



ELF FARM SUPPLIES MUSHROOM SUBSTRATE FACILITY

Annual Environmental Management Review



SEPTEMBER 27, 2019



Document Status		
Author Blake Edwards WHS/HR Manager Elf Farm Supplies Pty Ltd		Reviewer Timothy Neil Cockerell General Manager Elf Farm Supplies Pty Ltd
Revision Number	Status	Date
0	Final	27 September 2019

Name of operation	ELF FARM SUPPLIES
Name of operator	ROBERT TOLSON
Development consent / project approval#	MP 08_0255 MOD 1
Name of holder of development consent/project approval	ROBERT TOLSON
Compliance Reporting phase	Operation
Annual Review start date, as per Schedule 5, condition 3	September 2018
Annual Review end date	August 2019
<p>I, Timothy Neil Cockerell, certify that this audit report is a true and accurate record of the compliance status of Elf Farm Supplies for the period September 2018 – August 2019 and that I am authorised to make this statement on behalf of Robert Tolson.</p> <p>Note.</p> <p>a) The Annual Review is an environmental audit for the purposes of section 122B(2) of the Environmental Planning and Assessment Act 1979. Section 122E provides that a person must not include false or misleading information (or provide information for inclusion in) an audit report produced to the Minister in connection with an environmental audit if the person knows that the information is false or misleading in a material respect. The maximum penalty is, in the case of a corporation, \$1 million and for an individual \$250,000.</p> <p>b) The Crimes Act 1900 contains other offences relating to false and misleading information: section 192G (Intention to defraud by false or misleading statement--maximum penalty 5 years imprisonment); sections 307A, 307B and 307C (False or misleading applications/information/documents--maximum penalty 2 years imprisonment or \$22,000 or both).</p>	
Name of authorised reporting officer	Timothy Neil Cockerell
Title of authorised reporting officer	GENERAL MANAGER
Signature of authorised reporting officer	
Date	27th September, 2019



1. Executive Summary

As part of its conditions of compliance to the Department of Planning and Environment's project approval 08_255 MOD 1(2016), Elf Farm Supplies is required to produce an 'Annual Environmental Management Review' report of the environmental performance of its project and operations.

The purpose of this document is to comply with Condition 3 of Schedule 5 of project approval No 08_255. MOD 1. Which states as follows:

"By the end of September 2016, and annually thereafter, unless otherwise agreed by the Secretary, the Proponent shall review the environmental performance of the Project to the satisfaction of the Secretary. This review must

(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;

(e) describe what measure(s) will be implemented during the next reporting period to improve the environmental performance of the Project."

This report covers the 12-month period between September 2018 and August 2019. It is prepared to assess compliance with items (a) to (e) of Condition 3; Schedule 5 as well as review the overall environmental performance of approval 08_255 MOD 1 project works and operations at the mushroom substrate plant at Mulgrave operated by Elf Farm Supplies for the stipulated period.



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Abbreviations

AEMR – Annual Environmental Review Report.

EA – Environmental Assessment.

EPA – Environmental Protection Authority.

EPL – Environmental Protection Licence.

EFS – Elf Farm supplies.

IEA – Independent Environmental Audit.



2. Introduction

Background

Elf Farm Supplies Pty Ltd (EFS) was established at Mulgrave in 1981 and is a family owned Australian Company. Today, Elf Farm Supplies is one of the leading mushroom substrate (compost) producers in Australia, is the largest agricultural enterprise in the Hawkesbury and the only substrate supplier in the Sydney region. Our products are supplied throughout Australia and are integral to the success of the Australian Mushroom Industry; with current supply of our substrate generating 75% of NSW mushrooms, and 25% of total Australian mushroom product.

Modification approval granted on the 14th of March 2016 primarily involves upgrades to the exhaust management system. The works (Mod 1) will be principally associated with the replacement of the existing Bale Wetting processing phase and the enhancement of the exhaust management system (utilising a biofilter).

The approved modification includes;

- Replacement of the existing method of exhaust management used,
- Installation of an emissions treatment plant and ancillary works,
- retrofitting of existing phases 2 and 3 buildings,
- Converting the existing Bale Wetting Building for bale-wetting and stable bedding operations.

Mod 1 was completed on 30th June 2018; therefore this Annual report will cover all operations under the new process.

Review Scope

This Annual Environmental Management Review (AEMR) report has been prepared pursuant to Condition 3 of Schedule 5 of Project Approval MP 08_0255 MOD 1, as well as additional requirements for this and future reports as per letter dated 26th October 2018 from the Department of Planning and Environment in Appendix C.

This AEMR covers the period from 1st September 2018 to 31st August 2019.

Table A lists the requirements of this condition and indicates where each has been addressed in this AEMR report.

Environmental management of the site is undertaken by the following key positions: Board of Directors, General Manager, Plant Manager, Production Managers and WHS Manager; and can be contacted on 02 4577 5000.



3. Operations Overview

EFS's operations involve a complex and dynamic process that varies both spatially and temporally. The end product of the process is a mushroom substrate used for mushroom cultivation.

The facility produces mushroom substrate by utilising a multi-stage composting process. An overview of the process is as follows:

Raw Materials Preparation and Bale Wetting:

This involves combining all ingredients (including poultry manure) inside the Raw Materials Building, ready for internal transport to the Bale Wetting Building.

The straw bales are transported to the Bale Wetting Building to start the bale wetting process. The bale wetting process involves gradually adding water and pulsing fresh air through the straw bales to keep the material aerobic. Similarly, the stable bedding material undergoes wetting and pulsing fresh air as well;

Pre-Wetting:

The pre-wet straw bales and other ingredients are blended on a production conveyor line in the Bale Wetting Building and transported to a Bale Wetting bunker. Re-blending occurs by removing product from bunker/s and adding back into another bunker - via hopper/conveyor production line - whilst recycled water and other raw materials are continuously added;

Phase 1:

The material is processed in bunkers where temperature, oxygen and moisture conditions are controlled and regulated;

Phase 2:

Material is transferred to clean tunnels where it is pasteurised to remove any weed, moulds, pathogens and insect larvae before spawning; and

Phase 3:

Mushroom spawn is added and grown through the substrate for a minimum of two to three weeks prior to mushroom farm delivery.

Detailed information of the mushroom plant operations process and production are as follows;

Raw Materials Storage and Preparation Building

The raw materials building area consists of several storage bay areas that separate dry additive products including poultry manure, cotton seed, gypsum and other organic nitrogen sources. The ingredients are weighed and mixed together in calculated ratios in an enclosed area.

The mixing is carried out by a front-end loader. After mixing, the material is stockpiled; to be carried to a hopper and added to the bale break production line via a hopper/conveyor. The mixing of the raw materials is referred to as the preparation of the 'brew' which is a blend of ingredients.



Bale Wetting and Stable Bedding Preparation Stage

The bale wetting stage involves the wetting of straw bales with water for several days inside the Bale Wetting Building.

The stable bedding area is also located in Bale Wetting Building. The stable bedding material is wetted prior to transfer to the Bale breaking production line during the bale breaking process.

Pre Wetting Bunkers

The initial low-temperature stage of the mushroom composting process, Pre Wetting, takes place inside concrete bunkers.

After bale wetting, the wetted bales are transported internally by front-end loader onto the blending conveyor line and manually de-stringed. Bales are then broken by the bale breaking drum and spinners and conveyed toward the bunker; where brew, stable bedding and recycled water are added, before filling the bunkers.

The Bale Wetting and Bunker building air is collected via large ducts and exhausted via the exhaust system.

Exhaust System

Air is passed through ammonia scrubbers and a large biofilter which extracts, treats and exhausts the building/process air from Raw materials, Bale wetting, Phase 1 and Phase 2/3 buildings.

Phase 1 Working Hall & Bunkers

The material is removed from the pre wet bunkers and placed in the hopper. Water is added and mixed in, then conveyed into another designated bunker, all within the same building to continue the Phase 1 process. Moisture, oxygen and temperature are closely controlled.

Once the Phase 1 process cycle is complete, the material is transferred to the Phase 2/3 buildings via the Phase 1 to Phase 2 transfer conveyors located between the buildings.

Phase 2/3 Buildings

The Phase 2/3 buildings consist of a filling and shipout halls with a combined total of thirty-one tunnels.

Once the material arrives at the Phase 2/3 Building, another series of conveyors transfer the material into a designated tunnel. During this process, the Phase 2/3 tunnels are fully vented to the exhaust system.

The material in the tunnels is kept constantly under aerobic conditions via an extensive airflow channel network.

The exhaust air is discharged to the exhaust system during the pasteurisation phase. After the pasteurisation phases exhaust air is discharged to atmosphere.

Fresh air is drawn through filters in the Phase 2/3 Fan Room.

The Phase 2/3 buildings are kept under a slight positive pressure for quarantine reasons. Tunnel conditions are monitored and controlled via a PLC System.



Phase 2 Process Stages

The Phase 2 process cycle consists of the following stages:

- Tunnel Filling;
 - Levelling;
 - Warm-up Pasteurisation;
 - Pasteurisation;
 - Cooldown Conditioning;
- } Pasteurisation Phases
- and*
- Conditioning.
- } Phase substrate is removed from the tunnel and spawned, initiating Phase 3

Once the Phase 2 process stages are complete, the process will then enter into Phase 3.

Phase 3 Process Stages

The Phase 3 process cycle is characterised by the addition of mushroom spawn and consists of the following stages:

- Spawn Run 1;
- Spawn Run 2; and
- Cool-down (spawn/ship-out).

Once the Phase 3 stages are complete, the fully processed product is shipped out either as a bulk product or packaged in nominal 20kg blocks.



4. Statutory and Regulatory Requirements

4.1. Penalty Notices

Penalty Notice issued by NSW Environmental Protection Authority

There were no penalty notices issued to EFS by the EPA this review period.

Penalty Notice issued by NSW Department of Planning and Environment

There were no penalty notices issued to EFS by the DPE this review period.

4.2. Environmental Protection Licence

There are no non-compliances related to the environmental protection licence No: 6229

Licence Variation

The following variations have been made to the licence on 4th October 2018, Appendix B:

- Condition P1, L2.3, L2.4, M2, M3 and monitoring point 1 of the licence have been removed from the licence.
- Condition O4.7 has been varied to remove the reference to the 7th November 2014.
- Condition O4.8 has been varied to remove the reference to the 7th November 2014.
- Condition U1 has been removed from the licence.
- Condition U2 has been removed from the licence.
- Condition U3 of the licence has been removed from the licence.

Annual Returns and Annual Waste Summary

The Annual Return and annual waste summary for 2019 have been lodged in accordance with the NSW EPA requirements. There were no non-compliance incidents that resulted in a Penalty Notice or referrals for this review period.

Table A Compliances Table - Approval 08_0255 MOD1

Condition of consent ID	Description	Compliance Status	Comments
Condition 3, Schedule 5d	<i>Identify any trends in the monitoring data over the life of the Project;</i>	Compliant	
Condition 3, Schedule 5e	<i>Describe what measure(s) will be implemented during the next reporting period to improve the environmental performance of the Project."</i>	Compliant	
Schedule 3, Condition 17(B)	<i>The Proponent shall ensure that the western dam at the Substrate Plant site (identified on the plan in Appendix 2 of this approval) does not receive process water.</i> <i>Notes: The dam may receive water from direct rainfall, area runoff and groundwater and during times of emergency.</i>	Compliant	
Schedule 3, Condition 17(C)	<i>Notwithstanding Condition 17B of Schedule 3, in the event of an emergency such as a high rainfall event or plant breakdown, the Proponent may use the western dam. Notification of any emergency use of the dam shall be provided to the Secretary in writing within 7 days of the emergency.</i>	Compliant	
Schedule 3, Condition 19	<i>The Proponent shall ensure that the operational noise generated by the Substrate Plant site does not exceed the criteria</i>	Compliant	Refer to appendix E Noise monitoring surveys
Schedule 3, Condition 7	<i>The Proponent shall implement all reasonable and feasible measures to minimise dust generated at the Substrate Plant site.</i>	Compliant	
Schedule 5, Condition 3A	<i>The Proponent shall commission and pay the full cost of an Independent Environmental Audit of the Project.</i>	Compliant	Completed March 2019 – refer to appendix G

Status	Description
Compliant	The proponent has collected sufficient verifiable evidence to demonstrate that all elements of the requirement have been complied with.
Non-compliant	The proponent has identified a non-compliance with one or more elements of the requirement.
Not triggered	A requirement has an activation or timing trigger that has not been met at the phase of the development when the compliance assessment is undertaken; therefore an assessment of compliance is not relevant.

4.3. Noise Management and Monitoring

Performance during the reporting period	<p>No Noise Complaints during reporting period</p> <p>No Construction was undertaken during this reporting period.</p> <p>Noise surveys were conducted 25th October, 31st October and into the morning of 1st November, 2018 as required by our noise management plan, within 6 months of completion of MOD 1.</p> <p>Operational noise from the Mulgrave Substrate Plant was considered to be not heard or minimal because ambient noise and noise from other sources at the receptor sites were higher than the operational criteria, schedule 3 Condition 19.</p>
Trend / key management Actions	<p>There appears to be no significant impact on noise limits and noise emissions from the site, despite an increase in operations during this period.</p> <p>Appendix E provide noise monitoring report</p>
Proposed management actions.	<p>Complaints will continue to be addressed as per our Complaints Procedure http://www.elffarmsupplies.com.au/complaints-procedure/</p>

4.4. Odour Management and Monitoring

Performance during the reporting period	<p>Odour Emissions & biofilter control System audit was conducted.</p> <p>Two Field odour surveys, as part of the <i>Odour Management Plan Elf Farm Supplies Substrate Facility</i>, were conducted this reporting period.</p>
Trend / key management Actions	<p>This is the 1st full reporting year running the Biofilter emissions system, the only trends available are the odour complaints and odour surveys</p> <p>There was only one (1) odour complaint compared to eighteen (18) the previous year.</p> <p>No odour associated with the site was able to be identified as offensive during the surveys that were required by the <i>Odour Management Plan Elf Farm Supplies Substrate Facility</i>.</p> <p>Continuous environmental improvement by capturing the air emissions from the main pit and transferring the air into the biofilter control system. Installing two 100,000 litres tanks to assist with water management on-site.</p>
Proposed management actions.	<p>Odour Management Plan will be reviewed</p> <p>Continue to perform odour surveys as part of the <i>Odour Management Plan Elf Farm Supplies Substrate Facility</i></p>

4.5. Energy Efficiency Monitoring

Performance during the reporting period	<p>Total electricity consumption for the financial year is 7380MWh.</p> <p>Averaged out on a weekly bases electricity is consumed at a rate of 141.9 MWh</p> <p>The average production rate for mushroom substrate (phase 1 as per licence) 2019 financial year is 1560 tonnes per week</p> <p>Electricity consumption per phase 1 tonnage equates to 89.2 Kwh</p> <p>The plant was still undergoing minor adjustments/fine tuning by the manufacturer's team for a number of months after the 1 July 2018. This work was completed in October 2018.</p> <p>Trials on the Phase 2 tunnel fan operating parameters started in November 2018. The fan operating parameters were changed back to historical settings in Feb 2019.</p> <p>Energy Efficiency reviews into the emission and operational systems were conducted from February 2019 to August 2019</p>
Trend / key management Actions	<p>Compared to the electricity consumption per tonnage last year there was a 10.4% increase in electricity consumption.</p>
Proposed management actions.	<p>Energy Efficiency reviews will continue in the following areas:</p> <p>Water pumping and cooling systems, process plant, emissions systems, tunnel/bunker processing and facilities (lighting, equipment etc)</p>

4.6. Incident Reporting

Performance during the reporting period	<p>Two emergency uses of the Western Dam were reported to the department of planning and EPA</p> <p>The demolition of the old Phase 1 working hall meant that the stormwater normally captured by the roof and diverted away from operations is now captured by the operations drainage system, increasing flows to main pit.</p>
Trend / key Management Actions	<p>Previous reporting year there was also only two emergency uses of western dam.</p> <p>Reduction in water usage in Phase 1 from February 2019, due to a change in production methodology that improved water absorption.</p>
Proposed management actions.	<p>Two 100,000 litres tanks were installed to assist with increased ground stormwater entering the main pit via increasing storage volume</p> <p>Continue to review water management</p> <p>Incidents will be tabled at management meetings for review and any corrective actions will be followed up.</p>

4.7. Community Information Complaints Handling

Performance during the reporting period	Only one complaint was received during this reporting period, when a semi-trailer delivery of chicken manure entered site, on a windy day, whilst the general public were waiting for the next train at the neighbouring train station.
Trend / key management actions	There was only 1 odour complaint; this has dropped 94% from previous year (18) and 98% from the last full year of the previous emissions plant (53). This one odour complaint was from a manure delivery truck entering the site.
Proposed management actions.	Complaints will continue to be addressed as per our Complaints Procedure http://www.elfarmsupplies.com.au/complaints-procedure/

4.8. Environmental Auditing

Performance during the reporting period	All non-compliances were assessed to be of a low risk. Of the 46 auditable conditions, compliance was achieved for 32 (70%), non-compliance recorded for 14 conditions (30%). Of the 14 non-compliances, 6 (43%) were classified as administrative non-compliances.
Trend / key management actions	70% compliance was an improvement on the 2016 IEA, where 61% compliance was achieved.
Proposed management actions.	Environmental Management Strategy, Water Management Plan and Odour Management plan needs to be reviewed and updated to reflect all current practices on site and new emissions systems.

