

ELF FARM SUPPLIES
MUSHROOM SUBSTRATE PLANT, MULGRAVE

ENVIRONMENTAL MANAGEMENT STRATEGY

Issue 2.1

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ENVIRONMENTAL MANAGEMENT STRATEGY

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Appendices

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- B. ENVIRONMENT PROTECTION LICENCE
- C. WATER MANAGEMENT PLAN
- D. NOISE MANAGEMENT PLAN
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1 INTRODUCTION

1.1 BACKGROUND

A mushroom substrate plant has operated at 108 Mulgrave Road, Mulgrave since 1981. The operator of the facility was known as Elf Mushrooms Pty Ltd until 1997 when the company changed its name to Elf Farm Supplies Pty Ltd (EFS). The location of the facility is shown on Figure 1. A description of the site is presented in section 2.

The plant operated for 31 years under a series of development consents issued by Hawkesbury Council. On 11 January 2012 the Minister for Planning granted project approval for expansion and continued operation of the substrate plant (project 08_0255). Consistent with that approval all previous development consents have been surrendered. The project approval has since been modified more than once. The operation is licensed by the Environment Protection Authority (EPA).

The current approval for project 08_0255 and EPA licence No 6229 are referenced in Appendices A and B and available on the website.

Table 1 lists the project approvals relevant to the mushroom substrate plant at Mulgrave:

Application	Date of Application	Date of Approval
Project 08_0255	December 2010	January 2012
MOD 1	February 2015	March 2016
MOD 3	May 2018	March 2020

1.2 PURPOSE OF THE EMS

This Environmental Management Strategy (EMS) provides the strategic framework for environmental management of the substrate plant. The objectives of the EMS include:

- specify environmental requirements and mitigation measures for plant operation in accordance with the project approval and environment protection licence;
- enable EFS to ensure compliance with environmental legislation; and
- promote best practice environmental management.



FIGURE 1 Substrate Plant Location

The EMS does not apply to construction work at the substrate plant, including new work approved in project approvals. A separate Construction Environmental Management Plan (CEMP) is applicable to construction work.

The EMS is an overarching document which details the environmental requirements for operating the site. It comprises this document and other referenced strategies, plans and programs required under the project approval, the latest approved versions which are available via the EFS website www.elfarmsupplies.com.au. This document contains specific requirements extracted from the detailed management plans prepared in accordance with conditions of approval.

The EMS does provide a framework to assist EFS to develop and implement an EMS for the site in accordance with AS/NZS ISO 14001.

1.3 CONTENT

The EMS has been prepared consistent with Condition 1 of Schedule 5 of the project approval for expansion of the substrate plant as amended by MOD 1 and MOD 3. Condition 1 of Schedule 5 is as follows:

1. *The Proponent must 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 Secretary 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.*

Other conditions in the project approval that specify content of the environmental management strategy are included in Schedule 3 of the modified approval. These conditions are reproduced below and addressed in the EMS.

4. *The Proponent must prepare and implement an Odour Management Plan for the Substrate Plant site to the satisfaction of the Secretary. This plan must:*
 - (a) *be prepared in consultation with the EPA by a suitably independent, qualified and experienced expert whose appointment has been endorsed by the Secretary;*
 - (b) *be submitted to the Secretary 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*

9. *The Proponent must prepare and implement an Energy Efficiency Plan on the Substrate Plant site to the satisfaction of the Secretary. This plan must:*
 - (a) *be submitted to the Secretary 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.*

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

Conditions 17A and 17D required that the water management plan be updated to include the works of MOD 1 and MOD 3 respectively.

22. *The Proponent must prepare and Implement a Noise Management Plan for the Substrate Plant site in consultation with EPA to the satisfaction of the Secretary. The Plan must be submitted to the Secretary 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.*

Condition 22A required that the noise management plan be updated to include works associated with MOD 1 and a revised monitoring protocol.

Other conditions in Schedule 3 of the project approval relevant to plant operation specify particular requirements which are encompassed in the environmental management procedures detailed in this document.

Environmental Assessment reports were prepared for the original project application (Perram & Partners 2010), the MOD 1 application (Perram & Partners 2015) and the MOD 3 application (Perram & Partners 2018). For each of these reports, studies were undertaken to assess potential impacts and prescribe suitable management or mitigation measures. Mitigation measures were summarised in the Statement of Commitments included in the 2010 document and subsequently revised and updated through the assessment process for MOD 1 and MOD 3. The Statement of Commitments has been incorporated into the project approval. The section relevant to operation of the substrate plant is reproduced in *Appendix A*. All relevant mitigation measures from the Statement of Commitments have been included in the EMS.

The *Guideline for Preparing Environmental Management Plans* (DoPI 2004) was consulted in preparing this document.

1.4 VALIDITY

Conditions 4, 17 and 22 require consultation with either EPA or NOW or both. In satisfaction of these requirements draft copies of relevant sections the EMS were forwarded to the Office of Environment and Heritage and the NSW Office of Water for comment at the time of first preparation.

The EMS is a perpetual document, capable of being amended and updated as needed to take account of changes occurring from time to time. Such updates will enable the operator to keep the document relevant to changing circumstances including:

- future planning approvals or modifications issued pertaining to operation or further development of the plant;
- periodic review of the conditions of the environment protection licence;
- modified practices based on monitoring results, annual reviews, incidents, audits, revised EPA guidelines or emerging technology;

The EMS will be reviewed following the occurrence of a trigger event, as explained in section 8.2.2. Any resulting amendment will take effect when approved by the Secretary.

2 SITE OVERVIEW

2.1 PROPERTY DESCRIPTION

The property which the substrate plant is located on comprises lots 13 and 14 DP 1138749. The property has an area of about 12.4 hectares and includes Lot 14 and part of Lot 13. The site is rectangular in shape with a small frontage to Mulgrave Road, as shown on *Figure 1*. The remainder of Lot 13 is managed as farmland.

2.2 ENVIRONMENTAL CHARACTERISTICS

2.2.1 Topography and Drainage

The substrate plant is located in the South Creek flood plain, approximately 200 metres from the eastern bank of South Creek. Natural ground level in the vicinity slopes gently towards the creek, ranging in height from about 9 to 16 metres AHD. The site has been filled to a level of approximately 16 metres AHD to afford protection against the majority of flood events.

The southern boundary of the site adjoins a railway embankment. There is a narrow depression between the adjoining filled lands, draining towards South Creek.

2.2.2 Geology and Soils

The combined flood plains of the Hawkesbury River, Rickabys Creek and South Creek contain a fluvial soil landscape. This material extends onto the property and comprises deep brown sands and loams overlying shales of the Wianamatta Group.

The substrate plant has been constructed on fill to increase its elevation and thereby reduce the frequency of flooding. The soil material within the developed area of the site is fill approved by the EPA for the purposes of raising the surface level.

2.2.3 Climate

The nearest source of climactic information for the Mulgrave area is Richmond Air base, where records have generally been kept for over 70 years.

Table 2.1 presents a summary of significant data from the Richmond recording station.

