time/s of occurrence of alleged noise impacts, perceived source of noise, prevailing weather conditions and similar details that could be utilised to assist in the investigations of the noise complaint. All resident complaints will be responded to in a timely manner and action taken recorded.

### **6.3 Records**

The results of all noise complaints and monitoring will be held onsite and maintained by the *Operations Manager*.





## Appendix E

# ODOUR MANAGEMENT PLAN





# **ODOUR MANAGEMENT PLAN ELF FARM SUPPLIES SUBSTRATE FACILITY**

**Prepared for: Elf Farm Supplies Pty Ltd**

**19th April 2012**

**Job Number 12020067**

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# Odour Management Plan

## Elf Farm Supplies Substrate Facility

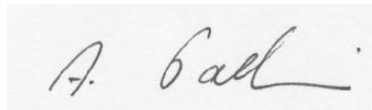
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**Date:** 19/04/2012

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### DOCUMENT CONTROL

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## 1 INTRODUCTION

This report has been prepared by Todoroski Air Sciences (TAS) on behalf of Elf Farm Supplies Pty Ltd (hereafter referred to as the Proponent). The report presents an Odour Management Plan (OMP) and has been prepared in accordance with the conditions set in the Project Approval for the expansion of the Elf Substrate Plant at Mulgrave, NSW (the Project).

The Elf Substrate Plant produces mushroom substrate which is a nutrient-rich growing medium used by mushroom farms for growing mushrooms. Mushroom substrate is produced from natural materials, primarily straw and water, with added ingredients of poultry manure, dry stable bedding, gypsum and agricultural meals and by-products. These materials are recycled leftover agricultural products which are used to produce the growing medium (substrate). After harvesting the mushrooms, the spent substrate is then recycled into the landscaping industry.

### 1.1 Preamble

This Odour Management Plan is designed to describe the measures that will be implemented to minimise the odour impacts of the Project. The OMP includes operational and control measures for normal and abnormal conditions which can generate odour. It is the primary odour control document for the Project and includes a procedure for the administration of odour complaints.

The OMP is intended to be used as a reference document for operational staff on a day-to-day basis and shows what actions should be taken to minimise potential odour impacts and who is responsible for authorising or undertaking the action.

The OMP details the operational control measures appropriate for management and control of odour. The OMP also aims to document the possibility of unanticipated events, such as equipment failure. Preventative and contingency actions in the event of equipment failure include appropriate maintenance work to be undertaken to reduce the likelihood of failures, and where possible keeping spare equipment to replace key odour control related equipment in the event of a failure.

The Odour Management Plan should be made available in hard-copy for reference to any regulator and all site personnel.

The OMP addresses the following issues:

- ✦ The activities which have potential to produce odour and the sources of odour emissions;
- ✦ Measures to minimise odour generation;
- ✦ Possible operational process or control failures or abnormal situations; and
- ✦ Record keeping of complaints and other operational aspects related to odour generation.

---

## 2 PROJECT DESCRIPTION

The Elf Substrate Plant is located at Mulgrave approximately 2km southeast of Windsor, NSW (see **Figure 2-1**). The site is surrounded by isolated semi-rural properties to the southeast, an industrial area to the east and northeast. Immediately to the west of the facility is a floodplain area and adjoining this is a suburban residential area.

The Elf Substrate Plant proposes to expand by upgrading its operations in planned stages designed to ensure the production rate of substrate material matches growing demand. The expansion involves three operational/construction stages which allow the facility to gradually increase its production rate. These stages are outlined below:

- ✦ Stage 1 - The construction of a new straw bale storage shed as the production level is increased to 1,600 tonnes of Phase 1 product per week;
- ✦ Stage 2 - The construction of a second bale storage shed, a new bale wetting area with water recycling pit, a new phase 2/3 building and an extension to the existing pre-wet shed with an additional bio-scrubber. During this stage, all fugitive odour sources will be enclosed and under slight negative pressure to allow odours arising from these sources to be processed by the bio-scrubbers. The production rate is designed to reach 2,400 tonnes of Phase 1 substrate per week; and
- ✦ Stage 3 - Extension to the new phase 2/3 building and extension of the Phase 1 tunnel building. The capacity of the facility is proposed to reach a maximum of 3,200 tonnes of Phase 1 substrate per week.

A site layout indicating the proposed construction stages is presented in **Figure 2-2**.