4.9. Dust

Performance during the reporting period	Sprinkler system used and maintained in the straw bale storage area Access roads are either concrete, sealed or gravelled to minimise dust. All trucks entering and leaving site are required to have loads covered.
Trend / key management actions	No Complaints recorded
Proposed management actions.	Continue to minimise dust generating activities Continue to seal external truck pathways



5. Trend analysis

Table B Production Summary

Material	Approved limit	Previous reporting period	This Reporting period	Next reporting period
Phase 1 mushroom substrate	1600 T Per week – Schedule 2 Condition 7(1)	1380T Per week	1580 T Per week	1600T per week

Table C Electricity Use Trend Analysis

Electrical Energy Consumption Annual Summary								
Month	Energy for Financial Year 2019-20		Energy for Financial Year 2018-19		Energy for Financial Year 2017-18		Energy for Financial Year 2016-17	
	Usage (MWh)	Production (Tonnes)	Usage (MWh)	Production (Tonnes)	Usage (MWh)	Production (Tonnes)	Usage (MWh)	Production (Tonnes)
July	515	6162	524.1	7033	424.5	6905	410.3	5962
August	455.4	5916	566	5666	429.1	5524	393.6	7391
September			547.6	5819	428.6	5534	392	5834
October			607.9	8256	460.9	6959	416.3	6731
November			637.1	6565	434.2	5084	415.7	4858
December			699.5	6610	472.7	5515	474.9	5528
January			765.3	7833	530	6891	525.9	6947
February			643.9	6502	474.3	5559	480.2	5581
March			701.7	6521	537.8	5525	512.4	5583
April			581	7977	488.7	6970	442.7	5590
May			569.5	6212	533.3	5607	452.5	6971
June			536.4	7706	572.5	5489	426.1	5528
Total			7380	82700	5786.6	71562	5342.6	72504
Energy consumption rate (kWh/tonne)			89.2		80.8		73.7	

Table D Electricity per tonne history

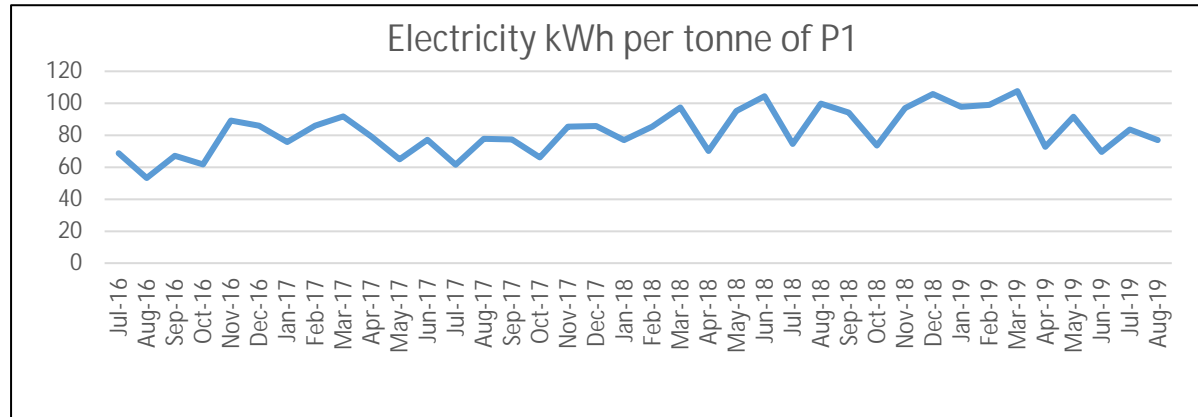


Table E Electricity per tonne this reporting period

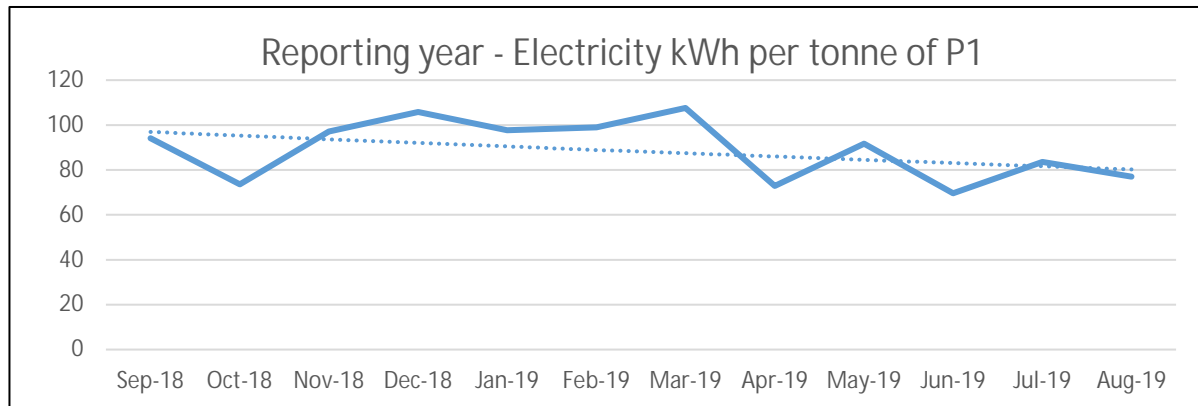




Table F Gas Consumption Trend Analysis

Gas Consumption Annual Summary: 2016 – 2019											
Review Period (Sept 2016 – Aug 2017)				Review Period (Sept 2017 - Aug 2018)				Review Period (Sept 2018 - Aug 2019)			
Billing Period	Usage (GJ)	Bill days	Production (Tonnes)	Billing Period	Usage (GJ)	Bill days	Production (Tonnes)	Billing Period	Usage (GJ)	Bill days	Production (Tonnes)
Sept 16 – Nov-16	461.9	90	17423	Sept 17 – Nov-17	472.4	90	17577	Aug 18 – Nov 18	805.6	90	20640
Dec-16 – Feb-17	487.8	91	18056	Dec 17 – Feb-18	436.4	90	17965	Nov 18 – Feb 19	781.9	91	20945
March 17 – May-17	257.5	90	18144	March – May-18	454	90	18102	Feb 19 – May 19	884.8	91	20710
June 17 – Aug-17	399.3	91	17957	June 18 – Aug-18	470.5	90	18188	May 19 – Aug 19	957.2	91	19784
Total Gas consumption (GJ)	1606.5 GJ			1833.3				3429.5			
Total production Tonnes	71580 tonnes			71832 tonnes				82079			
Total Gas consumption rate (kJ/tonne)	22.44 kJ/tonne (0.02244 GJ/tonne)			25.52 kJ/tonne (0.02552 GJ/tonne)				41.78 kJ/tonne (0.04178 GJ/tonne)			



Complaints Records

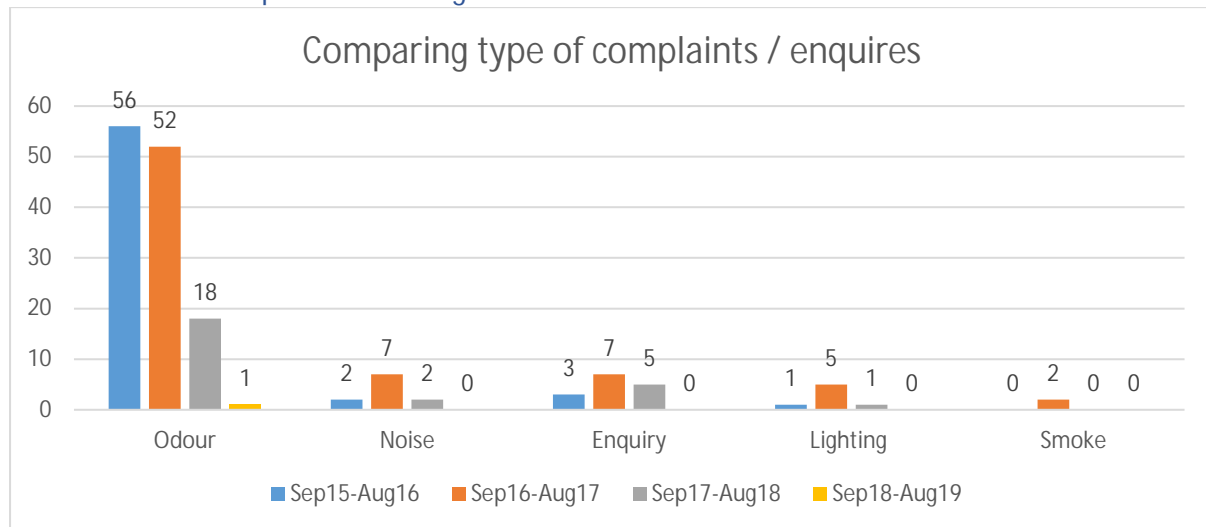
Table G Number of complaints and enquires by reporting period

Reporting period	Number of enquiries and complaints
1 September 2015 to 31 August 2016	59
1 September 2016 to 31 August 2017	69
1 September 2017 to 31 August 2018	26
1 September 2018 to 31 August 2019	1

Table H Odour Complaint Data Analysis

Complaints Period	Number of Complaints	Number of Wind Direction - Confirmed	Number of Wind Direction - Uncertain	Number of No-Location Complaints Given	Mushroom Substrate Process		
					Complaints when undertaking Transfer	Complaints when Blending Phase 1	Complaints when Blending PW
Sept-Dec '12	2	1	1	1	n/a	n/a	n/a
2013	109	43	46	22	22	13	39
2014	68	30	30	9	9	13	17
2015	125	74	32	8	14	44	22
Jan-Sept '16	35	20	15	-	9	22	8
Sept 16 - Oct 17	53	10	21	4	28	12	19
Sept 17 – Aug 18	18	0	16	2	0	11	1
Sept 18 – Aug 19	1	1	0	0	0	0	0
Totals	411	179	161	46	82	115	106

Table I Complaints trending



6. Action Items from Previous Annual Review

1. All commissioning works will be completed by the next annual review reporting period. Monitoring data from the new operational Biofilter systems will be collected to be able to then have data to trend for future reporting periods.

All works completed and trending data is being collected.

7. Forecast and Proposed Environmental Improvements

Proposed management actions are detailed in each section 4.3 to 4.9.

Next Annual Review

The next annual review is due in a year, which is by the end of September 2020 as per the requirements in Condition 3 Schedule 5 of project approval No 08_255.



APPENDIX A

ENVIRONMENTAL PROTECTION

LICENCE NO: 6229



Environment Protection Licence

Licence - 6229

Licence Details	
Number:	6229
Anniversary Date:	20-May

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

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

Scheduled Activity
Composting
Waste storage

Fee Based Activity	Scale
Composting	> 5000-50000 T annual capacity to receive organics
Waste storage - other types of waste	Any other types of waste stored

Region
Waste & Resource Recovery
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

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Environment Protection Licence

Licence - 6229



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Environment Protection Licence

Licence - 6229



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);
- 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).

Environment Protection Licence

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

ELF FARM SUPPLIES PTY LTD
PO BOX 615
WINDSOR NSW 2756

subject to the conditions which follow.

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1 Administrative Conditions

A1 What the licence authorises and regulates

- A1.1 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	Fee Based Activity	Scale
Composting	Composting	> 5000 - 50000 T annual capacity to receive organics
Waste storage	Waste storage - other types of waste	Any other types of waste stored

A2 Premises or plant to which this licence applies

- A2.1 The licence applies to the following premises:

Premises Details
ELF FARM SUPPLIES PTY LTD
108 MULGRAVE ROAD
MULGRAVE
NSW 2756
LOT 13 DP 1138749, LOT 14 DP 1138749

A3 Information supplied to the EPA

- A3.1 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:

- 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
- the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

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2 Discharges to Air and Water and Applications to Land

P1 Location of monitoring/discharge points and areas

- P1.1 The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.

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 Waste

- L2.1 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.

This condition does not limit any other conditions in this licence.

Code	Waste	Description	Activity	Other Limits
NA	Chicken manure			NA
NA	Feather meal			NA
NA	Cotton seed meal			NA
NA	Natural organic fibrous materials			NA
NA	Horse stable bedding			NA
NA	General or Specific exempted waste			NA
NA	Waste			NA

- L2.2 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.

L3 Noise limits

- L3.1 Noise generated at the premises must not exceed the LAeq (15 minutes) noise limits presented in the table

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below:

Location	Day	Evening	Night
Most effected residence	44	44	39

- L3.2 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 LAeq(15 minute) noise limits in condition L4.1.

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.

- L3.3 The noise emission limits identified in condition L4.1 apply under meteorological conditions of:
- a) wind speeds up to 3 m/s at 10 metres above ground level; and/or
 - b) temperature inversion conditions of up to 3 °C/100m.

L4 Potentially offensive odour

- L4.1 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.

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.

O2 Maintenance of plant and equipment

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- 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 Dust

- O3.1 The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.

O4 Other operating conditions

- O4.1 There must be no incineration or open burning of any material(s) on the premises, except as specifically authorised by the EPA.
- O4.2 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.
- O4.3 Clean up any spillage in front of the raw material ingredients storage building; including poultry manure, gypsum, meals, corn cobs, cotton seed, straw or elsewhere on a daily basis.
- O4.4 Remove solid material from the leachate collection pit screen daily when water is flowing to the pit (wet weather or bale wetting).
- O4.5 De-Sludge the leachate collection pit (if sludge is present) at least fortnightly and keep a record.
- O4.6 Keep doors to process buildings closed immediately before and after the movement of plant or people through the door.
- O4.7 All movement of material between the Pre-wet building and the Phase 1 building must be through the sealed corridor that connects these two buildings. That corridor must be effectively sealed during all processing activities.
- O4.8 All process buildings and conveyor systems must be constructed and maintained so that these do not allow fugitive odour emissions.