Table 2.1 TEMPERATURE, RAINFALL, DEW, WIND AND EVAPORATION

Item	J	F	M	A	M	J	J	A	S	O	N	D
Mean Daily Max. Temp. (°C)	29.6	28.6	27	23.9	20.3	17.6	17.2	18.8	21.6	24.5	26.8	28.7
Mean Daily Min. Temp. (°C)	17.4	17.4	15.5	11.8	7.9	5.1	3.6	5	7.5	11	13.7	15.9
Mean Rainfall (mm)	93.3	106	92.1	70.3	58.8	56.4	35.9	45.8	40.2	64.1	76.1	71.7
Mean No of Rain days	10.9	11.1	11.2	9.1	8.5	8.1	6.4	7.5	7.6	9.6	10.3	9.9
9am Mean Dew Point (°C)	16.7	17.2	15.6	12.7	9.3	6.4	4.7	5.7	7.6	10.3	12.4	14.7
3pm Mean Dew Point (°C)	15.5	16	14.4	11.6	9.3	6.9	5	4.6	6	8.7	11.1	13.3
Mean 9 am wind speed (km/h)	5	4.8	4.7	4.1	4	4.4	4.7	6	6.7	8.2	7.7	6.4
Mean 3 pm Wind Speed (km/h)	13.5	12.6	11.9	10.7	9.2	10.1	11.5	14.6	16.5	16.3	16.7	15.4
Highest recorded wind gust (km/h)	106	115	122	88.9	96.5	109	126	111	117	115	109	135
Mean Daily Pan Evaporation (mm)	6.3	5.4	4.4	3.3	2.1	1.8	2	3.1	4.3	5.4	5.9	7

Wind Data

Hourly wind data has been collected from the site of the substrate plant for more than a decade. On an annual basis the predominant winds are from the NNE and SSW.

2.2.4 Hydrology

The substrate plant is located within the catchment of South Creek at the upper edge of the flood plain. There are farm dams on the property receiving natural drainage and directed runoff from building roofs and non-operational areas of the site. Water collecting in the dams can be used for pasture irrigation. The primary water source for substrate production are licensed submersible pumps in South Creek. A small section of the building roof water drains to a culvert passing under the adjoining railway embankment, leading to a farm dam on the neighbouring property.

The site does not interact with groundwater as the production area of the plant has been erected on a concrete platform.

The 100 Year ARI (average recurrence interval) flood level is 17.3 metres AHD (Hawkesbury City Council). The substrate plant has been constructed on a platform raised to approximately 16 metres AHD and is designed to withstand occasional minor inundation. The plant has not been flooded since it was constructed in 1981, although the site been isolated floodwaters during this period.

2.2.5 Surrounding Land Use

Surrounding land use is illustrated on *Figure 1*. On its southern side the substrate plant mostly adjoins the Blacktown-Richmond Railway. Near Mulgrave Road, the southern boundary steps in to pass around a separate narrow allotment for the former station master's cottage, now abandoned and derelict. Mulgrave Station is about 100 metres from the property frontage. Mulgrave is a rural village with several houses clustered near the railway station. It is surrounded by rural land to the west, south and east. There is an industrial area immediately north of the railway station.

Most of the northern site boundary abuts the embankment of the elevated main road, Hawkesbury Valley Way. The remainder of the northern boundary adjoins another rural property. A sewage treatment plant is located about 700 metres to the north beside Mulgrave Road, with Windsor High School opposite.

Lot 13 extends westward to South Creek, although the substrate plant boundary is set back about 200 metres from the creek at the edge of the filled land. The balance of Lot 13 is a grassed paddock with a gentle slope to South Creek. This land is used for cattle grazing. On the western side of South Creek a strip of higher land beside the railway line has been developed as a residential area. The closest residences in this estate are in Chisholm Place, about 500 metres from the substrate plant.

In addition to the substrate plant buildings, the site contains a residence near the Mulgrave Road frontage. Access to the substrate plant is obtained via a private roadway intersecting Mulgrave Road beside Hawkesbury Valley Way overbridge.

The nearest residences not associated with the substrate plant include:

- a rural residence on the adjoining property to the north;
- a rural residence on the market garden immediately south of the rail line;
- Mulgrave village to the south east; and
- Chisholm Place (part of Windsor residential area) to the west.

2.2.6 Existing Noise Levels

The Environmental Assessment for the project application (Perram & Partners 2010) included a noise assessment in which ambient noise levels were recorded in the vicinity of the site. The rated background level (RBL) and L_{Aeq} noise levels measured in March 2009 are summarised in *Table 2.2*. Background noise measurements were not adversely affected by wind speeds averaging greater than five metres per second or rain.

Table 2.2 MEASURED RBL AND L_{Aeq} NOISE LEVELS

Location	Rated Background Level (L_{A90})			Ambient L_{Aeq} Level (L_{Aeq})		
	Day	Evening	Night	Day	Evening	Night
Chisholm Place (west)	41	42	39	57	58	55
Rural dwelling (north)	42	42	38	53	57	53
Rural dwelling (south)	42	43	37	53	49	46

NOTE: Day: 7 am to 6 pm (Monday to Friday), 8 am to 6 pm (Sunday and public holidays)
 Evening: 6 pm to 10 pm
 Night: 10 pm to 7 am (Monday to Friday), 10 pm to 8 am (Sunday and public holidays)

2.2.7 Natural Vegetation and Fauna

The Environmental Assessment for the project application (Perram & Partners 2010) included a flora and fauna study of the area to be affected by construction and operational activities. The assessment found that due to previous land uses, the site contains no remnant vegetation and almost no habitat attributes that would attract native fauna.

2.2.8 Landscaping and Screening

Native trees and shrubs have been planted around the substrate plant to provide screening between the developed part of the property and surrounding properties. Screening vegetation is most effective on the northern side, limiting viewing opportunities into the site from Mulgrave Road and Hawkesbury Valley Way.

Landscaping was enhanced consistent with a landscape plan as required in the MOD 1 approval.

2.2.9 Archaeology and Heritage

The Environmental Assessment for the project application (Perram & Partners 2010) included an archaeological and cultural heritage assessment. This investigation did not identify any Aboriginal sites or relics. The study concluded that previous rural land uses and subsequent re-contouring reduced the likelihood of finding intact archaeological cultural deposits.

2.2.10 Access

The site access road joins with Mulgrave Road about 100 metres north of the rail level crossing. Vehicles accessing the site normally travel via Mulgrave Road and Hawkesbury Valley Way. An alternative connection to the site is via Windsor Road and Mulgrave Road.