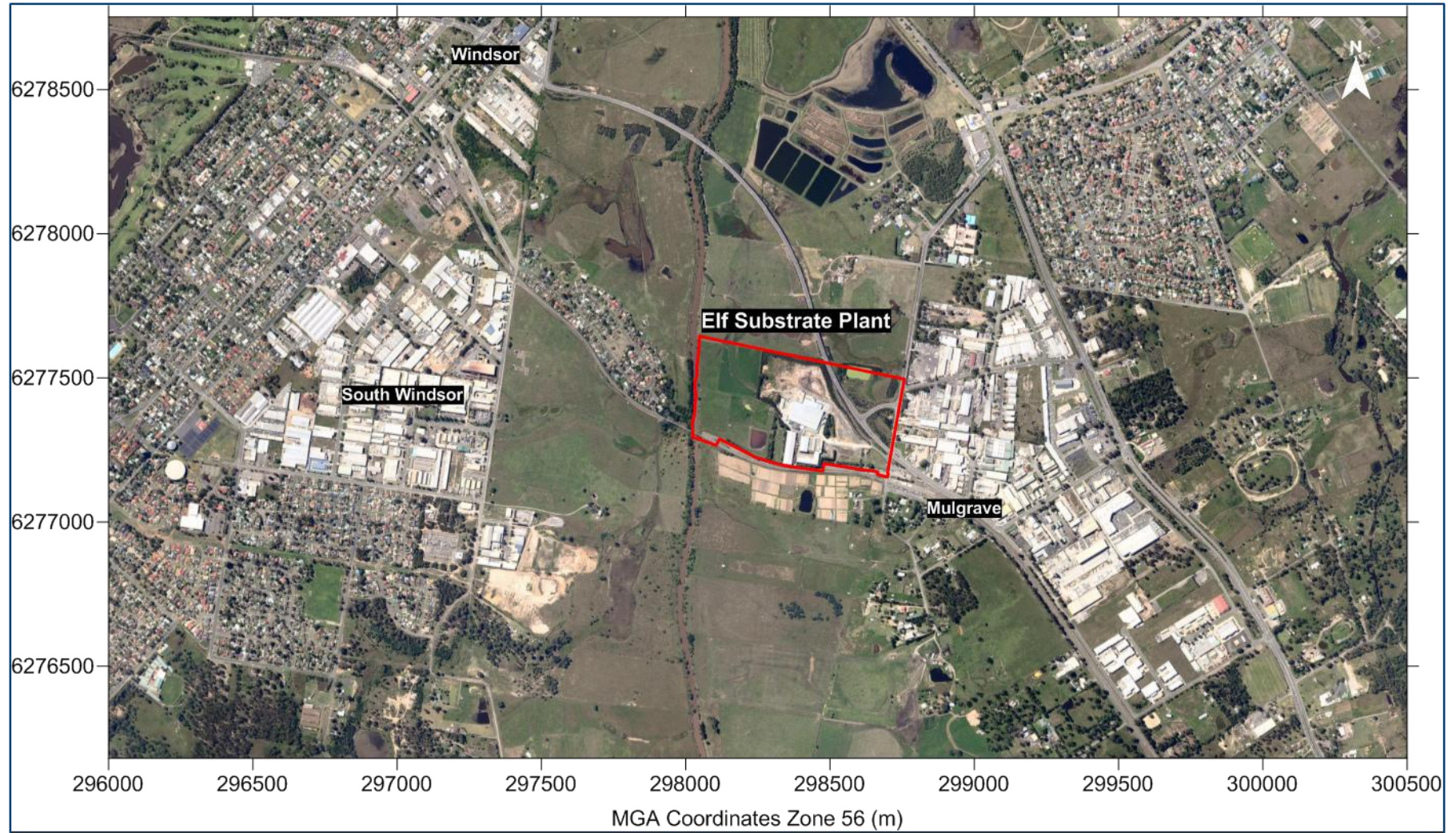


Figure 2-1: Project location



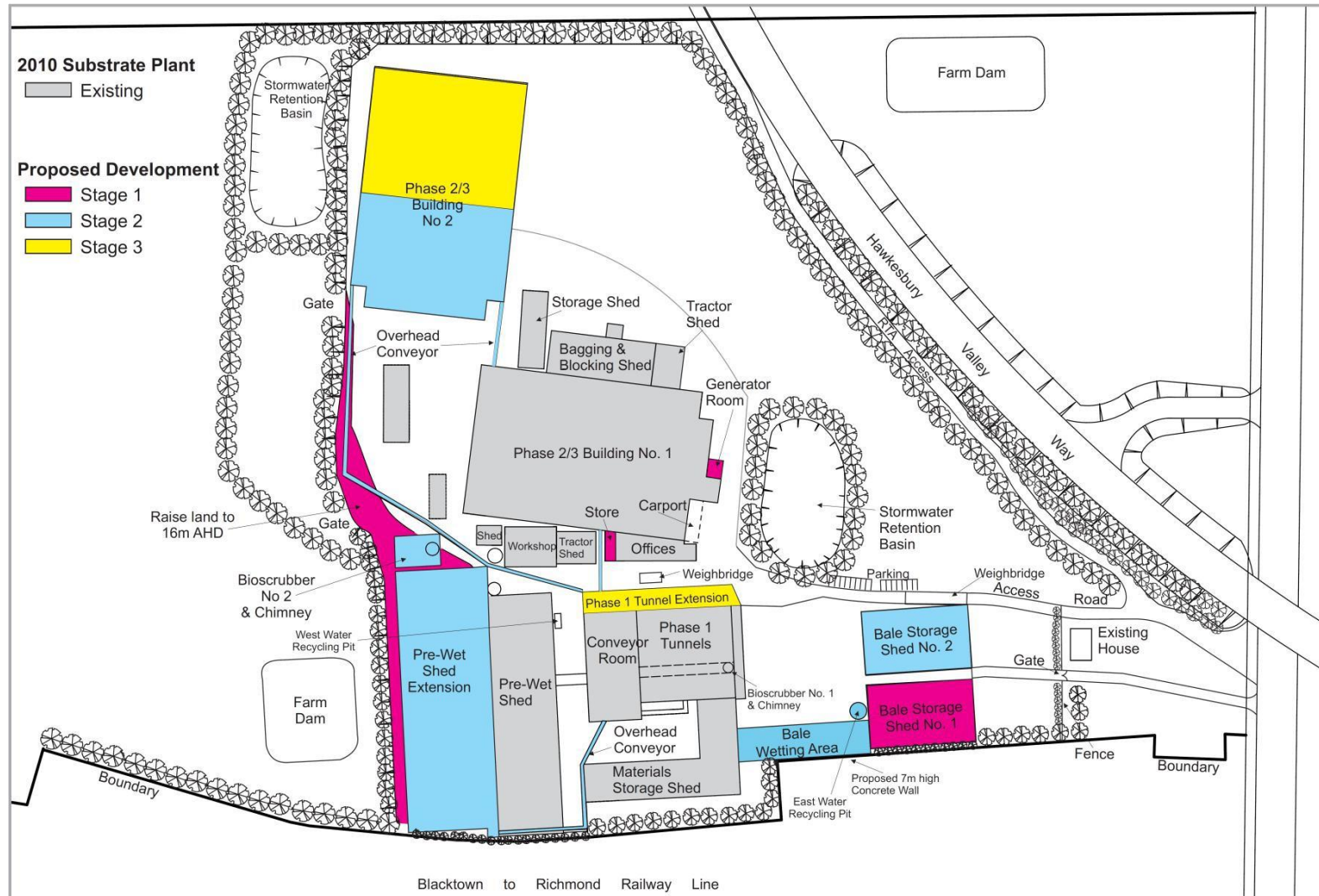


Figure 2-2: Site layout

### 3 ODOUR GOALS

Odour goals are based on the guidelines in the EPA 2001 publication *"Draft Policy: Assessment and Management of Odour from Stationary Sources in NSW"*. Odour goals relevant to the existing operation of the substrate plant are as follows:

- ✦ For the surrounding urban areas of McGraths Hill, Windsor and South Windsor, where the population of the affected community is 2000 or more, the appropriate goal is for odour at the receptors not to exceed 2 odour units for 99 per cent of the time in any year; and
- ✦ For the rural village of Mulgrave, where the residential population is substantially smaller and a population of approximately 10 is assumed, the appropriate goal is for odour at the receptors not to exceed 6 odour units for 99 per cent of the time in any year.