Fugitive odour emissions points include holes, leaks, gaps, corrosion points and other similar failures in containment structures without inclusion of the mechanical extraction vents.

5 Monitoring and Recording Conditions

M1 Monitoring records

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- 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:
 - a) in a legible form, or in a form that can readily be reduced to a legible form;
 - b) kept for at least 4 years after the monitoring or event to which they relate took place; and
 - c) 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:
 - a) the date(s) on which the sample was taken;
 - b) the time(s) at which the sample was collected;
 - c) the point at which the sample was taken; and
 - d) the name of the person who collected the sample.

M2 Recording of pollution complaints

- M2.1 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.
- M2.2 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.
- M2.3 The record of a complaint must be kept for at least 4 years after the complaint was made.
- M2.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M3 Telephone complaints line

- M3.1 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.
- M3.2 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.
- M3.3 The preceding two conditions do not apply until 3 months after: the date of the issue of this licence.

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6 Reporting Conditions

R1 Annual return documents

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

1. a Statement of Compliance,
2. a Monitoring and Complaints Summary,
3. a Statement of Compliance - Licence Conditions,
4. a Statement of Compliance - Load based Fee,
5. a Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan,
6. a Statement of Compliance - Requirement to Publish Pollution Monitoring Data; and
7. a Statement of Compliance - Environmental Management Systems and Practices.

At 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.

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

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

- 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.

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.

R1.5 The Annual Return for the reporting period must be supplied to the EPA via eConnect *EPA* or 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').

R1.6 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.

R1.7 Within the Annual Return, the Statements 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.

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.

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

R2 Notification of environmental harm

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

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.

Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

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.

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R4 Other reporting conditions

- 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.

Annual Waste Summary Reporting

- R4.2 The licensee must complete and submit to the EPA an Annual Waste Summary Report each financial year.
- R4.3 The Annual Waste Summary Report must be submitted to the EPA via the Waste and Resource Reporting Portal (WARRP) within 60 days of the end of the financial year.

7 General Conditions

G1 Copy of licence kept at the premises or plant

- 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.

8 Special Conditions

E1 Odour Complaints/Feedback Management System

- E1.1 The licensee must maintain and operate an Odour Complaints/Feedback Management System. 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
- a) Inclusion in future telephone directory listings for Elf Farm Supplies
 - b) 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
 - c) Inclusion on a sign at the property entrance
 - d) 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

Environment Protection Licence

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premises as follows:

- a) Every complaint is to be investigated at the time it is received 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.
- 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.
- g) The oxygen content (%) of compost in the pre-wet processing phase is to be obtained and recorded from one hour preceeding the odour incident until the time the incident is reported to have ceased.

E1.4 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) The oxygen content (%) of compost in the pre-wet processing phase from one hour preceeding the odour incident until the time the incident is reported to have ceased;
- g) Any other observations as to the possible source of the odour incident.

E1.5 A summary of the information documented under Condition E1.4 (a)-(e) and (g) 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.

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Dictionary

General Dictionary

3DGM [in relation to a concentration limit]	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
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
AM	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> .
AMG	Australian Map Grid
anniversary date	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.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
BOD	Means biochemical oxygen demand
CEM	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> .
COD	Means chemical oxygen demand
composite sample	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.
cond.	Means conductivity
environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.
fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 2009.
general solid waste (non-putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997

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flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
general solid waste (putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder described at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	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 of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	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.
restricted solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
special waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TM	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> .

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TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste type	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: 01-August-2000

Environment Protection Licence

Licence - 6229

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.
- 17 Licence varied by notice 1507559 issued on 14-Sep-2012
- 18 Licence transferred through application 1515019 approved on 24-Jun-2013 , which came into effect on 01-Jul-2013

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19	Licence varied by notice	1515813 issued on 07-Aug-2013
20	Licence varied by notice	1519001 issued on 15-May-2014
21	Licence varied by notice	1523940 issued on 24-Sep-2014
22	Licence transferred through application 1525415 approved on 07-Oct-2014 , which came into effect on 01-Oct-2014	
23	Licence varied by notice	1535927 issued on 08-Mar-2016
24	Licence varied by notice	1543371 issued on 23-Sep-2016



APPENDIX B

ENVIRONMENTAL PROTECTION LICENCE VARIATION

Licence Variation



Licence - 6229

ELF FARM SUPPLIES PTY LTD
ABN 71 131 333 830
PO BOX 615
WINDSOR NSW 2756

Attention: The appropriate officer

Notice Number 1570728
File Number EF13/5158
Date 04-Oct-2018

NOTICE OF VARIATION OF LICENCE NO. 6229

Your licence has been varied

I am writing to you regarding a Licence variation application received by the EPA on 21 September 2018 requesting removing condition U3 from Environment Protection Licence No 6229. The EPA has reviewed condition U3 and agreed to vary the licence.

The EPA has also varied the licence to remove other conditions that have been complied with.

The EPA has now finalised the Notice of Variation of Licence No. 6229. This new licence takes effect immediately and the previous licence ceases to have effect. The notice below details the changes to the Licence.

A copy of the Notice and the amended Licence are now available for download from our website <http://www.epa.nsw.gov.au/prpoeoapp/>

BACKGROUND

- A. ELF FARM SUPPLIES PTY LTD ("the licensee") is the holder of Environment Protection Licence No. 6229 ("the licence") issued under the *Protection of the Environment Operations Act 1997* ("the Act"). The licence authorises the carrying out of activities at 108 MULGRAVE ROAD, MULGRAVE, NSW, 2756 ("the premises").
- B. Condition U3 of the licence restricts the production of mushroom substrate at the premises to below 1400 tonnes/week until such time as the works approved in 08_255 MOD1 are complete and operational. On 21 September 2018 the Licensee wrote to the EPA stating that works approved within 08_255 MOD1 are complete and operational and requesting that the licence be amended.
- C. Conditions P1, L2.3, L2.4, M2, M3 and monitoring point 1 of the licence regulate the monitoring of discharge from the bioscrubber chimney. The works approved within 08_255 MOD1 make the chimney offline. The licensee will not make further discharge from the chimney.

Licence Variation



- D. Condition O4.7 of the licence requires works connecting processing buildings be completed and effected ongoing from 7 November 2014. The EPA inspected the Premises on 17 December 2014 and observed that these works have been complied with.
- E. Condition O4.8 of the licence requires works to stop fugitive odour emissions from the process buildings be completed and effected ongoing from 7 November 2014. The EPA inspected the Premises on 17 December 2014 and observed that these works have been complied with.
- F. Condition U1 of the licence requires the construction of an air extraction system to treat air emissions from the processes onsite. The works required in U1 have been constructed as part of the 08_255 MOD1 works. The Licensee's letter of 21 September 2018 states that these works are now complete and operational.
- G. Condition U2 of the licence requires the licensee maintain a process of community engagement until 6 December 2016. This requirement has expired and the community liaison committee has stopped.

VARIATION OF LICENCE NO. 6229

- 1. By this notice the EPA varies licence No. 6229. The attached licence document contains all variations that are made to the licence by this notice.
- 2. The following variations have been made to the licence:
 - Condition P1, L2.3, L2.4, M2, M3 and monitoring point 1 of the licence have been removed from the licence.
 - Condition O4.7 has been varied to remove the reference to the 7 November 2014.
 - Condition O4.8 has been varied to remove the reference to the 7 November 2014.
 - Condition U1 has been removed from the licence.
 - Condition U2 has been removed from the licence.
 - Condition U3 of the licence has been removed from the licence.

A handwritten signature in black ink, appearing to read 'T. Wilson', written over a light blue horizontal line.

.....
Trevor Wilson

Unit Head

Waste & Resource Recovery

(by Delegation)

Licence Variation



INFORMATION ABOUT THIS NOTICE

- This notice is issued under section 58(5) of the Act.
- Details provided in this notice, along with an updated version of the licence, will be available on the EPA's Public Register (<http://www.epa.nsw.gov.au/prpoeo/index.htm>) in accordance with section 308 of the Act.

Appeals against this decision

- You can appeal to the Land and Environment Court against this decision. The deadline for lodging the appeal is 21 days after you were given notice of this decision.

When this notice begins to operate

- The variations to the licence specified in this notice begin to operate immediately from the date of this notice, unless another date is specified in this notice.
- If an appeal is made against this decision to vary the licence and the Land and Environment Court directs that the decision is stayed the decision does not operate until the stay ceases to have effect or the Land and Environment Court confirms the decision or the appeal is withdrawn (whichever occurs first).



APPENDIX C

DEPARTMENT OF PLANNING – ANNUAL REVIEW LETTER

Contact: Alfarid Hussain
Phone: (02) 9274 6456
Email: compliance@planning.nsw.gov.au

Elf Farms Supplies Pty Ltd
108 Mulgrave Road
MULGRAVE NSW 2756

26 October 2018

Attention: Mr Neil Cockerell – General Manager

Dear Mr Cockerell

Elf Farm Supplies Mushroom Substrate Facility — PA 08_0255 — 2018 Annual Report

I refer to the Annual Environmental Management Review (**Report**) prepared for the Elf Farm Supplies Mushroom Substrate Facility (**Facility**) for the reporting period September 2017-August 2018 and submitted to the Department on 28 September 2018 as required under Schedule 5, Condition 3 of project approval 08_0255, as modified (**Approval**).

The Department has reviewed the report and considers that it generally satisfies the requirements of the approvals. Please note that this letter is not an endorsement of the compliance status of the project.

For future annual reviews, it is requested that Elf Farms Supplies Pty Ltd (**Elf Farm**) incorporate the following in all future annual reviews:

- 1) A production and dispatch summary for the Substrate Plant consistent with **Table 1** in **Attachment 1**;
- 2) Brief summaries on the effectiveness of the management plans applicable to the substrate plant. Please include details of any improvement measures that Elf Farm proposes to undertake with respect to its management plans in the next reporting period;
- 3) A title block at the beginning of the annual review that is consistent with **Table 2** in **Attachment 2**;
- 4) Contact details of key personnel who are responsible for the environmental management of the site in the Introduction section of the report;
- 5) Maps and aerial photography in the main body of the annual review showing the operational disturbance footprint and offset areas;
- 6) Summaries table assessing the compliance status of all conditions of the approval as an attachment to the annual review and not in the main body of the report. The summaries table should be consistent with *Attachment A- Compliance Table Example* in *Compliance Reporting Post Approval Requirements (CRPAR)*. The CRPAR is available on the Department's website at:
<https://www.planning.nsw.gov.au/~media/Files/DPE/Other/compliance-reporting-post-approval-requirements-2018-06.ashx>;
- 7) A copy of this letter as an attachment to the main report.

Lastly, please consider the recently released CRPAR in all future annual reports.¹

Should you wish to discuss the above, please contact Alfarid Hussain on 02 9274 6456 or via email on compliance@planning.nsw.gov.au

Yours sincerely,

A handwritten signature in dark ink, appearing to read 'CMA', followed by a long horizontal line extending to the right.

Chris Mathieson
Team Leader— Compliance
As Nominee of the Secretary

¹ *An an existing project, Elf Farms may elect to voluntarily comply with the CRPAR but must comply with the existing conditions.*

Attachment 1

Table 1 - Production Summary

Material	Approved limit (specify source)	Previous reporting period (actual)	This reporting period (actual)	Next reporting period (forecast)

Attachment 2

Table 2- Annual Review Title Block

Name of operation	
Name of operator	
Development consent / project approval #	
Name of holder of development consent / project approval	
Mining lease #	
Name of holder of mining lease	
Water licence #	
Name of holder of water licence	
MOP/RMP start date	
MOP/RMP end date	
Annual Review start date	
Annual Review end date	
<p>I, [INSERT AUTHORISED REPORTING OFFICER NAME], certify that this audit report is a true and accurate record of the compliance status of [INSERT OPERATION NAME] for the period [INSERT REPORTING PERIOD] and that I am authorised to make this statement on behalf of [INSERT OPERATOR NAME].</p> <p>Note:</p> <p>a) The Annual Review is an 'environmental audit' for the purposes of section 122B(2) of the Environmental Planning and Assessment Act 1979. Section 122E provides that a person must not include false or misleading information (or provide information for inclusion in) an audit report produced to the Minister in connection with an environmental audit if the person knows that the information is false or misleading in a material respect. The maximum penalty is, in the case of a corporation, \$1 million and for an individual, \$250,000.</p> <p>b) The Crimes Act 1900 contains other offences relating to false and misleading information: section 192G (Intention to defraud by false or misleading statement—maximum penalty 5 years imprisonment); sections 307A, 307B and 307C (False or misleading applications/information/documents—maximum penalty 2 years imprisonment or \$22,000, or both).</p>	
Name of authorised reporting officer	
Title of authorised reporting officer	
Signature of authorised reporting officer	
Date	



APPENDIX D

CONSOLIDATED PROJECT APPROVAL 08_055 MOD1

ELF FARM SUPPLIES MUSHROOM SUBSTRATE PLANT CONSOLIDATED LIST OF CONDITIONS

This consolidated list of conditions has been created by combining MS Word versions of the original approval document and the MOD1 approval document, both supplied by the Department of Environment and Planning. The document has been created to enable easier reference to the conditions.

The MS word versions used are not official documents and the Department does not guarantee that they are correct. This compilation should not be relied upon for any legal purpose. The legal instruments are the signed pdf versions of the original approval and the MOD1 approval which have to be read together.

Only schedules 2, 3 and 5, relevant to Elf Farm Supplies' Substrate Plant are shown. Schedule 4 relevant to the Londonderry Mushroom Farm is not shown. Note that MOD1 contains the statement "*The modification relates to the Substrate Plant site only ...*", suggesting that the original conditions continue to apply to the mushroom farm site.

Changes or insertions created by MOD1 are **highlighted in yellow**. Superseded conditions deleted by MOD1 are not shown but can be found by reference to the original approval.

While this compilation has been carefully compiled, its accuracy cannot be guaranteed and it is again stressed that for legal certainty, the signed instruments of approval should be consulted.

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 Environment or its successors in title
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
EP&A Act	Environmental 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
Mitigation	Activities associated with reducing the impacts of the Project
MOD 1	The modification as described in the Environmental Assessment, titled <i>Mushroom Substrate Plant Modification to Approved Project Environmental Assessment</i> dated February 2015, prepared by Perram and Partners, the letter Response to Submissions titled <i>Mushroom Substrate Plant, Mulgrave Application to Modify Project Approval and Concept Plan Approval (08_0255 MOD 1)</i> , dated 29 August 2015, prepared by Perram and Partners and the <i>Assessment of Biofilter Filling</i> dated 17 December 2015, including the letter by WMA Water dated 21 January 2016, prepared by Perram and Partners
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
Noise Wall	As described in the EA
NOW	NSW Office of Water
Odour emissions plant	Ammonia scrubbers and biofilter as described in MOD 1
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	Development described in the EA as modified by MOD 1
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
RTA	Roads and Traffic Authority
Secretary	Secretary of the Department of Planning and Environment, or nominee
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	The 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) MOD 1.
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 Secretary 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 Secretary in accordance with condition 7 Schedule 2 below.
7.
 - (1) The Proponent may apply to the Secretary 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 Secretary 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 Secretary 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 Secretary under this condition; and
 - b) an independent audit of the site operating in this range has been prepared and submitted in accordance with Condition 5(c) of Schedule 3.

Production of up to 2,400 tonnes of phase 1 substrate a week may not occur until the Proponent has received the written approval of the Secretary.
 - (3) The Proponent may apply to the Secretary 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 Secretary under this condition; and
 - b) an independent audit of the site operating in this range has been prepared and submitted in accordance with Condition 5(c) of Schedule 3.