2.3 APPROVED DEVELOPMENT

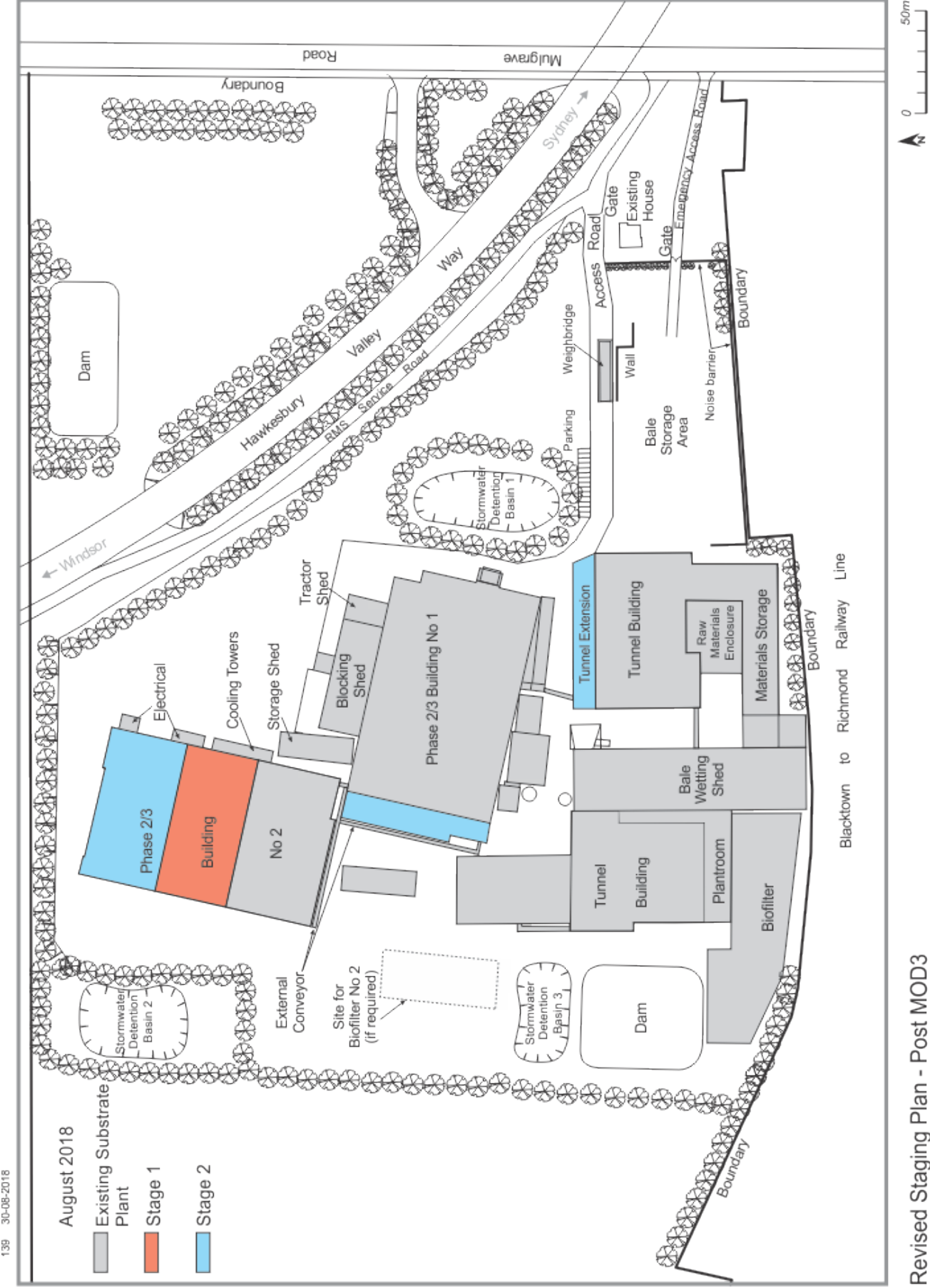
The 2012 project approval and subsequent modifications have permitted further development works on the site, some of which have been completed. The plant development is being undertaken in stages to a design which has been modified in the subsequent approvals. Decisions to proceed further with approved works will be taken from time to time based on commercial considerations. Current thinking is that some of the approved works will not proceed, subject to approval of future applications to modify the project.

Approved development to be undertaken in stages is listed in *Table 2.3* and shown on *Figure 2*.

Table 2.3 STAGES OF EXPANSION AT THE SUBSTRATE PLANT

Stage	Development Works
1	MOD 3 works: • Expand the bale storage area and construct a noise barrier • Complete the stormwater management system
2	• Extend Phase 2/3 tunnel building No 2 with 9 additional tunnels
3	• Construct two additional Phase 1 tunnels; • Extend Phase 2/3 tunnel building No 2 with 16- additional tunnels; • Extend Phase 2/3 tunnel building No 1 with 3 additional tunnels (one planned to proceed)

Figure 2



3 MANAGEMENT RESPONSIBILITY

3.1 ORGANISATION STRUCTURE

The Board of Elf Farm Supplies Pty Ltd has ultimate responsibility for development and operation of the Mulgrave substrate plant. Mr Rob Tolson is the Managing Director. The Production Managers are responsible for day-to-day operation of the plant, reporting to the General Manager.

When a Production Manager is absent for any significant length of time (for example, holidays), an acting manager is appointed, assisted as required by the General Manager.

While construction work is underway, a Construction Manager may be present on site to supervise and co-ordinate the work undertaken by the construction team.

In addition, a network of contractors work at the site providing services to the plant on a needs basis.

3.2 CONTACT DETAILS

The 24-hour feedback line number is **1800 155 079**

3.3 ROLE RESPONSIBILITY AND AUTHORITY

Plant personnel are multi-skilled, undertaking a number of tasks during the course of their work. The formal management roles of staff at various levels is summarised in *Table 3.1*.

Table 3.1 ROLE, RESPONSIBILITY AND AUTHORITY

Task	Board (Managing Director)	General Manager	Production Managers	Operational Staff	Administration
Plant Development	Assist General manager to set objectives and develop plans, provide industry experience, review detailed planning and approval processes.	Assess future needs of the plant, develop plans, obtain approval, then coordinate and oversee construction projects to achieve overall objectives.	Assist with long term planning; undertake minor construction projects.	Assist with minor construction projects as required.	Document Management and communications
Substrate Production	Review performance of the plant, assist General Manager in market development.	Develop markets for substrate; overview operation of the plant to ensure production objectives are achieved.	Plan and supervise plant operation on a daily and longer term basis to produce the required quantity of quality substrate; operate plant for maximum efficiency	Undertake day to day operational tasks as required	Under take day to day administration tasks
Environmental Management	Independently review indicators of environmental performance, confirm compliance with environmental objectives and approvals.	Approve the EMP and any subsequent amendments; ensure that environmental objectives are understood; monitor plant operation to confirm compliance	Program work and take corrective action as required to maintain plant operations within environmental objectives set down in this EMP. Respond to all incidents and complaints.	Undertake work within guidelines set down by the Production Manager.	Document management
Community Liaison	Assist with community relations as required.	Assist the Production manager as required; participate in all forums where community comment on the plant is expected.	Work with community to ensure that an adequate response is given when environmental issues are raised.		

Task	Board (Managing Director)	General Manager	Production Managers	Operational Staff	Administration
Induction and Training		Ensure that an adequate induction and training program is given to staff	Provide induction and training for all staff. Retain records of all training given.	Attend training sessions conducted by the Production Manager; if unsure about any aspect of the work, ask the Production Manager.	Administration staff training
Complaints Register		Review complaints register. Ensure procedures are followed. Review effectiveness of corrective action. Ensure records are available for audit.	Record details of any complaints and investigate. Provide a response to every complaint received. Decide and implement corrective action.		Document Management and record keeping
Monitoring		Ensure that the monitoring program is adequate and effectively implemented. Review all results with the Production Manager. Initiate audits.	Arrange for monitoring to be carried out in accordance with the program. Review results with the General Manager.		Document management
Recording		Maintain records of all communications with approval and regulatory bodies. Ensure that monitoring results are forwarded when required.	Maintain records of plant operations, including quantities of materials received and dispatched and all monitoring results.		Document management

Task	Board (Managing Director)	General Manager	Production Managers	Operational Staff	Administration
Emergency Action		Intervene at any time where there is an unacceptable risk to safety, or significant environmental damage may occur. Review procedures as required.	Intervene at any time where there is an unacceptable risk to safety, or significant environmental damage may occur. Arrange remedial measures to overcome the emergency.	Advise the production manager of any suspected risk to safety, or any likelihood of significant environmental damage. Take action as required to prevent emergency situations arising.	Document management and record keeping

3.4 STAFF TRAINING

All staff employed at the Mulgrave substrate plant are trained in their responsibilities. Any new operational personnel are given initial training by the manager of the area they are going to work either Ph I Production Manager or Ph II/III Production manager.