In relation to offensive odours generated at the site for the proposed expansion, the Project Approval states:

- ✦ The Proponent shall not cause or permit the emission of offensive odours from the Substrate Plant site, as defined under Section 129 of the POEO Act.
- ✦ The Proponent shall design, operate and maintain the bio-scrubber stacks at the Substrate Plant site in a manner that would achieve emissions compliance with the Environmental Protection License (EPL) for the Substrate Plant site. The Proponent must advise the Department of any variations to the EPL as approved by the EPA.

Odour assessment criteria are defined in the NSW Office of Environment and Heritage (NSW OEH) document *"Technical Framework: Assessment and management of odours from stationary sources in NSW"* to guide decisions about effective odour management and the potential to cause harm or unreasonably interfere with a community's quality of life. **Table 3-1** summarises the NSW OEH odour assessment criteria.

The criteria refer to odour dilutions, or odour units (OU). The odour assessment criteria allow for population size, range in sensitivities to odours within the community, cumulative impacts, anticipated odour levels during adverse meteorological conditions and community expectations of amenity.

**Table 3-1: NSW OEH Odour Assessment Criteria**

Population of affected community	Odour assessment criteria (OU)
Rural single residence ( $\leq 2$ )	7.0
~10	6.0
~30	5.0
~125	4.0
~500	3.0
Urban area ( $\geq 2000$ ) and/or schools and hospitals	2.0

Offensive odour is defined per Section 129 of the POEO Act as an odour that by reason of its strength, nature, duration, character or quality, or the time at which it is emitted, or any other circumstance is harmful to (or is likely to be harmful to) a person who is outside the premises from which it is emitted, or interferes unreasonably with (or is likely to interfere unreasonably with) the comfort or response of



a person who is outside the premises from which it is emitted, or that is of a strength, nature, duration, character or quality prescribed by the regulations or that is emitted at a time, or in other circumstances, prescribed by the regulations.

Odour assessments have been made of the likely Project odour impacts in terms of odour units. A human (or instrument) cannot detect odour in the field in terms of odour units, and the predicted odour levels in any modelling assessment therefore aim to represent the likely levels of potentially offensive odour.

It is however possible to measure odour in a stack or at the source. Based on dispersion modelling, odour concentration limits can be applied to sources to ensure that predicted levels are not exceeded off-site. Under the current Environmental Protection Licence (No. 6229), the bio-scrubber exhaust stack odour emissions limit is set at 55,400ou.m<sup>3</sup>/s.

## 4 ODOUR MANAGEMENT

### 4.1 Design Features for Odour Control

The Elf Substrate Plant has included additional operational design features to further control, maintain and manage odour emissions as part of the proposed expansion. The existing and proposed design features for odour control are:

- ✦ Under-cover storage to keep raw materials dry;
- ✦ Fully enclosed processing areas for all potentially odour-generating processes;
- ✦ Air-under system in the Pre-Wet shed and in Phase 1 tunnels to improve aeration during composting process;
- ✦ Computer controlled fans to maintain optimum air supply and extraction;
- ✦ Extensive instrumentation to monitor compost processing variables;
- ✦ A tunnel to enable fully enclosed transfer of pre-wet material from the pre-wet building to composting tunnels;
- ✦ Enclosed conveyor transport system for tunnel loading, dispatch loading and transfer to Phase 2 & 3 tunnels;
- ✦ A bio-scrubber to remove odorous compounds from exhaust air from Phase 1 tunnels prior to release to atmosphere;
- ✦ A chimney stack to discharge exhaust air from the Phase 1 tunnels bio-scrubber 40 metres above ground;
- ✦ Site monitoring network consisting of cameras and trigger alarms on operational processes;
- ✦ Maintaining storage of critical spares for machinery equipment where possible;
- ✦ Enclosing the storage areas and maintaining slight negative pressure, odour arising will pass through one of the bio-scrubbers (proposed in Stage 2 development);
- ✦ An additional bio-scrubber to remove odorous compounds from exhaust air from the pre-wet shed prior to release to atmosphere (proposed in Stage 2 development); and
- ✦ An additional chimney stack to discharge exhaust air from Pre-Wet sheds bio-scrubber 40 metres above ground (proposed in Stage 2 development).