Production of up to a maximum of 3,200 tonnes of phase 1 substrate a week may not occur until the Proponent has received the written approval of the Secretary.

- (4) In deciding whether to approve an increase in substrate production under this condition, the **Secretary** must:
- assess the odour performance of the premises at its current rate of production; and
 - assess the likely odour impacts from the proposed increase; and
 - 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;
 - consider EPA advice regarding compliance with the POEO Act.

7A Unless otherwise agreed in writing by the Secretary, the Proponent shall ensure that the work associated with MOD 1, with the exception of the additional Phase 2/3 tunnels and the pre-wet tunnels to be constructed as part of Stage 3 (as identified on the plan in Appendix 2), has been constructed and is operating within two years from the date of the approval of MOD 1.

7B Nothing in this approval permits the construction of the landscaped mound along the Substrate Plant site's western boundary identified in the letter from WMA Water dated 21 January 2016.

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 **Secretary**.

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 8 of the EP&A Regulation sets out the requirements for the certification of the Project.

11A The Proponent shall ensure that any structures which require a relevant alternative solution developed to meet the performance requirements of the BCA shall be designed in consultation with Fire and Rescue NSW.

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 is:
- maintained in a proper and efficient condition; and
 - 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 **Secretary**, 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.
-

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 **Secretary**. This Plan must:
 - (a) be prepared in consultation with NOW and **EPA**;
 - (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.

1A The Proponent shall update the CEMP required by Condition 1 of Schedule 3 to include the works associated with MOD 1. The updated plan shall be submitted to and approved by the **Secretary** prior to the commencement of any construction works associated with MOD 1.

The revised CEMP shall be implemented throughout the construction works.

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.

Odour Emissions Plant Design and Construction

3. Prior to the commencement of construction of the works associated with MOD 1, the Proponent shall commission and pay the full cost of an independent odour specialist to review the detailed design of the odour emissions plant and assess its capacity to meet the performance criteria within the Environmental Assessment for MOD 1. The review shall:
 - (a) be provided to the **Secretary** and the **EPA** within two weeks of finalisation of the review; and
 - (b) be endorsed by the **Secretary** in consultation with the **EPA** prior to the commencement of construction of the works associated with MOD 1.

Should the review not certify that the odour emissions plant has the capacity to meet the performance criteria within the Environmental Assessment for MOD 1, then the Proponent shall undertake additional design to meet the criteria, to the satisfaction of the **Secretary** within the timeframe specified by the **Secretary**. The additional design is to be endorsed by the independent odour specialist.

3A The Proponent shall construct the odour emissions plant in accordance with the final design endorsed by the independent odour specialist required by Condition 3.

3B Prior to the commencement of operation of the odour emissions plant, the Proponent shall commission and pay the full cost of an independent odour specialist to certify that the 'as constructed' odour emissions plant has been undertaken in accordance with the final detailed design with reference to the Environmental Assessment for MOD 1 and the outcomes of Condition 3 of Schedule 3.

A copy of the certification is to be provided to the **Secretary** and the **EPA** within one week of its finalisation.

3C The Proponent shall implement all reasonable and feasible measures to ensure that all new structures are constructed to prevent corrosion from the atmosphere contained within those structures.

Odour Management Plan

4. The Proponent shall 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.

4A The Proponent shall update the Odour Management Plan for the Substrate Plant site, in consultation with the EPA, to the satisfaction of the Secretary. This plan is to update the plan approved under Condition 4 of Schedule 3 and shall:

- (a) be prepared 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 one month of the date of endorsement by the Secretary of the odour emissions plant design as required under Condition 3(a) of the approval;
- (c) identify all major sources of odour;
- (d) include management measures to ensure no offensive odours from the Substrate Plant site;
- (e) include procedures for the monitoring of odour emissions, in accordance with the requirements of the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales* and any requirements of the EPA. The odour monitoring program shall include, but not be limited to:
 - i. results of the complaints handling system; and
 - ii. system and performance review for continuous improvement;
- (f) include odour management performance parameters that are consistent with the manufacturers' performance guarantees provided for the biofilter and scrubbers;
- (g) include measures to prevent and/or mitigate fugitive emissions;
- (h) include triggers for remedial and contingency action; and
- (i) include contingency measures in the event of failure of any component of the odour emissions plant and biofilter system or identification of fugitive emissions from the facility. Contingency measures shall include enclosing the West Water Recycle pit and treating the post 36 hour emissions from the Phase 2/3 building via the ammonium scrubbers and biofilter.

4B The approved updated Plan (as revised and approved by the Secretary from time to time), shall be implemented for the life of the Project as soon as written endorsement by the Secretary is received.

Odour Emissions and Biofilter Control System Audit

5. The Proponent shall undertake an Odour Emissions and Biofilter Control System Audit to quantify the odour abatement efficiency of the odour emissions plant and assess the effectiveness of all other odour controls on the Substrate Plant site:

- (a) within six weeks of the commissioning of the biofilter;
- (b) within six weeks of the decommissioning of the bioscrubber;
- (c) prior to the commencement of each increase in production, in accordance with Conditions 7(2) and 7(3) of Schedule 2;
- (d) and as directed by the Secretary;
- (e) each audit required under (a) to (d) inclusive, shall:
 - i. be undertaken and prepared by a suitably qualified, experienced and independent expert whose appointment has been endorsed by the Secretary;
 - ii. be prepared in consultation with the EPA;
 - iii. report on the results of the source emissions sampling and analysis undertaken in accordance with the Odour Management Plan (required by Condition 4A of Schedule 3) or as otherwise agreed to in writing by the EPA;
 - iv. review the Proponent's production data (that are relevant to the audit) and complaints record;
 - v. review any complaints received during the relevant period;
 - vi. determine whether the Project is complying with condition 2 of Schedule 3; and, if necessary;
 - vii. recommend whether any additional management works and/or management practices are required to ensure no offensive odours from the Substrate Plant site.

6. Within 2 weeks of this audit being completed, or in a timeframe as otherwise agreed by the Secretary, the Proponent shall submit a copy of the audit report to EPA and the Secretary together with an action plan demonstrating how the findings of the audit are to be implemented.

6A Two months after the completion of the audits required under Conditions 5 (a) and 5(b) of Schedule 3, the Proponent shall submit to the satisfaction of the Secretary, a report verifying that any actions identified in the audit have been 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 **Secretary**.

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 **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.

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

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 of at the Substrate Plant site, except with the approval of the **Secretary** 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 **EPA** 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.
- 16A The Proponent shall ensure that the earthworks associated with the biofilter pad do not act as a source of sedimentation. The Proponent shall stabilise the area of fill associated with the biofilter within one week of the approval of MOD 1.
- 16B Prior to the commencement of construction of the biofilter, the Proponent shall submit to the **Secretary**, details demonstrating that the earthworks in the area of the biofilter have been:
 - (a) undertaken in accordance with AS 3798; and
 - (b) compacted to 98% Standard dry density ratio (AS1289 E4.1).

Water Management Plan

17. The Proponent shall 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**.

- 17A The Proponent shall prepare an updated Water Management Plan for the Substrate Plant site required by Condition 17 of Schedule 3 to include the works associated with MOD 1. The plan shall be submitted to the Secretary for approval prior to the commencement of operation of MOD 1.

Operation of works associated with MOD 1 shall not commence until the Proponent has received written approval of the plan. The approved Plan shall be implemented for the life of the Project.

- 17B The Proponent shall ensure that the western dam at the Substrate Plant site (identified on the plan in Appendix 2 of this approval) does not receive process water.

Notes: The dam may receive water from direct rainfall, area runoff and groundwater and during times of emergency.

- 17C Notwithstanding Condition 17B of Schedule 3, in the event of an emergency such as a high rainfall event or plant breakdown, the Proponent may use the western dam. Notification of any emergency use of the dam shall be provided to the Secretary in writing within 7 days of the emergency.

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
	L _{Aeq} (15 minute)
R1 – 46 Mulgrave Road, Mulgrave	52
R2 – Mulgrave Industrial area	65
R3 – 2 Railway Road, Mulgrave	52
R4 – 126 Mulgrave Road, Mulgrave	52
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
	L _{Aeq} (15 minute)	L _{Aeq} (15 minute)
R1 – 46 Mulgrave Road, Mulgrave	43	43
R2 – Mulgrave Industrial area	42	42
R3 – 2 Railway Road, Mulgrave	42	37
R4 – 126 Mulgrave Road	44	41
R5 – Chisholm Place, South Windsor	44	42

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 **Secretary**.

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 construct the 7 m high noise wall adjacent to the southern side of the bale storage shed or implement 'other noise mitigation measures' with the same or greater effect, prior to commencement of stage 2B construction works.

Should 'other noise mitigation measures' be implemented, the Proponent shall demonstrate, to the satisfaction of the Secretary, that the chosen measures will be as effective as modelled for the noise wall. Construction of Stage 2B cannot commence unless the Proponent has received the Secretary's approval for the 'other noise mitigation measures'.

Noise Management Plan

22. The Proponent shall 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.

- 22A The Proponent shall update the Noise Management Plan for the Substrate Plant site, to the satisfaction of the Secretary. This plan is to update the plan approved under Condition 22 of Schedule 3 and shall include:

- (a) the works associated with MOD 1; and
- (b) a revised monitoring protocol for evaluating compliance with the noise impact assessment criteria in this approval once all construction works associated with MOD 1 are complete.

- 22B Operation of works associated with MOD 1 shall not commence until the Proponent has received the Secretary's written approval of the plan. The approved Plan (as revised and approved by the Secretary from time to time), shall be implemented for the life of the Project as soon as written endorsement by the Secretary is received.

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 Secretary.

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(INT) 1995 – Control of Obtrusive Effects of Outdoor Lighting.

- 24A The Proponent shall prepare a Landscape Management Plan for the Substrate Plant site. The plan shall:

- (a) be prepared in consultation with Council;
- (b) identify screen planting to minimise visual impacts of the site, particularly the new biofilter; and
- (c) be approved by the Secretary prior to the commencement of construction of the works associated with MOD 1.

- 24B The landscaping around the site of the new biofilter required under MOD 1 shall be installed within three months following the completion of the construction of the biofilter. All other landscaping shall be installed prior to the commencement of operation of the works associated with MOD 1.

Signage

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

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.
-

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 Secretary. 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.

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. By the end of September 2016, and annually thereafter, unless otherwise agreed by the Secretary, the Proponent shall review the environmental performance of the Project to the satisfaction of the Secretary. This review must.
 - (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.

Independent Environmental Audit

3A Within six months of the approval of MOD 1, and every two years thereafter, unless otherwise agreed by the Secretary, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the Project. This audit must:

- (a) be conducted by suitably qualified, experienced and independent team of experts (including an odour expert), whose appointment has been endorsed by the Secretary;
- (b) include consultation with the relevant agencies;
- (c) include a full odour audit of the Project, taking into consideration the relevant technical guidelines and any odour complaints made since the previous audit;
- (d) assess the environmental performance of the project and assess whether it is complying with the relevant requirements in this approval and any other licenses and approvals that apply to the project, (including any assessment, plan or program required under these approvals);
- (e) review the adequacy of strategies, plans or programs required under these approvals; and, if appropriate;
- (f) recommend measures or actions to improve the environmental performance of the project, and/or any assessment, plan or program required under these approvals.

Within six weeks of the completing of this audit, or as otherwise agreed by the Secretary, the Proponent shall submit a copy of the audit report to the Secretary, together with its response to any recommendations contained in the audit report.

Revision of Plans & Programs

4. Within three months of the submission of an:
- (a) incident report under condition 5 of schedule 5;
 - (b) review under condition 3 of schedule 5, and
 - (c) audit under condition 3A of Schedule 5,

the Proponent shall review, and if necessary revise the plans and programs required under this approval to the satisfaction of the Secretary.

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 Secretary 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 Secretary and any relevant agencies with a detailed report on the incident.

Access to Information

6. The Proponent shall prepare a Community Consultation Strategy for the Substrate Plant site to address existing and future operations at the Substrate Plant site, including construction of works associated with MOD 1. This Plan shall:

- (a) be submitted to the satisfaction of the Secretary within one month from the approval of MOD 1;
- (b) include procedures for updating the community on the general operation of the site as well as the progress of any construction works; including
 - i. a newsletter for the local community which details the:
 - construction activities and the expected duration of works;
 - a general summary of the environmental management to be implemented; and
 - telephone number for taking complaints or enquiries in relation to the activities;
 - ii. the website required by Condition 7 of Schedule 5; and
 - iii. public meetings;
- (c) describe the distribution area for the newsletter (at a minimum all residents within 2 km from the site boundary), prepared in consultation with Council; and
- (d) include procedures for handling and monitoring all complaints received; and detail what management and/or contingency actions will be taken if complaints are received.

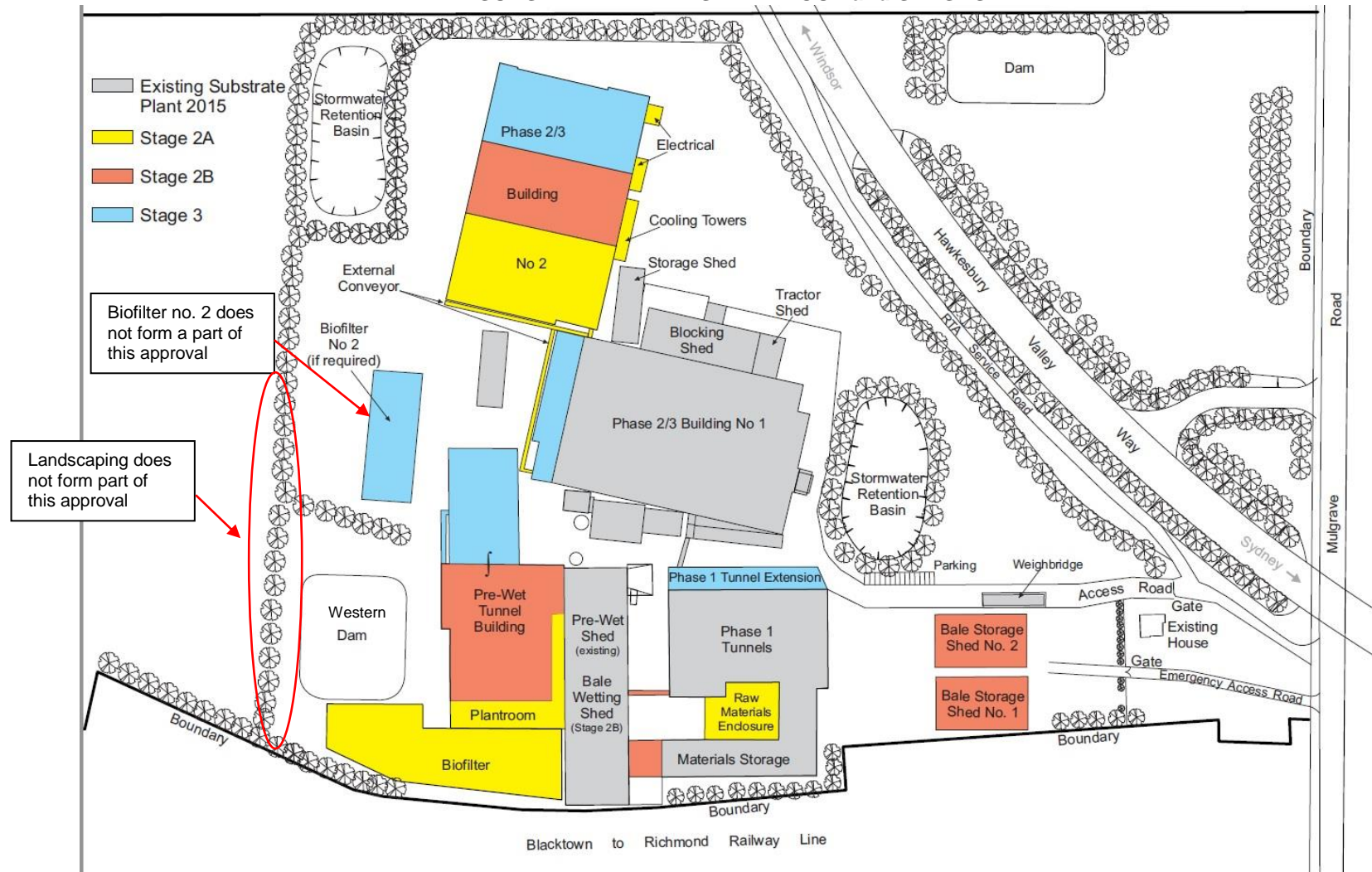
7. The approved Strategy (as revised and approved by the Secretary from time to time), shall be implemented for the life of the Project as soon as written endorsement by the Secretary is received.