New office personnel are trained by the Administration manager.

4 PLANT OPERATION

4.1 PRODUCTION LIMIT

Prior to the approval of Project 08_0255, the quantity of substrate dispatched from the plant was limited by Hawkesbury City Council development consent MA623/02. The consent allowed a maximum production rate up to 1000 tonnes of Phase 1 substrate per week.

The project approval superseded the Council consent, setting a final production limit of 3200 tonnes of Phase 1 substrate per week with a maximum dispatch of 1920 tonnes of Phase 3 substrate per week (condition 6 of Schedule 2). Condition 6 also requires that separate approvals be obtained from the Secretary to increase production in stages. The preconditions for applying for sequential approvals are shown in *Table 4.1*.

Table 4.1 PRECONDITIONS FOR INCREASED PRODUCTION

Stage	Preconditions	Allowable application for increase	Approved
1	• Odour management plan prepared and implemented; • Independent odour audit prepared and submitted.	1,600 tpw	July 2013
2	• Producing Phase 1 substrate at a rate between 1500 and 1600 tonnes per week • Independent odour audit prepared and submitted during this level of production	2,400 tpw	October 2019
3	• Producing Phase 1 substrate at a rate between 2300 and 2400 tonnes per week. • Independent odour audit prepared and submitted during this level of production	3200 tpw	

4.2 PRODUCTION PROCESS

Elf Farm Supplies produces mushroom substrate. The steps in producing substrate are described below.

4.2.1 Raw Materials Storage

Mushroom substrate is manufactured from recycled agricultural materials, including wheaten straw, poultry manure, stable bedding, gypsum and other nitrogen rich products. Materials are delivered by road as required.

Solid raw materials, other than straw, are stored under cover to maintain a dry state. Straw bales are stored in the open bale storage area at the front of the property.

4.2.2 Bale Wetting

Straw is softened by watering prior to use in the composting process. Straw bales are spray watered in the bale wetting area for several days to remove the waxy layer and increase water content. Water draining from the bales is collected, filtered, aerated and recirculated via the sprays. Make-up water is continually added to the process as the straw bales soak up to four times their dry weight.

4.2.3 Pre-Wet

Wetted bales and other ingredients are transferred and blended on a production conveyor line and transported to a bale-wetting bunker. Re-blending occurs by removing product from a bunker and adding back into another bunker, via the hopper/conveyor production line, whilst recycled water and other raw materials are continuously added.

The pre-wet process takes up to one week. Bunkers are used for both pre-wet and Phase 1 processing. The process is computer controlled. Each bunker has a dedicated air intake and fan system. Air is recirculated through the floor of each bunker to aerate the composting material.

4.2.4 Phase 1 Process

Phase 1 composting is a high-temperature process taking place in bunkers for up to two weeks. Fresh air is supplied underneath the bunkers to control substrate temperatures. The substrate is blended a number of times and has water added to adjust its moisture content. The finished phase 1 product is loaded in the hopper for transferal by conveyor to the phase 2 process.

The process is computer controlled. Each bunker has a dedicated air intake and fan system.

4.2.5 Phase 2 Process

Both phase 2 and 3 of the process involves the substrate being stored in tunnels which are designed to enable the circulation of air through the substrate.

Incoming phase one substrate is loaded into the tunnels using a series of conveyors. The substrate is placed on top of a pulling net, which enables subsequent emptying of the tunnel.

The process is computer controlled. Each tunnel has a dedicated air intake and fan system with air being passed through a series of filters to remove contaminants .

The phase 2 process comprises temperature levelling, pasteurisation and conditioning stages. Phase 2 is designed to kill unwanted pathogens and to create an ideal nutrient and biological medium for mycelium development (from which mushrooms grow).

4.2.1 Phase 3 Process

After phase 2 is complete, the substrate is cooled down, and mushroom spawn is added to the substrate. The spawning operation is undertaken in a building which has been cleaned and disinfected. It is imperative that hygienic conditions are created to prevent infection of the substrate from unwanted pathogens that can impede mushroom growth.

The phase 3 process is fully computer controlled to create environmental and biological conditions that maximise mushroom mycelium development.

Phase 2 and phase 3 operations take three to four weeks of processing.

4.2.2 Product Delivery

Phase 3 substrate is loaded indoors and transported in bulk using trucks. Some of the phase 3 substrate is further processed via a blocking machine. To maintain hygiene standards trucks are cleaned prior to entering the dispatch area. Trucks are normally loaded and dispatched prior to lunch time each day to allow full rooms to be filled at the mushroom farms before days end.

The length of the process from commencement of pre-wet to ship out is approximately six to seven weeks. Mushroom harvesting then commences a further two weeks after delivery of the material to the farm.

4.2.3 Hours of Operation

The substrate plant operates 24 hours per day, seven days per week. Refrigeration plant and ventilation/aeration equipment operate continuously to maintain essential conditions for the process. Most outdoor operations are scheduled for daylight hours.

4.2.4 Operational Plant and Equipment

Mobile plant used at the facility includes front end loaders, trucks, tractors, forklifts, access equipment and blending machines. Fixed mechanical plant includes conveyors, fans, pumps, generators, refrigeration plant, compressors and the like.

4.3 EXHAUST AIR MANAGEMENT

Exhaust air is continuously collected from the bale wetting building and the Phase 1 tunnel and workroom building. Air is also removed from Phase 2/3 tunnels during part of the Phase 2/3 process. Fans force the air through ammonia scrubbers and into the adjacent biofilter. The biofilter contains organic material to remove odours.

5 ENVIRONMENTAL MANAGEMENT

Management of environmental performance is described in this EMS by setting objectives, identifying performance requirements, specifying strategies and actions and providing mechanisms for monitoring, reporting and taking corrective actions.

Environmental issues and mitigation measures have been applied from the Environmental Assessment reports prepared for the project and subsequent modifications (Perram & Partners 2010, 2015 and 2018), the project approval as modified (see *Appendix A*) and the specific management plans prepared as required by the project approval and referred to in appendices *C* to *F*.

5.1 WATER MANAGEMENT

5.1.1 Introduction

A water management plan for the substrate plant is referenced in *Appendix C*. The tabulated plan below is summarised from the detailed plan, the former site EMP and the environmental assessment reports, having regard to condition 14 in schedule 3 of the project approval. Condition 14 specifies that the Proponent must comply with section 120 of the POEO Act except as expressly provided by an environmental protection licence. Section 120 of the POEO Act makes it an offence to pollute waters.