## 4.2 Odour Management Procedure

Odour control is achieved with a combination of plant design and process management. The following process management actions are currently in place to minimise the generation of odour emissions:

- (i) Clean up any spillage in front of the ingredients store or elsewhere on a daily basis;
- (ii) Remove solid material from the collection pit screen daily;
- (iii) De-sludge the collection pit (if sludge is present) at regular intervals (at least fortnightly);
- (iv) Keep doors to internal process areas closed when not in use, except where this has no significant effect on the plant's odour performance;
- (v) Maintain appropriate conditions of temperature and oxygen content during composting, consistent with the needs of the process, to minimise odour generation;
- (vi) Ensure the exit velocity of air from the chimney always achieves the minimum requirement determined by odour dispersion modelling;
- (vii) Operate the bio-scrubber in a manner to maximise its efficiency at removing odour from the air stream;
- (viii) Minimise as far as practicable the duration of any bypassing of the bio-scrubber for maintenance;
- (ix) Time any bio-scrubber bypassing to occur when hot substrate is not being turned and when weather conditions will assist dispersion.

### 4.2.1 Additional Odour Control Measures for the Current Operation

The following additional mitigation measures are proposed for consideration to further minimise the odour emissions from the current operation. These might be reasonable in the longer term, subject to financial considerations and need for any further control;

- (i) Consider enclosing the bale wetting area or using a completely different method to wet the bales;
- (ii) Optimise the time taken, efficiency of transporting pre-wet material to the Phase 1 tunnels.



#### 4.2.2 Proposed Odour Control Measures for the Post Stage 1 Operation

During Stage 1, a new straw bale storage shed will be constructed. A review of the production process of Stage 1 showed that odour emissions from the site are unlikely to change as a result. Therefore, no additional odour control measures are warranted for Stage 1.

#### 4.2.3 Proposed Odour Control Measures for the Post Stage 2 Operation

Stage 2 includes construction and operation of an additional bale storage shed, a new bale wetting area with water recycling pit, a new phase 2/3 building and an extension to the existing pre-wet shed with an additional bio-scrubber. All fugitive sources would be enclosed and the odours arising from these sources will be passed through one of the bio-scrubbers before being released to the atmosphere.

Review of the production process for Stage 2 showed that odour emissions from the site are likely to be decreased by the upgrade to Stage 2, due to enclosing odour sources, maintaining slight negative pressure and directing emissions to an additional bio-scrubber. Odours at this stage would mainly arise from the bio-scrubber operations and the water collection pit. The following mitigation measures can be applied to minimise the odour emissions from the site for the post Stage 2 operations:

- (i) Clean up any spillage in front of the ingredients store or elsewhere on a daily basis;
- (ii) Remove solid material from the collection pit screens daily;
- (iii) De-sludge the collection pits (if sludge is present) at regular intervals (at least fortnightly);
- (iv) Keep doors to internal process areas closed when not in use, except where this has no significant effect on the plant's odour performance;
- (v) Maintain appropriate conditions of temperature and oxygen content during composting, consistent with the needs of the process, to minimise odour generation;
- (vi) Ensure the exit velocity of air from the chimney always achieves the minimum requirement determined by odour dispersion modelling;
- (vii) Operate each bio-scrubber in a manner that would maximise its efficiency at removing odour from the air stream being treated;
- (viii) Minimise as far as practicable the duration of any bypassing of the bio-scrubber for maintenance;
- (ix) Plan any bypassing of the bio-scrubber to occur when hot substrate is not being turned and when favourable weather conditions will assist dispersion; and,
- (x) Optimise the timing and frequency of turning each windrow at the pre-wet shed to minimise odour generation.

#### 4.2.4 Odour Control Measures for the Bio-scrubber Operation

The following management and maintenance functions will be undertaken during the operation of the bioscrubber:

- (i) Maintain water level within the designed operating range;



- (ii) Monthly internal inspection of the bioscrubber;
- (iii) Ensure that water intakes do not become blocked;
- (iv) Ensure that nozzles continue to function efficiently;
- (v) Ensure continued sealing of the directional vane system to enable maintenance and inspection to be carried out with fans in service;
- (vi) Prevent excessive build-up of sludge within the water reservoirs; and,
- (vii) Prevent excessive build-up of biosolids on the baffles and internal walls of the chambers.

#### 4.2.5 Odour Monitoring

Under the current Environmental Protection Licence (No. 6229), the bio-scrubber exhaust odour emissions are set at 55,400ou.m<sup>3</sup>/s.