8. Within three months from the date of the approval of MOD 1, the Proponent shall make the following information (unless commercially sensitive) freely available on a publicly accessible website, as it is progressively required under the approval:
- (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; and
 - (g) any other material as required by the Secretary.

APPENDIX 1

The revised proponent's statement of commitments forms part of the conditions

APPENDIX 2 SUBSTRATE PLANT SITE LAYOUT and STAGES





APPENDIX E

MONITORING REPORTS

Monday 5 November 2018

Elf Farm Supplies Pty Ltd
108 Mulgrave Road
MULGRAVE NSW 2756

Our Reference 160787-01-03L-DD

For the attention of Blake Edwards

**Operational Noise Compliance Measurement
Mushroom Substrate Plant – 108 Mulgrave Road, Mulgrave**

1.0 INTRODUCTION

This report provides the findings for the site inspections, measurements of operational noise levels and assessment of compliance with the operational noise assessment objectives set out in Approval MP 08_0255 MOD 1 dated 14 March 2016 for the Mushroom Substrate Plant at 108 Mulgrave Road, Mulgrave.

2.0 NOISE ASSESSMENT OBJECTIVE

With reference to Approval MP 08_0255 MOD 1 dated 14 March 2016, operational noise assessment objectives for the Mulgrave Mushroom Substrate Plant are as follows:

- 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 L_{Aeq} (15 minute)	Night L_{Aeq} (15 minute)
<i>R1 – 46 Mulgrave Road, Mulgrave</i>	43	43
<i>R2 – Mulgrave Industrial Area</i>	42	42
<i>R3 – 2 Railway Road, Mulgrave</i>	42	37
<i>R4 – 126 Mulgrave Road, Mulgrave</i>	44	41
<i>R5 – Chisholm Place, South Windsor</i>	44	42

Note: 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.

It is noted that *Receiver Location R2* was a residential dwelling located in an industrial area. This dwelling has been demolished and the site is currently vacant land being advertised for sale for industrial unit development.

Accordingly, the noise assessment objective at *Receiver Location R2* is revised to 70dB(A) $L_{Aeq,15min}$ when occupied.

3.0 PREDICTED OPERATIONAL NOISE

Table 1 presents the predicted cumulative operational noise levels, extracted from Atkins Acoustics and Associates' *Report No. 40.6411.R1:CFCD4 Rev03* (Operation and Construction Noise Impact Assessment – Mushroom Substrate Plant, Mulgrave) dated June 2010 and *Report No. 45.6932.L2:CFCD7* (Acoustic Review – Modified Operations – Mushroom Substrate Plant, Mulgrave) dated 17 February 2015. The predicted operational noise levels vary, depending on meteorological conditions.

Table 1 ***Predicted $L_{Aeq,15min}$ Operational Noise Level, dB(A)***

Receiver Location	Predicted $L_{Aeq,15min}$ Noise Level, dB(A)	
	Atkins Acoustics Report No. 40.6411.R1:CFCD4 Rev03	Atkins Acoustics Report No. 45.6932.L2:CFCD7
R1 – 46 Mulgrave Road, Mulgrave	31-42	37-43
R2 – Mulgrave Industrial Area	35-38	38-40
R3 – 2 Railway Road, Mulgrave	32-36	35-37
R4 – 126 Mulgrave Road, Mulgrave	35-39	37-41
R5 – Chisholm Place, South Windsor	31-38	39-42

4.0 NOISE MEASUREMENT

Site inspections and noise measurements during day, evening and night operations were conducted from:

- 2:15pm-5:00pm on Thursday afternoon 25 October 2018. Weather conditions were fine and calm with occasional breeze at times;
- 6:40pm-8:50pm on Wednesday evening 31 October 2018. Weather conditions were fine and calm with occasional slight breeze at times; and
- 10:00pm-12:15am Wednesday night/Thursday morning 31 October/1 November 2018. Weather conditions were fine and very calm/still.

Noise measurements were conducted at:

- R1 outside the fence of the residential dwelling (between the residence and the Mushroom Substrate Plant) within the industrial premises (Plant Haul Heavy Haulage) at 46 Mulgrave Road, Mulgrave during daytime. During evening and night, the property was not accessible and measurements were conducted on the eastern site boundary along Mulgrave Road, at similar distance to the Mushroom Substrate Plant. In any case, it would not be possible to undertake noise measurements at the residence during evening and night due dogs on the premises (dogs barking constantly at strangers. The owners controlled the dogs during the daytime noise measurement).

- R2 outside the fence of the vacant lot at 103 Mulgrave Road, Mulgrave. This property was previously identified as a residence within an industrial area. However, the residence has been demolished and the currently vacant land is being advertised for sale for industrial unit development.
- R3 outside the fence of the residence at 2 Railway Road, Mulgrave.
- R4 outside the nearest dwelling of 124 Mulgrave Road, Mulgrave between the residence and the Mushroom Substrate Plant. This property was identified as 126 Mulgrave Road, Mulgrave previously. However, checking with NSW Government Spatial Services and the property owner confirmed that the property address is 124 Mulgrave Road, Mulgrave.
- R5 at the fence of the vacant land of 4 Chisholm Place, Windsor

Observations during the site inspections and measurements confirmed that background and ambient noise environment was controlled by other noise sources unrelated to the Mushroom Substrate Plant. These include road traffic, birds, roosters, dog barking, intermittent train pass-bys, train horn, signal from rail level crossing, train idling at Mulgrave Railway Station waiting for trains in opposite direction to pass (controlled by the rail level crossing), PA announcements at Mulgrave Railway Station and insects and frogs in the evening and at night.

In the evening and at night, industrial type noise from east (east of Hawkesbury Valley Way) was clearly audible at receiver locations R1 to R4 during the site inspections. Acoustic Consulting Engineers Pty Ltd could not identify the noise source(s). A local resident commented that the noise was due to concrete batching plant.

Except for Receiver R5, noise from the Mushroom Substrate Plant was inaudible and unidentifiable at all times during the site inspections and measurements.

At Receiver R5, industrial noise hum from the west was observed (during evening and night) to be higher than that from the east. From the site inspection, it was not clear whether industrial noise from the east was due to the Mushroom Substrate Plant or concrete batching plant to east of Hawkesbury Valley Way.

From the site inspections of Thursday afternoon 25 October 2018, Wednesday evening 31 October 2018 and Wednesday night/Thursday morning 31 October/1 November 2018, it is considered that noise from Mushroom Substrate Plant was minimal and below the assessment objectives presented in *Section 2.0*.

For information purposes, *Table 2* presents the measured noise levels and notes from site observations. As discussed above, the measured noise levels were from noise sources unrelated to the Mushroom Substrate Plant and are provided for information only.

Table 2 **Measured Noise Level and Site Observation**

Receiver Location		Measured 15-minute Noise Level, dB(A)	Identified Noise Sources
<i>2:15pm-5:00pm on Thursday afternoon 25 October 2018</i>			
R1	46 Mulgrave Road, Mulgrave	52dB(A) $L_{Aeq,15min}$ 46dB(A) $L_{A90,15min}$	Road traffic, birds and dog barking
R2	103 Mulgrave Road, Mulgrave	63dB(A) $L_{Aeq,15min}$ 52dB(A) $L_{A90,15min}$	Road traffic and adjoining industry (Trueform Frames and Trusses Pty Ltd) at 99 Mulgrave Road
R3	2 Railway Road, Mulgrave	58dB(A) $L_{Aeq,15min}$ 48dB(A) $L_{A90,15min}$	Road traffic, birds, roosters, dog barking, trains, train horn and rail level crossing signal
R4	124 Mulgrave Road, Mulgrave	56dB(A) $L_{Aeq,15min}$ 47dB(A) $L_{A90,15min}$	Road traffic, birds, roosters, trains, train horn and rail level crossing signal
R5	4 Chisholm Place, South Windsor	49dB(A) $L_{Aeq,15min}$ 43dB(A) $L_{A90,15min}$	Birds, dog barking, distant road traffic and trains
<i>6:40pm-8:50pm on Wednesday evening 31 October 2018</i>			
R1	46 Mulgrave Road, Mulgrave	50dB(A) $L_{Aeq,15min}$ 46dB(A) $L_{A90,15min}$	industrial type noise hum to the east of Hawkesbury Valley Way, insects, frogs and distant road traffic (trucks and truck brakes)
R2	103 Mulgrave Road, Mulgrave	62dB(A) $L_{Aeq,15min}$ 44dB(A) $L_{A90,15min}$	road traffic, trains, rail level crossing signal and industrial type noise hum to the east of Hawkesbury Valley Way
R3	2 Railway Road, Mulgrave	51dB(A) $L_{Aeq,15min}$ 43dB(A) $L_{A90,15min}$	industrial type noise hum to the east of Hawkesbury Valley Way, distant road traffic, birds, trains, PA announcements at Mulgrave Railway Station and dog barking
R4	124 Mulgrave Road, Mulgrave	49dB(A) $L_{Aeq,15min}$ 43dB(A) $L_{A90,15min}$	birds, distant road traffic, trains and industrial type noise hum to the east of Hawkesbury Valley Way
R5	4 Chisholm Place, South Windsor	46dB(A) $L_{Aeq,15min}$ 36dB(A) $L_{A90,15min}$	industrial type noise hum to the west and to east of Hawkesbury Valley Way, frogs, insects, distant road traffic and trains

Table 2 *Measured Noise Level and Site Observation (contd.)*

Receiver Location		Measured 15-minute Noise Level, dB(A)	Identified Noise Sources
<i>10:00pm-12:15pm on Wednesday night/Thursday morning 31 October/1 November 2018</i>			
R1	46 Mulgrave Road, Mulgrave	48dB(A) $L_{Aeq,15min}$ 44dB(A) $L_{A90,15min}$	industrial type noise hum to east of Hawkesbury Valley Way, insects, frogs and distant road traffic
R2	103 Mulgrave Road, Mulgrave	47dB(A) $L_{Aeq,15min}$ 32dB(A) $L_{A90,15min}$	road traffic, industrial noise was not present
R3	2 Railway Road, Mulgrave	47dB(A) $L_{Aeq,15min}$ 34dB(A) $L_{A90,15min}$	road traffic, insects, frogs and dog barking, industrial noise was not present
R4	124 Mulgrave Road, Mulgrave	46dB(A) $L_{Aeq,15min}$ 41dB(A) $L_{A90,15min}$	industrial type noise hum to east of Hawkesbury Valley Way, road traffic, trains, train idling at Mulgrave Railway Station waiting for train in opposite direction to pass, PA announcement at Mulgrave Railway Station, insects, frogs and dog barking
R5	4 Chisholm Place, South Windsor	45dB(A) $L_{Aeq,15min}$ 33dB(A) $L_{A90,15min}$	industrial type noise hum to the west and to east of Hawkesbury Valley Way, frogs, dog barking and trains

We trust the information in this report is satisfactory. Please do not hesitate to contact our office should further information or clarification be required.

Yours sincerely,



Dan Dang
Principal Acoustic Engineer
Acoustic Consulting Engineers Pty Ltd



TODOROSKI
AIR SCIENCES

FIELD ODOUR SURVEY – ELF FARM SUPPLIES

Elf Farm Supplies

21 March 2019

Job Number 18090878

Prepared by

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Field Odour Survey – Elf Farm Supplies

DOCUMENT CONTROL

Report Version	Date	Prepared by	Reviewed by
DRAFT - 001	19/03/2019	P Henschke & K Trahair	A Todoroski
FINAL - 001	21/03/2019	P Henschke	

This report has been prepared in accordance with the scope of works between Todoroski Air Sciences Pty Ltd (TAS) and the client. TAS relies on and presumes accurate the information (or lack thereof) made available to it to conduct the work. If this is not the case, the findings of the report may change. TAS has applied the usual care and diligence of the profession prevailing at the time of preparing this report and commensurate with the information available. No other warranty or guarantee is implied in regard to the content and findings of the report. The report has been prepared exclusively for the use of the client, for the stated purpose and must be read in full. No responsibility is accepted for the use of the report or part thereof in any other context or by any third party.

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1 INTRODUCTION

Todoroski Air Sciences has conducted a field odour survey as part of the *Odour Management Plan Elf Farm Supplies Substrate Facility* (**Todoroski Air Sciences, 2017**) at Elf Farm Supplies (EFS), in Mulgrave, New South Wales (NSW).

This report presents the findings of the field odour survey conducted on 19 February 2019.

The field odour survey was conducted at three sites in areas representative of sensitive receptor locations, downwind of the EFS site using a simplified VDI methodology to determine the extent of, if any, odours detected offsite associated with the EFS site.

This report comprises:

- ✦ A background to EFS and description of the site operations;
- ✦ A brief description of the field odour survey methodology; and,
- ✦ Presentation of the field odour survey findings.



2 BACKGROUND AND SETTING

2.1 Project description

EFS 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.

The facility has been recently updated and features a large new biofilter and ammonia scrubbers to manage odour. The previous bio-scrubber and associated chimney has been decommissioned.

2.2 Project location

The EFS site is located at 108 Mulgrave Road, Mulgrave, situated alongside a main road and a railway line. The surrounding land use features include an industrial/commercial area, a train station, a market garden and residential areas positioned to the northwest and southeast of the EFS site (refer to **Figure 2-1**). The new biofilter has been located in the southwest corner of the site, adjacent to the Blacktown - Richmond railway line.