5.1.2 Water Management Protocols

Potential Issues	• Escape of operational water from the site • Stormwater carrying sediment or nutrients to receiving land or waters • Excessive water consumption
Potential Sources	• Site operations
Objective	• Manage operational water to ensure all water is consumed and there is no escape to the environment • Minimise water consumption on the site; • Manage stormwater to remove sediment and nutrients
Design features	• Water sources: – Submersible pumps in South Creek

	– Bore water – Sydney Water supply – Rainfall runoff from within the plant area • Operational water: – Straw bales are wetted by sprayed water from the water recycling pit, with surplus water draining back to the pit; – Bale wetting, Prewet and Phase 1 processing primarily uses recycled water and creek water; – Phase 2 and 3 process use the Sydney Water supply; – washdown water and drainage from all operational locations in the plant flows to the water recycle pit. • Stormwater drainage: – roof water from major structures is variously directed to detention basins, to the northeast farm dam, to a basin west of the site or through a culvert beneath the railway to a farm dam on the neighbouring property; – surface water from non-operational areas and roadways on the site is directed to the stormwater detention basins; – surface water from the Phase 1 operational area of the site including the bale wetting area drains to the water recycling pit; – The water recycling pit has capacity to hold the first flush of stormwater from operational areas; – Water can be extracted from the recycling pit to the balance tanks should the pit contain water above its normal operating range; – Should the recycling pit become full during a prolonged rainfall event, an inlet diverter directs further runoff to a farm dam dedicated for this purpose; • The farm dam immediately west of the plant is for emergency use only. It receives water from the recycling pit diverter, biofilter drainage or direct rainfall. Water collected in the farm dam is used for irrigating a dedicated paddock.
Actions / Controls	• Utilise water in accordance with the following priority: (i) Water recycling pit and associated balance tanks; (ii) 120,000 litre storage tank, containing water from South Creek; (iii) Bore supply (when of suitable quality); (iv) Sydney Water service; • Apply process water only at locations where there is a sealed operational surface so any spillage or surplus can be diverted to the water recycling pit;

	• Whenever the water recycling pit contains water above its normal operating range and as soon as possible following rainfall, extract water to the balance tanks to restore holding capacity for stormwater; • Irrigate stormwater from the farm dam west of the site as first priority whenever water collects in the dam, following the irrigation procedure described in the water management plan; • Alternate the usage of pumps in the water recycling pit to verify that both remain operational; • Dry clean the operational areas of the site daily (if needed) to minimise the quantity of solid materials able to be washed into the water recycling system.
Maintenance	• Clean the solids filter on the input to the recycling pit; • Remove any solids or sludge from the recycling pit at intervals not greater than fortnightly; • Remove accumulated sediment or sludge from the detention basins when required; • Inspect and maintain vegetation in the reed beds and bio-retention basin as required, including harvesting and desludging, should this become necessary.
Performance Indicators	• Stormwater system observed to be functioning correctly with no blockage or overflow; • Farm dam west of the site maintained effectively empty.
Monitoring	• Record of water consumption; • Visual inspection of stormwater system, reed beds and detention basins.
Corrective Action / Reporting	• If a complaint is received the procedure described in section 6 is to be followed. • The Production Manager is to record any incidents or issues with regard to water management.

5.2 OPERATIONAL NOISE

5.2.1 Introduction

An operational noise management plan is referenced in *Appendix D*. The tabulated plan below is summarised from the detailed plan, the former site EMP and the environmental assessment reports, having regard to conditions 19 to 22B in schedule 3 of the project approval. Condition 19 specifies operational noise criteria that are reproduced in the Operational Noise Management Plan. Condition 20 confirms that the hours of operation of the plant are continuous.

5.2.2 Operational Noise Management Protocols

Potential Issues	Noise associated with plant operations affecting nearby residents and farm workers.
Potential sources	- Mobile plant (front end loaders, trucks); - Fixed mechanical plant (compressors, pumps, fans, conveyors); and - Trucks accessing the site both within the site and on the external roads.
Objective	- Manage day time noise to within prescribed limits for all neighbouring premises (Condition 19); and - Manage night time noise to within prescribed limits for residential neighbours (Condition 19)
Design features	- Buildings designed in accordance with noise attenuation specifications recommended in the noise management plan; - All stationary noise making plant and equipment such as fans, pumps and conveyors are enclosed within buildings or structures; - Front end loaders operate primarily indoors, except when accessing straw bales in the bale storage area; - After straw bales and ingredients are moved into the bale breaking building, all bale wet, pre-wet and Phase 1 activities are carried out indoor; - The MOD 3 approval provided for construction of a noise wall on the eastern and southern sides of the bale storage area to reduce noise transmission. Until the noise wall is complete a barrier of stacked straw bales is maintained along the southern boundary; - Phase 2 and 3 tunnels with their loading and unloading areas are fully enclosed within large buildings; and - acoustic design input was obtained prior to selection of plant and building structures, fittings and plant mountings.
Actions / Controls	- Adopt <i>best management practice and best available technology economically achievable</i> as encouraged by EPA. - Instruct truck drivers to operate trucks on-site at less than 20kph and to switch off idle plant; - Fit mobile plant with low level or broadband 'quacker' reversing alarms; - Include in site inductions and personnel/contractor training correct use of plant and equipment to minimise noise impacts; - Arrange for trucks to travel in a forward direction throughout the site and minimise reversing or manoeuvring where possible; - Encourage drivers not to use engine exhaust brakes at night; - Limit night time truck movements to a maximum of eight movements per hour; and

	• Ensure that all building doors are kept closed when not in immediate use.
Maintenance	• Inspect mobile plant and stationary equipment to ensure that the installed noise suppression systems are functioning as intended; and • Maintain and repair equipment where necessary to meet original specifications for noise attenuation.
Performance Indicators	• Complaint data.; and • After plant modifications, monitoring results to show compliance.
Monitoring	• Visual and aural inspections when vehicles and items of plant arrive on site; and • Site attended noise monitoring in accordance with the monitoring program (section 7.3).
Corrective Action / Reporting	• If a complaint is received the procedure described in section 6 is to be followed; and • The Production Manager is to record any incidents or issues with noise.

5.3 ODOUR

5.3.1 Introduction

The detailed odour management plan is referenced in *Appendix E*. The tabulated plan below is summarised from the detailed plan, the former site EMP and the environmental assessment reports, having regard to conditions 2, 4, 4A and 4B in schedule 3 of the project approval. Condition 2 specifies that the Proponent shall not cause or permit the emission of offensive odours (as defined under Section 129 of the POEO Act) from the site. Conditions 4, 4A and 4B specify requirements for the odour management plan.