Bi-annual stack emission testing and odour testing are carried out to ensure this licence condition is not exceeded. This approach appears to be satisfactory at this time and no further actions appear to be warranted.

### 4.3 Complaints Management

*The following complaints management system was developed in consultation with the EPA to comply with condition U2.1 of Environment Protection Licence 6229, as amended on 19 October 2001.*

#### 4.3.1 Overview

This complaints management system contains the following elements:

- ✦ Advertised telephone number for complaints;
- ✦ System for logging and investigating complaints;
- ✦ Process for recording the outcome of investigations and action taken; and,
- ✦ Feed-back to complainants following investigation.

It is assumed that complaints will be primarily concerned with odour, although it is understood that any other complaint will be handled in a similar manner.

#### 4.3.2 Telephone Hot-line

A 24-hour telephone number has been created for use by the public when making complaints, the number is **(02) 4577 9163**. The number will be made known to the public by:

- (i) Inclusion in telephone directory listings for Elf Farm Supplies;
- (ii) Direct advice to Council, the EPA and any persons who may contact the plant regarding odour by mail or using existing phone numbers;
- (iii) Printing on business cards, fridge magnets for issue to interested persons as the opportunity arises; and





- (iv) Inclusion on a sign at the property entrance.

The telephone number provides a recorded message, requesting callers to leave a return number so that Elf Farm Supplies' staff may contact them. Out-of-hours complaints will go to a telephone answering machine.

#### 4.3.3 Complaints Logging

When a complaint is received by Elf Farm Supplies, details will be recorded on the Odour Complaint Report. Blank copies of the complaint forms will be kept in the office at all times and will be issued to on-call staff.

Completed complaint forms will be sequentially numbered and filed in numerical order. The file will be retained in the plant office and may be inspected by the EPA.

#### 4.3.4 Complaints Handling and Investigation

The following procedures will be followed whenever complaints are received:

- (i) Every complaint is to be investigated as far as practicable and a record created of the response.
- (ii) The procedure for investigating complaints and responding is to be explained to the complainant at the time the complaint is recorded.
- (iii) If the complaint is received by staff while the odour is claimed to be present, the location of the odour is to be visited, immediately if practicable, to verify the presence of odour and record details.
- (iv) If the complaint is received after the odour incident when odour is no longer present, or if it is not practical to visit the site, the complainant is to be asked for more details of the odour (intensity, duration, offensiveness)
- (v) A record is to be made of activities at the plant during the period leading up to the time of the odour incident. When the prevailing wind speeds are low, this period may be over one hour, depending how far the receptor is from the site (e.g. odour released into air travelling at 0.5 m/s would take 1 hour to travel 1.8 km from the site)
- (vi) The wind speed, wind direction, temperature and other available meteorological parameters is to be obtained from the weather station for the period of about one hour prior to the odour incident (see point (v)).
- (vii) The complainant is to be contacted within 48 hours of the complaint being lodged to provide details of the investigations and other action taken in response to the complaint.
- (viii) The Odour Complaint Report is to be completed to summarise all actions taken to investigate the complaint containing:
  - Time, date and location of odour incident;
  - Name and address of complainant (if provided);
  - Name of the person conducting the investigation;
  - Activities in the plant during the hour preceding the odour incident;
  - Average wind strength and direction preceding the odour incident; and,



- 
- Any other observations as to the possible source of the odour incident;
  - Summary of information given to complainant in follow up call.
- (ix) Anonymous complaints are to be recorded but in the absence of a given address, conclusive investigation will usually not be possible.

## 5 CONTINUOUS IMPROVEMENT

To ensure this plan and the operational management on the site is kept current, this plan and its structure and requirements will undergo review as follows:

- ✦ Regular annual review to check for relevance and opportunities for improvement;
- ✦ Whenever any major change to the design or operations of the plant occurs:
- ✦ Whenever any opportunity to make improvements arises, for example if such opportunities are discovered during complaints investigations, maintenance work or from any major incident, failure, success and the like.
- ✦ In response to any useful public or others suggestions.

The review may range from a simple correction, through to a detailed formal review of each element of the plan. Any review must be documented and controlled by ascribing a revised document version number and date.