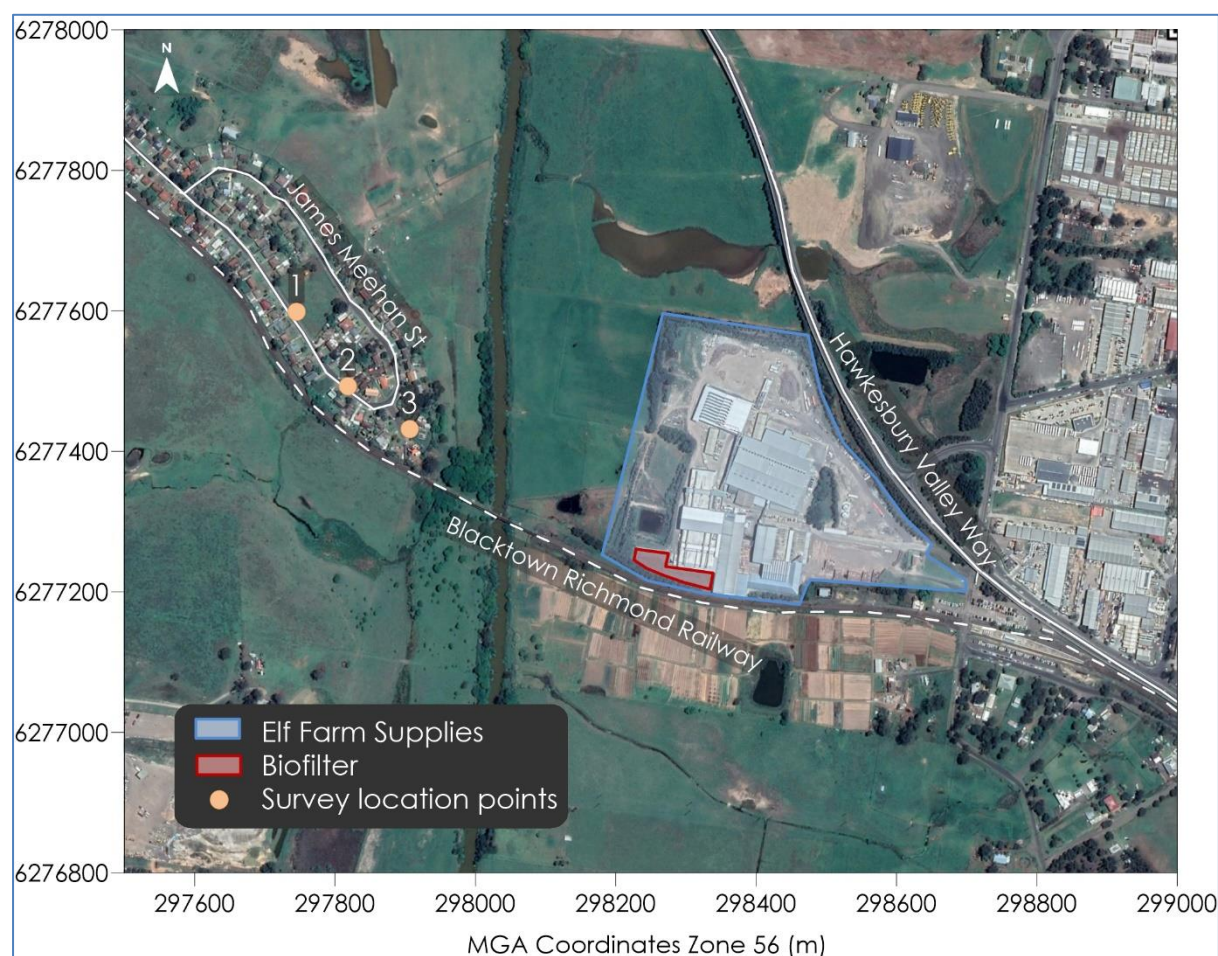


Figure 2-1: EFS location and setting

3 SURVEY METHODOLOGY

The field odour survey methodology is based on a simplified version of the German Standard VDI 3940 "Determination of Odorants in Ambient Air by Field Inspections". This prescribes a methodology for the quantification of odour by field observers (assessors) in relation to odour frequency, intensity and characteristics.

The purpose of the field odour survey is to determine if offensive odours arising from the MOD 1 Project can be detected offsite.

3.1 Odour intensity and descriptor

During the field odour survey, a measurement is taken at each location over a period of 10 minutes. The assessor tests the ambient air at 10 second intervals with the intensity of the odour and the odour characteristic observed during this time recorded.

Table 3-1 and **Table 3-2** below present the odour intensity rating scale and odour characteristic descriptors, respectively, applied for the field odour survey.

Table 3-1: Odour intensity rating scale

Rating	Intensity description
0	No odour
1	Very slight
2	Slight
3	Distinct
4	Strong
5	Very strong
6	Extremely strong

Table 3-2: Odour characteristic descriptors

Odour type code	Odour characteristic descriptor	Odour type code	Odour characteristic descriptor
1	Fragrant	9	Faecal, manure, sewer
2	Household gas	10	Fishy
3	Burnt smoky	11	Diesel/car fumes
4	Herbal, green, cut grass	12	Seaweed, mangroves
5	Oily, fatty	13	Compost
6	Rotten eggs, sulfide	14	Musty, earthy, mouldy
7	Sour, body odour	15	Other
8	Meaty		

3.2 Assessor selection

As per VDI 3940, the suitability of a potential assessor is determined via a series of odour sensitivity test with the reference odorant n-butanol.

Two suitable assessors were selected to participate in the field odour survey.



3.3 Survey locations

The field odour survey locations were selected based on the location of the EFS relative to the nearest sensitive receptors and the prevailing wind conditions at the time of the survey.

The location of EFS and the survey locations used in this field odour survey are presented in **Table 3-3** and shown in **Figure 2-1**.

Table 3-3: Survey locations

Survey Location Identification	Address	Distance from EFS site (km)	Number of measurements at location
1	41A James Meehan Street, Windsor	0.6	2
2	2/53 James Meehan Street Windsor	0.5	2
3	3 Chisholm Place, Windsor	0.4	2

3.4 Meteorological monitoring

Local meteorological conditions were recorded during the survey period using a Kestrel 4500 Pocket Weather Tracker positioned nearby the measurement locations and the EFS on-site weather station.



4 FIELD ODOUR SURVEY

The field odour survey was conducted on 19 February 2019 between approximately 12:30pm and 1:15pm.

The general approach of the survey was to start at a location furthest from the EFS site and to gradually work closer, mapping the extent of the detectable odours in the downwind residential area.

The survey was timed to coincide with conditions when odour effects would be detected off-site, i.e. when winds are relatively low and blow towards receptors. Several survey attempts had to be postponed due to above average air dispersion conditions developing, or winds blowing into areas that were not accessible.

This survey period spans the most likely impacting conditions that were able to be sampled during the survey period.

4.1 Meteorological monitoring

Windroses from the EFS on-site weather station and Kestrel during the survey period are presented in **Figure 4-1** and **Figure 4-2** respectively.

The wind direction during the survey period predominately occurred from the southeast quadrant. The EFS weather station predominately recorded winds from the south-southeast. The Kestrel data depicts more moderate winds predominately from the southeast and east-southeast. Note that it is expected that stronger winds would be recorded at the EFS weather station due to the 10 metre (m) high station positioned on top of a building compared to the Kestrel instrument positioned at a height of approximately 1.6m.

Ambient temperature at the survey locations ranged from approximately 30.9°C to 35.7°C.



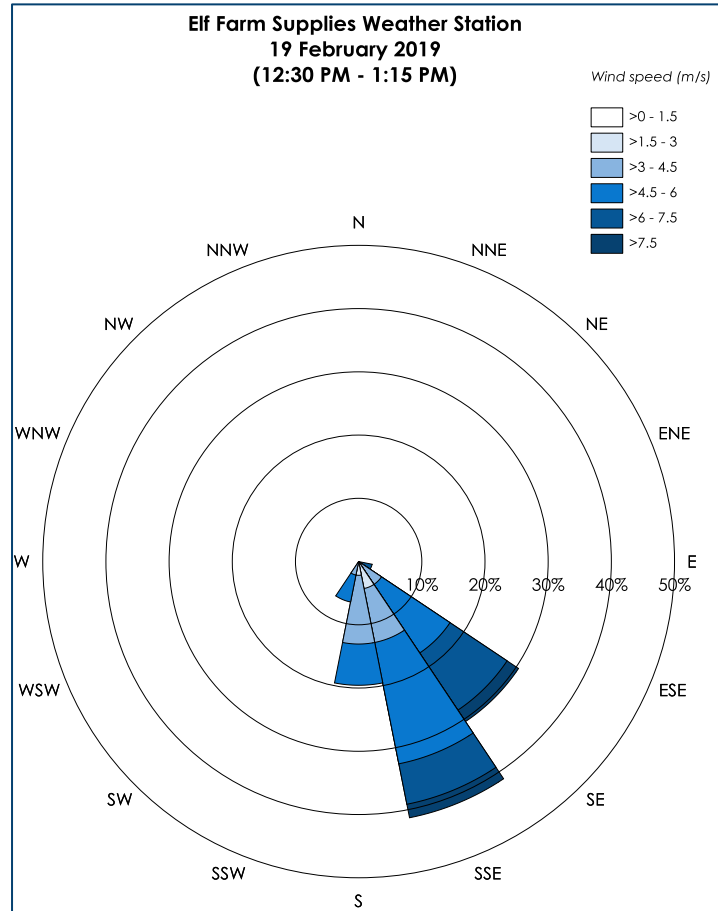


Figure 4-1: Windrose - Elf Farm Supplies, 19 February 2019, 12:30 - 1:15 PM

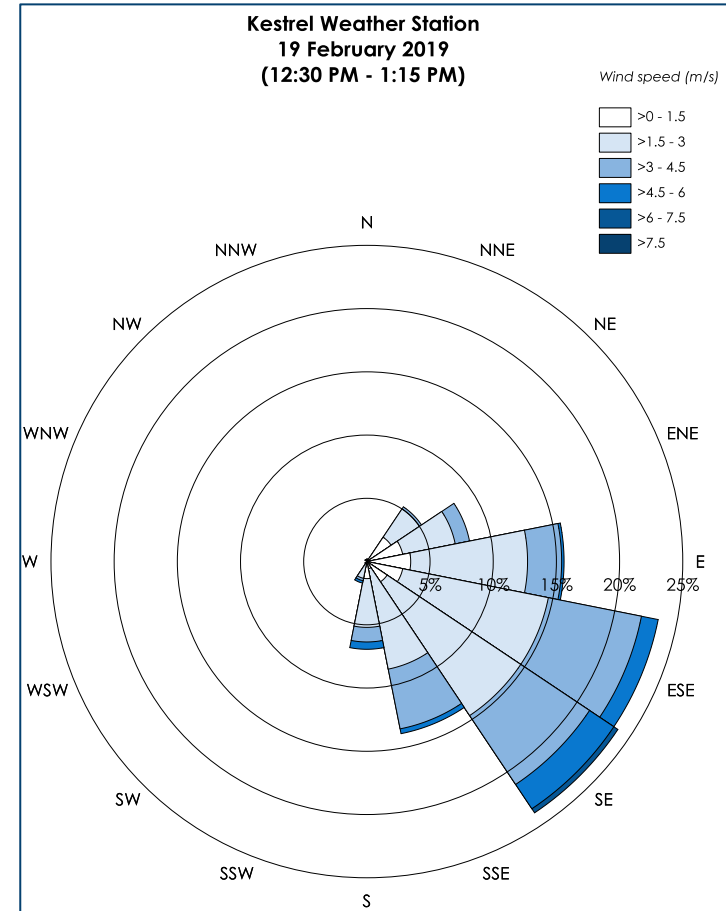


Figure 4-2: Windrose - Kestrel weather station, 19 February 2019, 12:30 PM - 1:15 PM

4.2 Monitoring results

A summary of the results for the field odour surveys conducted at each location is presented below.

Figure 4-3 displays the percentage of odour observations per intensity. The figure indicates that “no odour” was predominately observed at each location during the survey with the intensity of odours detected ranging from very slight to distinct.

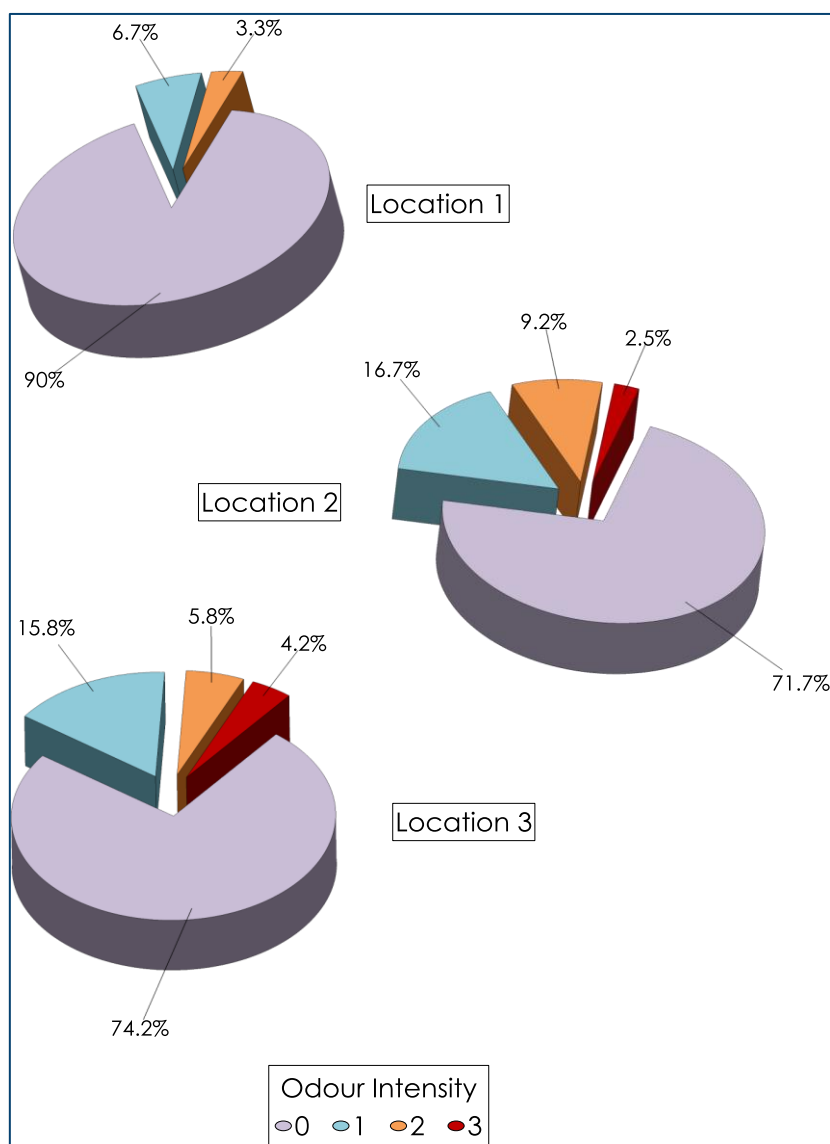


Figure 4-3: Percentage of odour observation per intensity

Table 4-1 presents the percentage of odour observations per odour characteristic and intensity identified at each survey location point.

The most common observed odour across all three location points correspond to an odour characteristic of “faecal, manure, sewer”. Higher frequencies of this odour was observed closer towards the EFS site, with an increasing level of odour intensity.

A very slight and slight and infrequent “musty, earthy, mouldy” odour was detected at location 3.

Other odours characterised as “grass/straw” and “chlorine” were identified at location 1 and 2 and were attributed to non-Elf sources in the immediate area.

Table 4-1: Percentage of odour observation per odour characteristic and odour intensity

Odour Characteristic		Odour Intensity	Location		
			1	2	3
9 - Faecal, manure, sewer		1	2.5	15.0	15.0
		2	-	9.2	5.8
		3	-	2.5	4.2
		Total	2.5	26.7	25.0
14 - Musty, earthy, mouldy		1	-	-	0.8
		2	-	-	0.8
		3	-	-	-
		Total	-	-	1.7
15 - other	Grass/ straw	1	4.2	1.7	-
		2	3.3	-	-
		3	-	-	-
		Total	7.5	1.7	-
	Chlorine	1	-	0.8	-
		2	-	-	-
		3	-	-	-
		Total	-	0.8	-

4.3 Onsite validation

After the field odour survey was completed, the assessors went onto the EFS site in order to identify the potential onsite sources of any odours detected.