5.3.2 Odour Management Protocols

Potential Issues	• Odour associated with plant operations breaching EPL.
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Potential sources	• Site operations, in particular: – Raw materials storage; – Bale wetting hall; – Pre-wet and Phase 1 Working hall; – Phase 2 filling and pasteurising operations; – Biofilter; – Water recycle pit; – Dam.
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Objective	• Manage all aspects of operations to keep odour emissions as low as possible always meeting the requirements of the environment protection licence.
Design features	• Fully enclosed processing areas for all potentially odour-generating operations • All extracted air is processed through the exhaust air treatment plant incorporating ammonia scrubbers and biofilter; • An air-under system is installed in the bale wet, pre-wet building and in all Phase 1 tunnels to manage oxygen levels in the composting material; • Computer controlled fans to maintain optimum air supply and extraction; • Enclosed conveyors transport substrate to Phase 2 tunnels; • 24/7 monitoring systems to detect any faults and send an alarm to the Duty Manager.
Actions / Controls	• Clean up any raw materials spillage on a daily basis; • Clean the screens located in the water drains to minimise solids entering the recycle pit; • Remove solid material from the water recycle pit screen daily when water is flowing to the pit; • De-sludge the collection pit (if sludge is present) at least fortnightly and keep a record; • Keep doors to buildings closed when not in use; • Regular visual checks and maintenance of buildings, conveyors, ductwork; • Operate the exhaust air management equipment to comply with the EPL;

Maintenance	• Maintain the ammonia scrubbers to preserve the design pressure difference between the incoming and outgoing air; • Maintain the pH value and conductivity within the ammonia scrubbers; • Monthly visual inspection of all systems and external components associated with the ammonia scrubber; • Monthly inspection of the biofilter for moisture level, dry areas and leaks, the temperature of incoming air and the watering system.
Performance Indicators	• System performance parameters for the ammonia scrubbers and biofilter: – pressure drop across the scrubbers; – scrubber pH value and conductivity; – pressure at the biofilter inlet; – ammonia content at the biofilter inlet. • Annual Biofilter audit results
Monitoring	• Checks of system parameter in accordance with the monitoring program (section 7.2).
Corrective Action / Reporting	• If a complaint is received the procedure described in section 6 is to be followed. • The Production Manager is to record any odour incidents or issues

5.4 DUST

5.4.1 Design Features

The design of the plant assists to minimise any dust generation as follows:

- all roads and surfaces used for normal operations are sealed;
- dry ingredients are delivered and stored in a building with the exception of straw bales;
- non-operational surfaces are either stabilised hardstand, grass or landscaping;
- the array of buildings and screening vegetation provides wind breaks to limit the effects of wind at ground level within the plant.
- All operations are carried out within buildings.

5.4.2 Management Procedures

Substrate production is not a dusty operation by nature; hence it is not necessary to implement active dust control measures such as surface watering. Routine measures to assist in dust minimisation include:

- (i) Clean up any spillage on a daily basis;
- (ii) Maintain vegetation covering over unsealed ground surfaces within the plant that are not used for vehicle or equipment storage.

5.5 ENERGY EFFICIENCY

The energy efficiency plan for the site is referenced in *Appendix F*. Energy efficiency is continually practised at the substrate plant as a normal management measure for minimising the costs of substrate production. The plant uses diesel fuel, electricity and natural gas.

We monitor the latest developments in energy technology both in Australia and overseas. All new developments on site generally incorporate these technologies.

5.5.1 Design Features

Design features include:

- energy efficient chillers complete with supervisory control system;
- variable speed drives with frequency controllers for the majority of fan and pump drives;
- power factor correction and harmonic filtering equipment;
- automated damper technology on the Phase 2/3 tunnel exhausts;
- blocking shed cool room using chilled water;
- Plant wide process control monitoring; and
- Real time electricity usage data available.
- Mobile fleet regularly upgraded with the latest emission and fuel management technology.
- Energy efficient lighting.

5.5.2 Management Procedures

Management processes utilised at the plant for energy efficiency include:

- Staging Phase 2/3 tunnel cool down procedures to minimise peak cooling requirements;
- Reviewing electricity bills and gas bills to monitor energy consumption; and
- Review exhaust air treatment plant to reduce peak electrical loads when production schedules change.

5.6 ORGANIC MATERIALS

Mushroom substrate is manufactured from recycled agricultural materials, including wheaten straw, poultry manure, stable bedding, gypsum and other nitrogen rich products.

5.7 FUEL AND CHEMICALS

5.7.1 Fuel

The substrate plant stores fuel to enable machinery to be refuelled on site when required. Fuel storage and the refuelling process is managed to prevent any environmental contamination from spillage or escape of fuel.

Distillate is stored on site in two double-skinned tanks, one 55,000 litre tank above-ground located near the weighbridge, the other 12,000 litre underground near the phase 2 generator. The refuelling bowser is bunded to collect any spillage. The tank and bunding is in accordance with AS1692 and AS1940.

A portable bunded distillate tank (7000L) is stored near main phase 2 generator. This is filled during flood preparation/planning as a backup fuel source.

Spill kit and clean-up equipment and materials are on site to assist in cleaning up any spillage.

5.7.2 Chemicals

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 and AS 3780-2008 The Storage and Handling of Corrosive Substances.

The chemical stores kept at the site are listed on the Dangerous Goods manifest.

5.8 MAINTENANCE

Plant maintenance takes place according to manufacturers' requirements. As far as practicable, maintenance of a particular item of equipment is scheduled to take place at times when it is not required for service. There is built in redundancy for most items

of equipment so that substrate production can continue with some equipment out of service. Spare parts are kept on site to enable rapid repair or changeover when required.

Elf Farm Supplies has arrangements with maintenance contractors who will service equipment around the clock if necessary to enable quick resumption of normal operations.

5.9 CONTINGENCY PLANS

Significant events that may conceivably affect the plant include flood and fire. Minor events with some repercussions include equipment breakdown.

5.9.1 Flood

The plant is constructed on a filled platform raised to 16 metres AHD to provide protection from most floods. In the period since 1981 when the plant commenced operations, flood waters have not reached this level, although Mulgrave Road has been cut several times. The 100 Year ARI flood level is stated by Hawkesbury City Council to be 17.3 metres AHD.

During times of flooding, when water levels remain below the 12m (as measured at Windsor bridge) height of the substrate plant, normal operations may continue. Access from the site to Hawkesbury Valley Way would not normally be affected by flood water, but should Mulgrave Road be cut off beneath the overpass, an alternate access to the east is available via the level crossing and Railway Road.

Priorities

Should a major flood event occur with water levels exceeding the floor of plant buildings (>16m), site operations will be disrupted. Under these circumstances the following priorities will govern actions:

- (i) safety to personnel;
- (ii) securing and protecting the plant and equipment;

- (iii) minimising pollution or other environmental damage;
- (iv) maintaining substrate production.

Management Procedures

As the flood approaches $\leq 12\text{m}$:

- (i) contact suppliers to turn away any expected materials deliveries;
- (ii) dispatch as much usable substrate from the plant as possible;
- (iii) remove mobile machinery not required for emergency work, to high ground.

When the flood arrives, $\geq 12\text{m}$:

- (i) shut down and de-energise electrical equipment likely to become inundated;
- (ii) close doors to all process buildings to prevent floodwater mobilising substrate;
- (iii) move small items of plant and equipment (computers) to higher levels;
- (iv) remove remainder of mobile plant to higher ground;
- (v) evacuate staff should a threatening situation develop or when directed to do so by the State Emergency Services;

As flood waters recede:

- (i) test electrical circuits and re-energise when proven safe with first priority to fans and pumps;
- (ii) return mobile plant and clean deposited debris from the operational area of the site, adding suitable organic material to the pre-wet substrate and removing miscellaneous flotsam to landfill;
- (iii) separate saturated from dry ingredients and use saturated first;

- (iv) turn substrate as soon as possible to re-aerate;
- (v) clean the remainder of the site.

5.9.2 Fire

Substrate is not normally a fire risk owing to its high moisture content (64-77% moisture).

Potential sources of ignition include electrical equipment and mobile plant.