## Appendix F

# ENERGY EFFICIENCY PLAN





# ELF FARM SUPPLIES MUSHROOM SUBSTRATE PLANT, MULGRAVE ENERGY EFFICIENCY PLAN

## 11 INTRODUCTION

Elf Farm Supplies operates a mushroom substrate plant at 108 Mulgrave Road, Mulgrave. As part of managing the costs of substrate production, the company seeks to minimise energy consumption. This will become of heightened importance from 1 July 2012 with the introduction of a carbon tax that will add to the cost of energy consumed at the plant. This plan indicates the measures that are in place to manage energy consumption at the substrate plant.

## 12 ENERGY CONSUMPTION

The substrate plant consumes energy in the form of diesel fuel, electricity and natural gas as follows:

- D diesel – front end loaders, tractor, blending machine, backup generator, forklifts;
- D electricity – fans, pumps air conditioning plant, general power and lighting;
- D natural gas - boiler

The measured annual energy consumption at the present rate of production (1000 tonnes of Phase 1 substrate per week) and projected consumption for each stage of the approved expansion is shown in the table below, sourced from the Environmental Assessment (Perram & Partners 2010).

*Table 1* ANNUAL ENERGY CONSUMPTION

Fuel Type	Production Rate			
	Existing	Staged Expansion		
	1,000 (t/week)	1,600 (t/week)	2,400 (t/week)	3,200 (t/week)
Diesel (kL)	135	216	276	336
Electricity (kWh)	3,000	4,800	6,720	8,640
Natural Gas (GJ)	810	1,296	1,944	2,592

## 13 ENERGY EFFICIENCY MEASURES

Elf Farm Supplies has progressively modified its operations over time to increase the quality of the product, improve efficiency of production and minimise environmental impacts. One of the most fundamental gains from this process has been a reduction in the time taken to process a batch of substrate. This has reduced the cost of production and in particular reduced energy consumption per tonne of substrate.

The Company currently utilises various technologies and techniques to monitor and improve the efficiency of energy consumption on site.

Projects completed since June 2009 include:

- D Energy efficient Powerpax chillers complete with supervisory control system - This system regulates the chillers, pumps and cooling towers to ensure the lowest cost of chilled water is achieved. The system only supplies the amount of water necessary for plant usage. The system also provides live monitoring of its power usage.
- D Variable speed drives - The majority of plant fan and pump drives are controlled by frequency drives (there are over 70 VSDs installed on the site). The frequency drives control electric motors to ensure smooth speed ramp up and down. The use of VSDs result in low inrush currents and less reactive power generation.
- D Production batching - Elf Farm Supplies has split the production schedule to process two batches of compost per week. This step has resulted in lower peak electrical loads on any one day.
- D Power Factor correction - equipment has been installed to minimise the amount of Reactive Power generated at the site. Elf Farm Supplies has improved its power factor from 0.86 to 0.99, a gain resulting in lower plant electricity requirement and reduced energy losses in the supply system.
- D Phase 2/3 tunnel exhaust damper technology - Elf Farm Supplies has developed an automated method of controlling tunnel pressure. This has been achieved by monitoring and controlling the exhaust dampers. As a result, tunnels no longer experience high energy losses due to large surges in tunnel pressures. This design is now being installed in new plants around the world.
- D Phase 2/3 tunnel cool down procedures have been staged to minimise peak cooling requirements.
- D The new blocking shed cool room utilises chilled water from the efficient plant chiller system rather than costly air conditioning units.

- D The process computer systems prioritise the use of cooler outside (fresh) water before using chilled water to cool the Phase 2/3 tunnels. Again the result is lower electricity usage.
- D Phase 1, 2 and 3 process control monitoring has been updated with the latest software to improve control and reporting functions.
- D Electricity bills are now reviewed monthly and gas bills quarterly to monitor energy consumption. Daily electricity data is also available from the electricity supplier.

Projects underway or being investigated include:

- D Level 3 supervising control for further streamlining of the Process Computers with the chilled water system.
- D Blocker oven temperature control to be improved.
- D Investigate alternative product cooling techniques including the possible combination of liquid nitrogen and cool room cooling methods.
- D Explore the viability of using heat energy from the Phase 2/3 building loft area to improve the visibility in Phase 1 and pre-wet workspaces.
- D Investment in smart electricity meters to provide live power usage.
- D Review pre-wet and Phase 1 material movements with a view towards future designs to minimise energy requirements.

The Company will continue to monitor advances in the industry world wide and experiment locally with new technology and techniques to improve production. As before, savings in energy consumption will invariably accompany improvements in processing.