The “faecal, manure, sewer” odour characteristic recorded during the survey was characterised by one of the assessors as chicken manure. The EFS includes storage of chicken manure on-site. Upon inspection, this assessor determined the chicken manure odour on-site to have a different characteristic of more aged and dried manure odour rather than the fresh wet manure characteristic detected during the survey. The second assessor was unable to distinguish the manure smell on-site with that offsite, and considered both to be similar.

It was noted that at the time of the inspection, a doorway to the chicken manure storage shed on site was open and odour could have escaped and potentially thus had the potential to be detected off-site. It is also noted that a market garden located immediately south of EFS could be a potential source of this type of odour.

The “musty, earthy, mouldy” odour was only identified with an intensity of very slight and slight and very infrequently, and thus cannot be confirmed to have originated from EFS.

The biofilter on the site has an odour characteristic of “musty, earthy, mouldy” and in terms of volume and quantity of odour released is a constant and far larger source of emissions than an open doorway to the manure storage shed, albeit with a more natural and less intrusive odour character. For trained assessors in the field, it would not be possible to detect odour from the manure storage shed without detecting far more of the “musty, earthy, mouldy” odour. As the “musty, earthy, mouldy” was very slight or slight and very infrequent, the EFS manure storage shed is ruled out as being the likely source of the “faecal, manure, sewer” odour detected in the residential area.

5 SUMMARY AND CONCLUSIONS

The field odour survey conducted on 19 February 2019 detected very slight to distinct odours at the three survey location points.

The main odour detected during the survey was characteristic of chicken manure however it was considered that it could not have originated from the EFS site.

No odour associated with EFS was able to be identified during the survey. Some very slight and slight "musty, earthy, mouldy" odour was infrequently detected, and may possibly be related to the bio filter, but this could not be reasonably established. Regardless, this odour could not be described as offensive.

Additional field odour surveys are planned for each quarter of 2019 to verify the effectiveness of odour control measures at the EFS site.



6 REFERENCES

Todoroski Air Sciences (2017)

"Odour Management Plan Elf Farm Supplies Substrate Facility", prepared for Elf Farm Supplies Pty Ltd by Todoroski Air Sciences, December 2017

VDI 3940 (1993)

"Verein Deutscher Ingenieure (VDI) 3940: Determination of Odorants in Ambient Air by Field Inspections", October 1993





TODOROSKI
AIR SCIENCES

FIELD ODOUR SURVEY – ELF FARM SUPPLIES

Elf Farm Supplies

27 May 2019

Job Number 18090878

Prepared by

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Field Odour Survey – Elf Farm Supplies

DOCUMENT CONTROL

Report Version	Date	Prepared by	Reviewed by
DRAFT – 001 (Odour Survey 1)	19/03/2019	P Henschke & K Trahair	A Todoroski
FINAL – 001 (Odour Survey 1)	21/03/2019	P Henschke	
DRAFT – 001 (Odour Survey 2)	16/05/2019	P Henschke & K Trahair	D Kjellberg
DRAFT – 002 (Odour Survey 2)	21/05/2019	P Henschke & K Trahair	
FINAL – 002 (Odour Survey 2)	27/05/2019	K Trahair	

This report has been prepared in accordance with the scope of works between Todoroski Air Sciences Pty Ltd (TAS) and the client. TAS relies on and presumes accurate the information (or lack thereof) made available to it to conduct the work. If this is not the case, the findings of the report may change. TAS has applied the usual care and diligence of the profession prevailing at the time of preparing this report and commensurate with the information available. No other warranty or guarantee is implied in regard to the content and findings of the report. The report has been prepared exclusively for the use of the client, for the stated purpose and must be read in full. No responsibility is accepted for the use of the report or part thereof in any other context or by any third party.

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1 INTRODUCTION

Todoroski Air Sciences has conducted a field odour surveys as part of the *Odour Management Plan Elf Farm Supplies Substrate Facility* (**Todoroski Air Sciences, 2017**) at Elf Farm Supplies (EFS), in Mulgrave, New South Wales (NSW).

This report presents the findings of the field odour surveys conducted on 19 February 2019 and 8 May 2019.

Each field odour survey was conducted at three sites in areas representative of sensitive receptor locations downwind of the EFS site using a simplified VDI methodology to determine the extent of, if any, odours detected off-site associated with the EFS site.

This report comprises:

- ✦ A background to EFS and description of the site operations;
- ✦ A brief description of the field odour survey methodology; and,
- ✦ Presentation of the field odour survey findings.



2 BACKGROUND AND SETTING

2.1 Project description

EFS 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.

The facility has been recently updated and features a large new biofilter and ammonia scrubbers to manage odour. The previous bio-scrubber and associated chimney has been decommissioned.

2.2 Project location

The EFS site is located at 108 Mulgrave Road, Mulgrave, situated alongside a main road and a railway line. The surrounding land use features include an industrial/commercial area, a train station, a market garden and residential areas positioned to the northwest and southeast of the EFS site (refer to **Figure 2-1**). The new biofilter has been located in the southwest corner of the site, adjacent to the Blacktown - Richmond railway line.



Figure 2-1: EFS location and setting

3 SURVEY METHODOLOGY

The field odour survey methodology is based on a simplified version of the German Standard VDI 3940 "Determination of Odorants in Ambient Air by Field Inspections". This prescribes a methodology for the quantification of odour by field observers (assessors) in relation to odour frequency, intensity and characteristics.

The purpose of the field odour surveys is to determine if offensive odours arising from the MOD 1 Project can be detected offsite.

3.1 Odour intensity and descriptor

During the field odour survey, a measurement is taken at each location over a period of 10 minutes. The assessor tests the ambient air at 10-second intervals with the intensity of the odour and the odour characteristic observed during this time recorded.

Table 3-1 and **Table 3-2** below present the odour intensity rating scale and odour characteristic descriptors, respectively, applied for the field odour survey.

Table 3-1: Odour intensity rating scale

Rating	Intensity description
0	No odour
1	Very slight
2	Slight
3	Distinct
4	Strong
5	Very strong
6	Extremely strong

Table 3-2: Odour characteristic descriptors

Odour type code	Odour characteristic descriptor	Odour type code	Odour characteristic descriptor
1	Fragrant	9	Faecal, manure, sewer
2	Household gas	10	Fishy
3	Burnt smoky	11	Diesel/car fumes
4	Herbal, green, cut grass	12	Seaweed, mangroves
5	Oily, fatty	13	Compost
6	Rotten eggs, sulfide	14	Musty, earthy, mouldy
7	Sour, body odour	15	Other
8	Meaty		

3.2 Assessor selection

As per VDI 3940, the suitability of a potential assessor is determined via a series of odour sensitivity tests with the reference odorant n-butanol.

Two suitable assessors were selected to participate in the field odour surveys.



3.3 Survey locations

The field odour survey locations were selected based on the location of the EFS relative to the nearest sensitive receptors and the prevailing wind conditions at the time of the survey.

The location of EFS and the survey locations used in the field odour surveys are presented in **Table 3-3** and shown in **Figure 2-1**.

Table 3-3: Survey locations

Survey location identification	Address	Distance from EFS site (km)
1	41A James Meehan Street, Windsor	0.6
2	2/53 James Meehan Street Windsor	0.5
3	3 Chisholm Place, Windsor	0.4
4	63 Groves Avenue South, Mulgrave	0.5
5	151-153 Mulgrave Road, Mulgrave	0.4
6	2 Railway Road South, Mulgrave	0.3

3.4 Meteorological monitoring

Local meteorological conditions were recorded during the survey period using a Kestrel 4500 Pocket Weather Tracker positioned nearby the measurement locations and the EFS on-site weather station.



4 FIELD ODOUR SURVEY

4.1 Odour Survey 1 - 19 February 2019

The field odour survey 1 was conducted on 19 February 2019 between approximately 12:30pm and 1:15pm.

The general approach of the survey was to start at a location furthest from the EFS site and to gradually work closer, mapping the extent of the detectable odours in the downwind residential area.

The survey was timed to coincide with conditions when odour effects would be detected off-site, i.e. when winds are relatively low and blow towards receptors. Several survey attempts had to be postponed due to above average air dispersion conditions developing, or winds blowing into areas that were not accessible.

4.1.1 Meteorological monitoring

Windroses from the EFS on-site weather station and Kestrel during the survey period are presented in **Figure 4-1** and **Figure 4-2** respectively.

The wind direction during the survey period predominately occurred from the southeast quadrant. The EFS weather station predominately recorded winds from the south-southeast. The Kestrel data depicts more moderate winds predominately from the southeast and east-southeast. Note that it is expected that stronger winds would be recorded at the EFS weather station due to the 10 metre (m) high station positioned on top of a building compared to the Kestrel instrument positioned at a height of approximately 1.6m.

Ambient temperature at the survey locations ranged from approximately 30.9°C to 35.7°C.



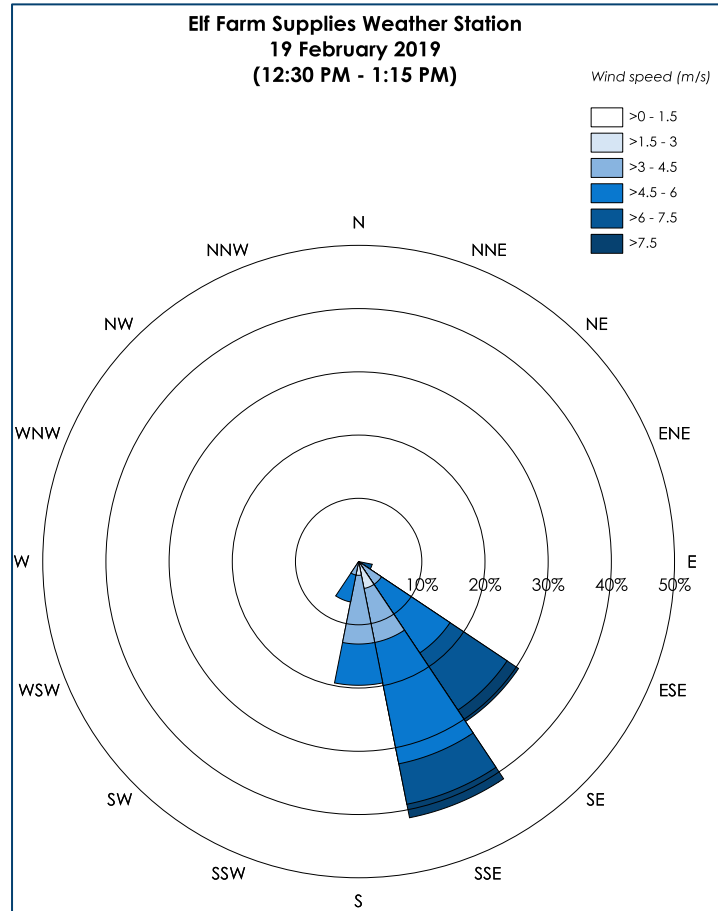


Figure 4-1: Windrose - Elf Farm Supplies, 19 February 2019, 12:30 - 1:15 PM

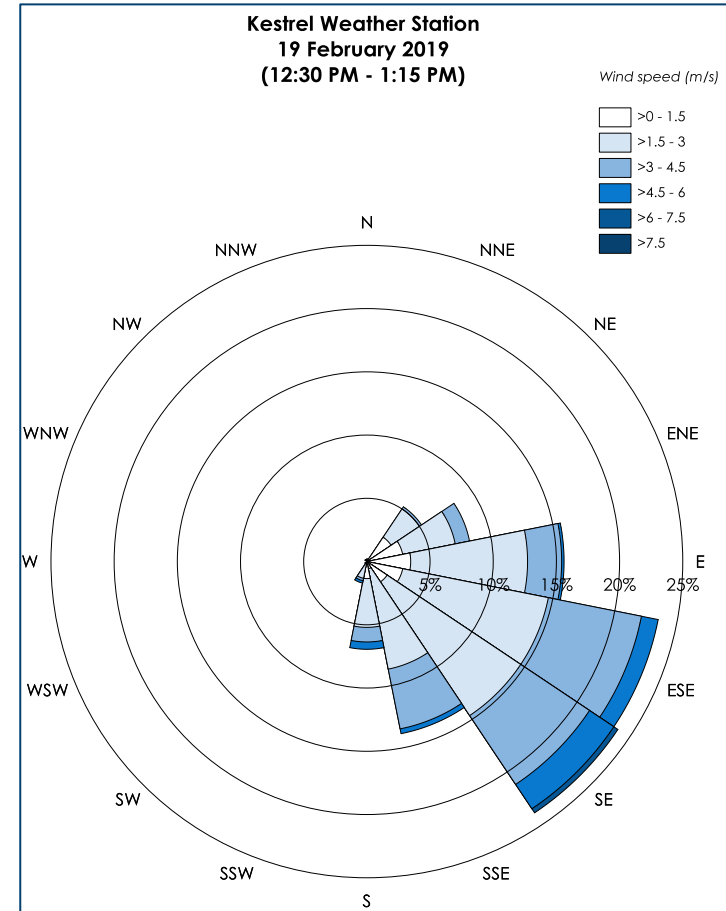


Figure 4-2: Windrose - Kestrel weather station, 19 February 2019, 12:30 PM - 1:15 PM

4.1.2 Monitoring results

A summary of the results for the field odour surveys conducted at each location is presented below.

Figure 4-3 displays the percentage of odour observations per intensity. The figure indicates that “no odour” was predominately observed at each location during the survey with the intensity of odours detected ranging from very slight to distinct.

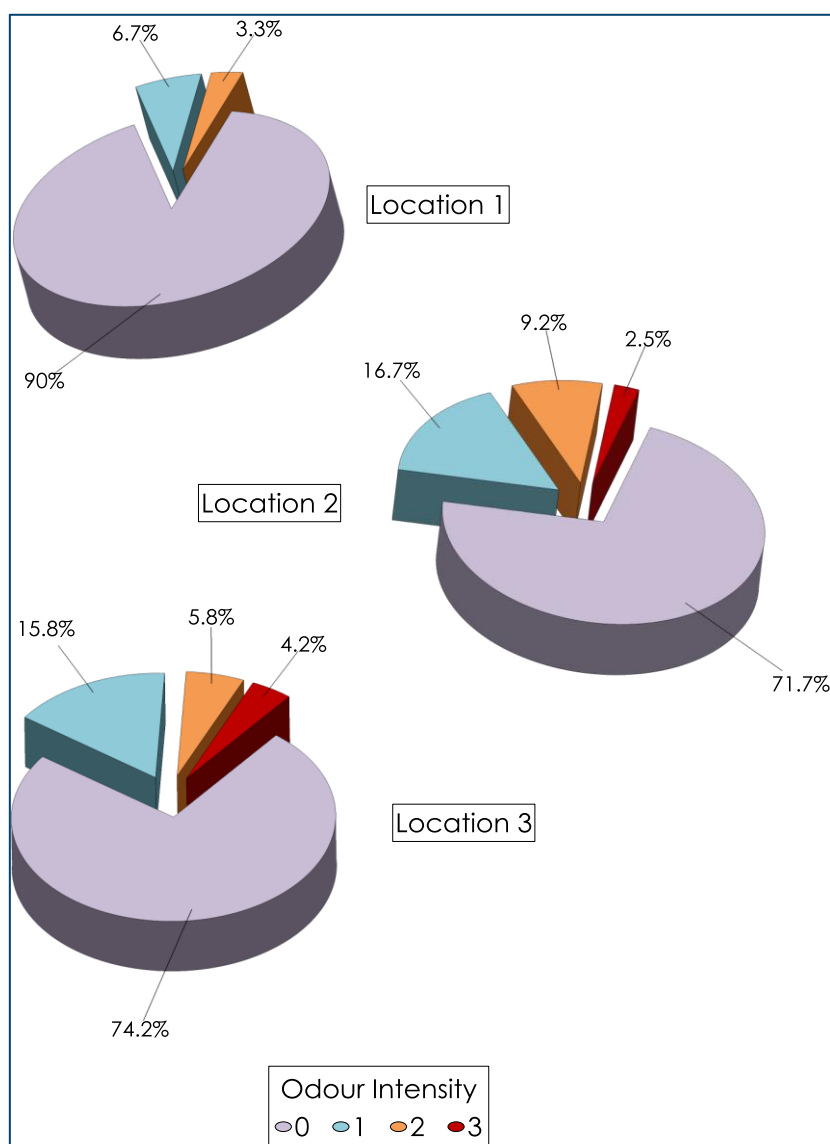


Figure 4-3: Percentage of odour observation per intensity – 19/02/2019

Table 4-1 presents the percentage of odour observations per odour characteristic and intensity identified at each survey location point.