Design Features

The following equipment and processes are in place to minimise the risk of fire:

- (i) In the bale storage area, straw bales are laid out so as to allow access from all sides for firefighting;
- (ii) fire hoses are installed in all work areas;
- (iii) Hoses connected to the site's high pressure water ring main are located near the bale storage area;
- (iv) extinguishers are kept on mobile plant and in each work area;
- (v) staff are trained in fire procedures;
- (vi) smoking policy - smoking only in approved designated areas;
- (vii) Stored diesel fuel is segregated from bale storage and processing areas by maintaining minimum separation of 12 metres between the tank and stored bales to provide access for emergency vehicles. This will be delineated by a perimeter wall when constructed. In the interim staff have been trained to maintain 12 metre separation;
- (viii) the fuel dispensing area is sealed and bunded and has appropriate fire and hazard warning signs.
- (ix) weekly clean-up of loose straw from the straw bale storage area;
- (x) designated unloading area for straw trucks;

- (xi) parking of loaders a minimum of 12 meters from straw bales in the straw bale storage area;
- (xii) straw bales in the straw bale storage area are placed a minimum of 20 metres from buildings;
- (xiii) Fire Hydrant system across the site with 2x 250kL water storage tanks

Management Procedures

A fire management strategy has been prepared for the site identifying the following matters:

- procedures to follow in the event of fire;
- alarm systems;
- equipment available on the premises;
- responsibilities of personnel;
- fire brigade contact details;
- testing of firefighting equipment in accordance with Australian Standards;
- signposting for flammable storage and fire-fighting equipment; and
- staff training for fire emergencies.

5.9.3 Plant Failure

Substrate production is able to continue in the event of plant failure. *Table 5.1* indicates contingency measures that can be taken during identified abnormal operating occurrences.

Table 5.1 IDENTIFIED ABNORMAL OPERATING CONDITIONS

Condition	Response
Electricity supply failure	If likely to be sustained, use diesel generator to supply essential services.

Water supply failure	Use stored tank water and/or town water until creek supply restored.
Exhaust fan failure	Continue with parallel exhaust fans until repaired
Tunnel circulating fan failure	Install replacement fan (in store). If delayed, move substrate to a vacant tunnel with working fan, or move working fan from another vacant tunnel.
Collection pit pump failure	Utilise second installed pump. Replace faulty pump as soon as possible.
Control computer failure	Backups and manual control available throughout the plant
Conveyor failure	Spares kept on site
Ammonia scrubber pump failure	Take the scrubber unit out of service until pump repaired

5.10 LITTER

The raw materials used in substrate production are received with no noticeable contamination by unwanted substances. For example there is no paper or plastic entrained in the raw materials and hence there is not a problem on the site from escape of this type of litter. String used to bind straw bales is collected and placed in the waste bin when the bales are broken.

Normal housekeeping practices prevent accumulation of spilt substrate or raw materials on site. The following procedures are followed:

- (i) each day any spilt material is removed from operating surfaces of the plant;
- (ii) should any wind-blown litter enter the site, it is removed when noticed by the operator to maintain a tidy workplace.

5.11 PEST CONTROL

Pest control activities are maintained regularly throughout the site. Should a significant pest infestation occur, the services of a pest exterminator will be contracted.

5.12 SECURITY

The following measures are in place to maintain security of the site:

- (i) CCTV cameras monitor the site;
- (ii) all personnel entering the site along the access road are required to report to the office;
- (iii) vehicular access to the plant from Mulgrave Road is locked at times when the plant is unattended;
- (iv) the operating area is surrounded by a combination of buildings and a security fence to prevent entry to the site by foot
- (v) Buildings are alarmed is connected to a 24/7 monitoring service.
- (vi) Contractor security patrols

5.13 WASTE MANAGEMENT

The substrate plant produces very little waste. Raw materials are fully consumed in the process. Packaging waste generated on site is placed in bins that are emptied weekly. All steel and non-ferrous metal waste items are recycled via the scrap metals industry.

Ammonium sulphate produced in the ammonia scrubbers is used in accordance with a resource recovery order.

Management procedures include:

- (i) collect all waste into bins where it can be removed from the site;
- (ii) separate metallic waste into recycling bins for separate collection;
- (iii) collect any wind-blown litter from the property whenever it is noticed.

6 COMPLAINTS MANAGEMENT

The complaints procedure has been developed as part of the project's community consultation strategy. The approved complaints procedure is reproduced below. The community consultation strategy can be found on the EFS website.

INTRODUCTION

Complaints will be received via the complaints telephone line (1800 155 079) or via the Elf Farm Supplies website.

The complaints telephone line operates from 8am to 5pm Monday to Friday, with the exception of public holidays. Voice messages can be left at any time.

On receipt, complaints will be forwarded immediately to the relevant officer for investigation, and will be responded to within five business days, should the complainant request a response. This response will be provided back to complainant through their nominated choice of:

- Follow up phone call with reference number
- Email with reference number
- Letter with reference number.

STEP ONE: RECEIVE AND RECORD THE COMPLAINT

All complaints received by the complaints telephone line (and via this complaints portal) will be recorded and the following information will be sought from the complainant:

- Personal information of the complainant – ideally name and contact details (complaints made without personal information will still be recorded and investigated)
- Nature of complaint
- Time of complaint
- Location of complaint (to the nearest cross street, if complainant prefers not to give their exact location)
- Description of odour (character and strength), if odour complaint
- How long the odour has been present, if odour complaint

- Wind direction and other pertinent meteorological information (e.g. raining, fog, hot, wind strength), if odour complaint.

Once the complaint has been recorded the complainant will be provided with a reference number and advised of the response timeframe. In circumstances where complaints can be resolved at the point of contact, a record will be taken and the complainant will be provided with the reference number of their complaint.

STEP TWO: INVESTIGATE, ASSESS AND DETERMINE ACTION

Once a complaint has been received and the details recorded, the complaint will be investigated and an assessment made:

- Complaint information is forwarded to the appointed officer at the time of complaint for the matter to be investigated
- For odour complaints, attendance at reported site of complaint in order to confirm the nature of odour and its source:
 - Confirmation of character and strength of odour
 - Identification of direction of odour
 - If not possible to attend (i.e. no location given, WHS requirements) the complaint is still to be investigated as per the following steps of this procedure
- Cross-reference complaint against production schedule and activities at the Elf Farm Supplies at the time of complaint and one hour preceding the complaint
- For noise, odour and dust complaints, cross-reference complaint against meteorological conditions, including wind direction and strength at time of complaint and one hour preceding the complaint
- On the basis of the data gathered during the preceding stages, make an assessment of cause of the complaint
- Determine if corrective action is required and any contingency measures pending implementation
- Implement contingency measures and corrective action, where required.
- Document root cause analysis and corrective actions.

STEP THREE: RESPOND TO THE COMPLAINT

Once the complaint has been assessed, a formal response will be provided to the complainant, if they requested one.

This response will be provided within five business days of the complaint being made and will include:

- Time and date of the complaint
- If an odour complaint, the location of the complaint
- If an odour complaint, the wind strength and direction one hour prior to complaint lodgement
- Overview of activities at Elf Farm Supplies one hour prior to complaint lodgement
- Outcomes of the assessment of the complaint.

Should the complainant be dissatisfied with the outcome of the complaint, details of other complaint options will be provided and their dissatisfaction with the outcome will be recorded.