In addition, driven by increasing costs for energy, the Company will undertake the following steps:

- D periodically review each of the processes at the substrate plant to consider how these can be accomplished with greater energy efficiency; and
- D raise awareness of energy efficiency among employees, clients and suppliers.

## **14 RENEWABLE ENERGY**

### ***1.4.1 Solar Power Generation***

Various buildings within the substrate plant have a large roof area which could potentially be utilised for solar panels, subject to structural assessment. Elf Farm Supplies will periodically review the cost effectiveness of solar power generation, particularly in light of the increasing cost of electricity. Should solar power generation prove to be cost effective, considering all relevant factors, the company will move to introduce solar panels at the plant.

### 1.4.2 *Low Grade Heat*

Air that has been warmed during the Phase 1 composting process is exhausted via the chimney. The potential to capture some of the energy from the exhausting air and use it within the plant is not considered viable for the following reasons:

- D there is limited need for low grade heat at the plant, largely confined to heating the office space in winter;
- D removing energy from the exhausting air may change its dispersion characteristics and hence invalidate odour projections and may alter the efficiency of the bioscrubber; and
- D it would be difficult to retro-fit a heat exchanger in the existing gas flow path either before or after the bioscrubber.

The company does however, use the heat generated in the Phase 1 tunnel roof to warm water that is pumped through the working floor of the Phase 1 building to help improve visibility. As indicated above the company is investigating utilising low grade heat from the loft of the Phase 2/3 tunnel building.

## 1.5 MONITORING

Elf Farm Supplies will compile energy consumption data annually. Annual energy results will be reviewed against annual production data to confirm that energy efficiency is being maintained or improved. Should a decline in efficiency be revealed, the reason for the decline will be investigated, having regard to the introduction of new plant included in the staged expansion.

Should the investigation reveal that part of the process is becoming less energy efficient, potential improvements will be considered and implemented if cost effective.

This plan will be periodically reviewed when the environmental management system for the substrate plant is reviewed.

## Appendix G

# RELEVANT LEGISLATION





## RELEVANT LEGISLATION

Legislation, relevant to environmental management	Purpose, relevant to the project	Requirements applicable to construction
<i>Contaminated Land Management Act, 1997</i>	Establish a process for investigating and where appropriate remediating land that the EPA considers to be contaminated significantly enough to require regulation.	Filling to take place during construction will use material certified to be free of contamination. Construction will not result in the site becoming contaminated land.
<i>Environmental Planning and Assessment Act, 1979</i>	Promote orderly and economic use and development of land; provide for management, development and conservation of resources, protection of the environment and other related matters	Project approval was granted on 11 January 2012. The Act requires that conditions of approval be observed and a construction certificate be obtained from a certifier before commencing building construction.
<i>Heritage Act, 1997</i>	To promote understanding and conservation of the State's heritage; to identify and register items of the State's heritage and provide for their protection	There are no objects or places on the substrate plant site that are listed on any relevant heritage register. No relics were found during a survey of the affected part of the site.
<i>National Parks and Wildlife Act, 1974</i>	Conservation of places, objects and features of significance to Aboriginal people. Conservation of nature.	A person must not harm or desecrate an object that the person knows is an Aboriginal object unless the work is consistent with a permit obtained for the purpose. A person must not harm protected fauna except as essential for carrying out the project.

Legislation, relevant to environmental management	Purpose, relevant to the project	Requirements applicable to construction
<i>Noxious Weeds Act, 1993</i>	To reduce the negative impact of weeds on the economy, community and environment of New South Wales	If a notifiable weed is on the land, the local control authority must be notified. Any noxious weeds must be prevented from spreading or becoming established.
<i>Protection of the Environment Operations Act, 1997</i>	To protect, restore and enhance the quality of the environment in New South Wales	The substrate plant operates under an environment protection licence. The licence regulates all activities on the site, including construction.
<i>Threatened Species Conservation Act, 1995</i>	To prevent the extinction and promote the recovery of threatened species, populations and ecological communities	A survey of the site found there is no remnant native vegetation and no habitat useful to native fauna on the site. The project does not constitute a threat to threatened species, populations or ecological communities
<i>Waste Avoidance and Resource Recovery Act, 2001</i>	To minimise the consumption of natural resources and the final disposal of waste by encouraging the avoidance of waste and the reuse and recycling of waste	There are no specific requirements relevant to construction work on the site.