STEP FOUR: REPORT THE COMPLAINT

Complaint data will be compiled in a complaints register to record the quantity and nature of complaints. The complaints register will be published on this website, and updates will be posted on the site each month.

Updated December 2016.

7 ENVIRONMENTAL MONITORING

7.1 MONITORING PROGRAM

The environmental performance of the plant will be monitored in accordance with the project approval, environment protection licence and this management strategy.

The results of monitoring will be documented and retained at the plant office. If monitoring identifies any non-conformances, a corrective action strategy is to be implemented and recorded with the monitoring records.

7.2 ODOUR MONITORING

Conduct the following checks on a monthly basis or in the event of an odour complaint:

- Visual integrity checks on key building seals and the ducting connecting the process buildings, scrubbers and biofilter to ensure there are no leaks reducing the effectiveness of the system in maintaining a slight negative pressure in buildings and ductwork.:
- examining the air pressure monitoring systems within the building.
- Visual integrity checking of the biofilter. Two key observations are needed – no significant dry patches, and no significant gaps.
- Visual, and potentially physical examination of the biofilter bed for dry patches greater than 1 metre diameter, and any visible cracks, or venting emissions;
- Checking on process trends to examine the hourly data logged each month, and the trend data for at least the last 12 months (as available).

The approved odour management plan is included in *Appendix E*.

7.3 NOISE MONITORING

Where noise complaints are received by the Production Manager, the source of the noise complaint shall be identified, and noise monitoring will be undertaken (if required). Noise levels shall be measured at the complainant's location. Where access to the affected receiver is not practical, alternative location/s representative of the affected receiver will be considered.

In the event that noise exceedance(s) are identified, ameliorative measures shall be investigated and implemented (if required) to ensure compliance with the noise assessment objectives outlined in Table 2 of the approved Noise Management Plan.

The approved noise management plan is included in Appendix D.

7.4 WIND MONITORING

Wind data has been recorded by wind monitor at the plant for more than 20 years. Collected data has been used to provide inputs for modelling and to respond to any complaints.

7.5 ENERGY EFFICIENCY MONITORING

Total energy consumption data is compiled and reviewed against production data.

8 REPORTING AND REVIEW

8.1 REPORTING

8.1.1 Record Keeping

Any record or document required to be kept by this EMS must be kept at the plant office. The document should be available for examination by any authorised persons.

An electronic or hardcopy of the EMS must be kept in the plant office so that it is readily accessible to operational staff.

8.1.2 Documentation

In addition to maintaining the complaints register and monitoring results, the following documentation is to be retained to record compliance with the EMS.

Environmental

Elf Farm Supplies is to keep a record of any observations or issues in relation to environmental incidents.

Record of Environmental Incidents

The Production Manager is to document any environmental incidents that occur.

The following information is to be recorded, where applicable:

- the location of the incident;
- the name and telephone number of the person reporting the incident;
- the time of incident;
- the suspected cause of the incident;
- the environmental harm and/or environmental nuisance caused, threatened or suspected to be caused by the incident; and
- action taken to prevent any further occurrence and mitigate any environmental harm and/or nuisance caused by the incident.
- any unusual occurrences that may have environmental implications;

- any inspections or monitoring undertaken in accordance with this EMS;
- any corrective action that has been undertaken; and
- any other relevant observations.

Incidents are required to be notified in accordance with 8.1.3 below.

Corrective Action Statements

When recording a non-conformance from environmental monitoring or any non-compliance with statutory requirements, a separate statement shall be written for each system problem identified. The corrective action statement shall comprise four elements:

- objective evidence – the precise observation of the non-conformance;
- reference – to the specific section of the environmental documentation;
- explanation – why the non-conformance occurred or why the documentation is deficient; and
- action required – to alleviate the non-conformance or amend the documentation.

8.1.3 Notifications of Environmental Emergencies and Incidents

As soon as practicable after becoming aware of any emergency or incident which results in harm to the environment, personnel or property, the Secretary of the Department and any other relevant agency must be notified and provided with details encompassing the same information as that included in the record of environmental incidents, described in section 8.1.2.2 above.

Within seven days of the initial notification a detailed report of the incident must be given to the Secretary and any other relevant agency (project approval: schedule 5 condition 5).

8.1.4 Website

The local community and public at large are kept informed about the operation and environmental performance of the substrate plant through the website. The address of the website is www.elffarmssupplies.com.au

Information included on the website is specified in Condition 8 of Schedule 5, as follows:

- (a) all current statutory approvals, including this approval and any modifications to it;*
- (b) plans and programs required under this approval;*
- (c) technical analysis/reports of monitoring results, which have been reported in accordance with the various plans and programs approved under the conditions of this approval;*
- (d) a complaints register, which is to be updated on a monthly basis;*
- (e) a copy of any review as required under Condition 3 of Schedule 5 (over the last five years);*
- (f) updates on the progress of the construction works associated with MOD 1, MOD 2 and MOD 3; and*
- (g) any other material as required by the Secretary.*

8.2 REVIEW

8.2.1 Environmental Performance Review

Condition 3 of Schedule 5 of the project approval (as modified) specifies requirements for reviewing environmental performance of the substrate plant. The first review was due by 30 September 2020, then annually thereafter unless otherwise agreed by the Secretary. The review is required to contain the following information:

- “a) describe the operations that were carried out during the reporting period;*
- b) analyse the monitoring results and complaints records of the Project during the reporting period which includes a comparison of these results against the:*
 - i. relevant statutory requirements, limits or performance measures/criteria;*
 - ii. monitoring results of previous years; and*
 - iii. relevant predictions in the EA;*
- c) identify any non-compliance during the reporting period, 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(s) will be implemented during the next reporting period to improve the environmental performance of the Project.”*

The report of the review is to be submitted to the Secretary as soon as possible after the review is complete.

8.2.2 EMS Review

This EMS (including any sub-plan) may be reviewed at any time to suit the needs of the Project. In compliance with condition 4 of Schedule 5 of the project approval, the document (including any sub-plan) shall be reviewed within three months of any of the following:

- a) *the submission of an incident report under Condition 5 of Schedule 5;*
- b) *the submission of an annual review under Condition 3 of Schedule 5;*
- c) *the submission of an Independent Environmental Audit under Condition 3A of Schedule 5; and*
- d) *the approval of any modification of the conditions of this approval,*

A record shall be kept that the review has taken place. If a review determines that the EMS requires amendment, the approval of the Secretary is to be obtained for the amendment before the amended EMS is brought into effect.

Condition 4A of Schedule 5 specifies a timing for revision of this EMS and any sub-plan:

If necessary to improve the environmental performance of the project or cater for a modification, the strategies, plans and programs required under this approval must be revised, to the satisfaction of the Secretary. Where revisions are required, the revised document must be submitted to the Secretary for approval within six weeks of the review required by Condition 4 of Schedule 5.

9 APPENDICES

The latest version of documents comprising appendices A to G are available on the website:

www.elffarmssupplies.com.au

Appendix A	PROJECT APPROVAL
Appendix B	ENVIRONMENT PROTECTION LICENCE
Appendix C	WATER MANAGEMENT PLAN
Appendix D	NOISE MANAGEMENT PLAN
Appendix E	ODOUR MANAGEMENT PLAN
Appendix F	ENERGY EFFICIENCY PLAN
Appendix G	COMMUNITY CONSULTATION STRATEGY