The most common observed odour across all three location points corresponded to an odour characteristic of “faecal, manure, sewer”. Higher frequencies of this odour were observed closer towards the EFS site, with an increasing level of odour intensity.

A very slight and infrequent “musty, earthy, mouldy” odour was detected at location 3.

Other odours characterised as “grass/straw” and “chlorine” were identified at location 1 and 2 and were attributed to non-EFS sources in the immediate area.

Table 4-1: Percentage of odour observation per odour characteristic and odour intensity – 19/02/2019

Odour characteristic		Odour intensity	Location		
			1	2	3
9 - Faecal, manure, sewer		1	2.5	15.0	15.0
		2	-	9.2	5.8
		3	-	2.5	4.2
		Total	2.5	26.7	25.0
14 - Musty, earthy, mouldy		1	-	-	0.8
		2	-	-	0.8
		3	-	-	-
		Total	-	-	1.7
15 - other	Grass/ straw	1	4.2	1.7	-
		2	3.3	-	-
		3	-	-	-
		Total	7.5	1.7	-
	Chlorine	1	-	0.8	-
		2	-	-	-
		3	-	-	-
		Total	-	0.8	-

4.1.3 On-site validation

After the field odour survey was completed, the assessors went onto the EFS site in order to identify the potential on-site sources of any odours detected.

The “faecal, manure, sewer” odour characteristic recorded during the survey was characterised by one of the assessors as chicken manure. The EFS includes storage of chicken manure on-site. Upon inspection, this assessor determined the chicken manure odour on-site to have a different characteristic of more aged and dried manure odour rather than the fresh wet manure characteristic detected during the survey. The second assessor was unable to distinguish the manure smell on-site with that off-site, and considered both to be similar.

It was noted that at the time of the inspection, a doorway to the chicken manure storage shed on-site was open and that odour could have escaped and potentially thus had the potential to be detected off-site. It is also noted that a market garden located immediately south of EFS could be a potential source of this type of odour.

The “musty, earthy, mouldy” odour was only identified with an intensity of very slight and slight and very infrequently, and thus cannot be confirmed to have originated from EFS.

The biofilter on the site has an odour characteristic of “musty, earthy, mouldy” and in terms of volume and quantity of odour released is a constant and far larger source of emissions than an open doorway to the manure storage shed, albeit with a more natural and less intrusive odour character. For trained assessors in the field, it would not be possible to detect odour from the manure storage shed without detecting far more of the “musty, earthy, mouldy” odour. As the “musty, earthy, mouldy” odour was very slight or slight and very infrequent, the EFS manure storage shed is ruled out as being the likely source of the “faecal, manure, sewer” odour detected in the residential area.

4.1.4 Discussion

The field odour survey conducted on 19 February 2019 detected very slight to distinct odours at the three survey location points.

The main odour detected during the survey was characteristic of chicken manure however it was considered that it could not have originated from the EFS site.

No odour associated with EFS was able to be identified during the survey. Some very slight and slight "musty, earthy, mouldy" odour was infrequently detected, and may possibly be related to the bio filter, but this could not be reasonably established. Regardless, this odour could not be described as offensive.



4.2 Odour Survey 2 - 8 May 2019

The field odour survey 2 was conducted on 8 May 2019 between approximately 9:30am and 10:15am.

The general approach of the survey was to start at a location furthest from the EFS site and to gradually work closer, mapping the extent of the detectable odours in the downwind residential area.

The survey was timed to coincide with the site's compost transfer operations and with meteorological conditions when odour effects would be detected off-site, i.e. when winds blow towards receptors.

4.2.1 Meteorological monitoring

A windrose from the EFS on-site weather station is presented in **Figure 4-4**. Wind speed and direction data measured by the Kestrel during the survey period were unavailable due to an equipment fault.

The wind direction during the survey period predominately occurred from the west-northwest and northwest. The EFS weather station predominately recorded winds from the south-southeast.

Note that it is expected that stronger winds would be recorded at the EFS weather station than the Kestrel due to the 10 metre (m) high station positioned on top of a building compared to the Kestrel instrument positioned at a height of approximately 1.8m.

Ambient temperature at the survey locations ranged from approximately 16°C to 18°C.

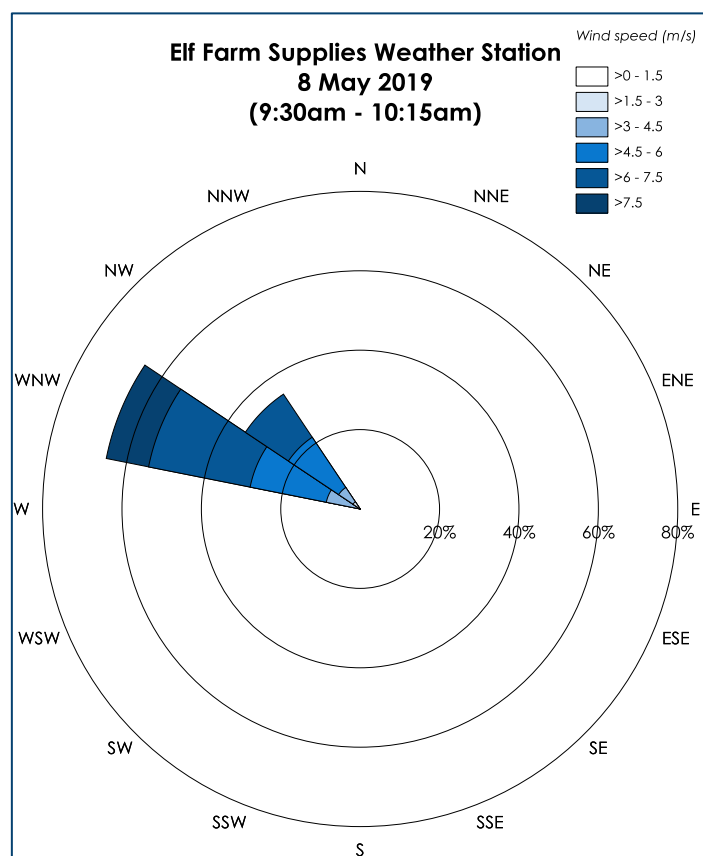


Figure 4-4: Windrose - Elf Farm Supplies, 8 May 2019, 9:30 - 10:15 AM

4.2.2 Monitoring results

A summary of the results for the field odour surveys conducted at each location is presented below.

Figure 4-5 displays the percentage of odour observations per intensity. The figure indicates that “no odour” was predominately observed at each location during the survey with the intensity of odours detected ranging from very slight to strong. Strong odour was recorded for only one 10-second measurement period by a single assessor.

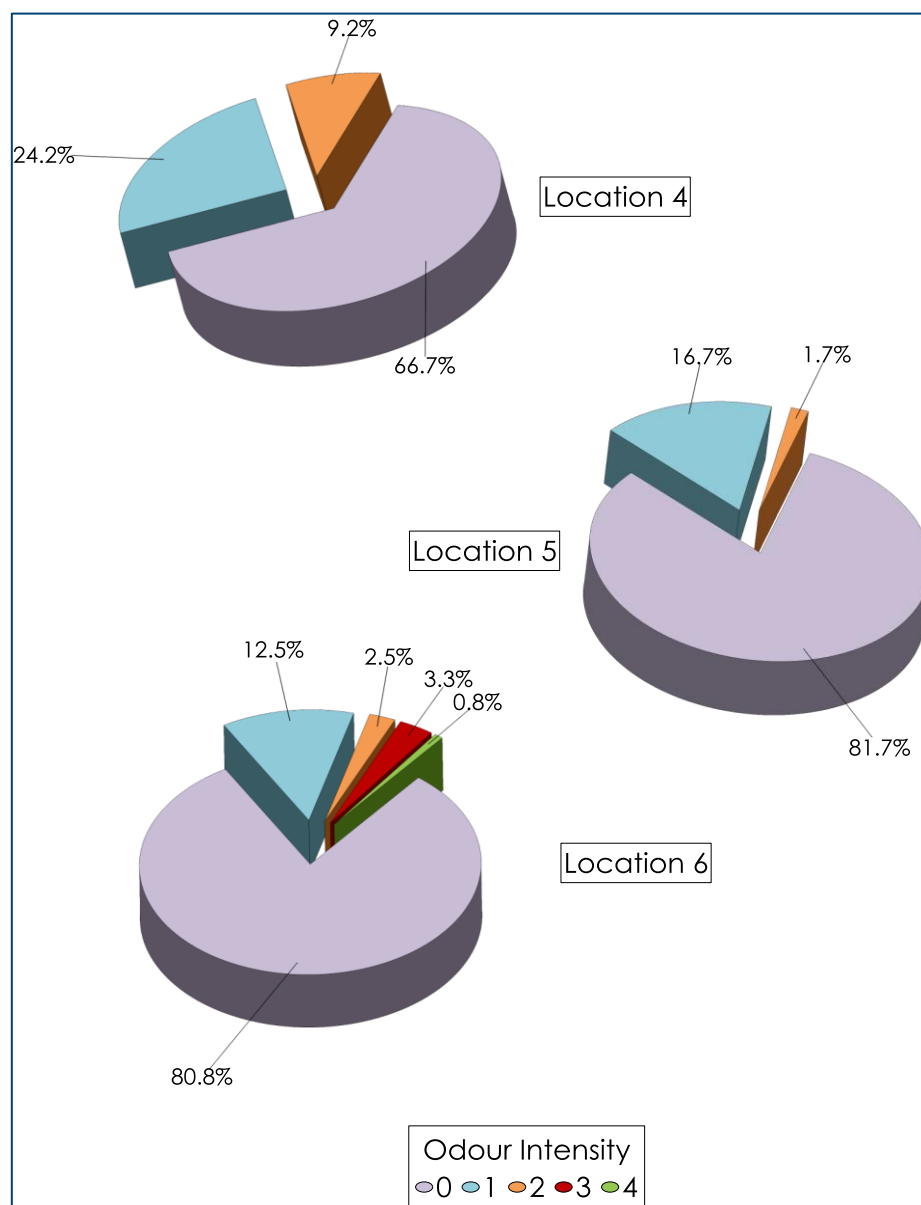


Figure 4-5: Percentage of odour observation per intensity – 8/05/2019

Table 4-2 presents the percentage of odour observations per odour characteristic and intensity identified at each survey location point.

“Faecal, manure, sewer” odours observed at location 4 were attributed to the nearby horse stabling yard.

The most common observed odour at location points 5 and 6 correspond to an odour characteristic of "compost". Higher levels of intensity of compost odours were observed closer towards the EFS site.

A very slight "burnt, smoky" odour was detected at location 4.

"Herbal, green, cut grass" odours were identified at all locations and were attributed to non-EFS sources in the immediate area.

Table 4-2: Percentage of odour observation per odour characteristic and odour intensity – 8/05/2019

Odour characteristic	Odour intensity	Location		
		4	5	6
3 – Burnt, smoky	1	0.8	0	0
	2	0	0	0
	3	0	0	0
	Total	0.8	0	0
4 – Herbal, green, cut grass	1	7.5	3.3	4.2
	2	0.8	0	0
	3	0	0	0
	Total	8.3	3.3	4.2
9 - Faecal, manure, sewer	1	15.8	0	0
	2	8.3	0	0
	3	0	0	0
	Total	24.1	0	0
13 - Compost	1	0	13.3	8.3
	2	0	1.7	2.5
	3	0	0	3.3
	4	0	0	0.8
	Total	0	15.0	14.9

4.2.3 On-site validation

After the field odour survey was completed, the assessors went onto the EFS site in order to identify the potential on-site sources of any odours detected.

The specific "compost" odour characteristic recorded during the survey was not attributed to a specific activity or source on-site (i.e. biofilter, manure shed).

It was noted that the compost transfer activities were occurring on site during the survey period. These activities were observed during the on-site visit for the purpose of odour validation. Upon inspection, the compost transfer activities were found to have a much stronger odour with an ammonia type characteristic.

It is possible that the "compost" like odour detected off-site could have originated from the compost transfer activities being diluted, however this was unable to be confirmed or disproved.

It is noted that other sources including the market garden located adjacent to EFS, which utilises compost and manure for its operations may have contributed to the manure or compost odours detected during the survey period.

4.2.4 Discussion

The offensiveness of odour detected for each survey location on 8 May 2019 has been evaluated using the FIDOL factors (frequency, intensity, duration, odour character and location). **Table 4-3** presents a summary of the evaluation.

Table 4-3: Evaluation of odour using FIDOL factors for 8/05/2019

Location ID	Frequency	Intensity	Duration	Odour character	Location
4	24%	Very slight to slight	20 - 60 seconds	Manure - unpleasant	Located in a rural setting, zoned for "primary production"
5	15%	Very slight to slight	10 - 70 seconds	Compost - unpleasant	
6	15%	Very slight to strong	10 - 50 seconds	Compost - unpleasant	

The "manure" odour (associated with the nearby horse stabling yard) was observed to occur approximately 24% of the time at Location 4 and "compost" odour was observed to occur approximately 15% of the time at Locations 5 and 6.

The intensity of the odours detected were predominately very slight and slight with four occurrences of distinct odour and one occurrence of strong odour. The duration of odour ranged between 10 to 70 seconds.

While the predominant odour characters detected during the survey of "manure" and "compost" are generally considered unpleasant, they are not considered out of place for the particular survey locations which are situated in a rural setting in an area zoned for primary production.

For Locations 4 and 5 the odour detected were found to be infrequent and of a low intensity with a character suitable for the location and thus are not considered to be offensive. At Location 6, periods of distinct and strong odours were recorded. There was only one event during the survey when distinct and strong "compost" odours were observed. One assessor recorded a single instance of strong intensity and distinct odour occurring over a 30 second period, the other assessor recorded only a single instance of distinct odour. Overall strong "compost" odour were observed by both assessors for <1% of the time and distinct odour for 3% of the time, with the event lasting a maximum duration of 40 seconds or 7% of the survey period. Due to the low frequency and short duration this odour is not considered offensive.

5 SUMMARY AND CONCLUSIONS

Field odour surveys were conducted on 19 February 2019 and 8 May 2019.

Chicken manure odour detected during the survey on 19 February 2019 was not attributed the EFS site and the infrequent very slight and slight "musty, earthy, mouldy" odour which may be related to the biofilter is not considered offensive.

Manure odours detected during the 8 May 2019 survey were attributed to a local horse stabling yard and while compost odour was detected off-site, it was not attributed to a specific activity or source on-site. In consideration of the frequency, intensity, duration, odour character and location of odours recorded during the survey, the odour detected considered to not be offensive.

Additional field odour surveys are planned for each quarter of 2019 to verify the effectiveness of odour control measures at the EFS site.

6 REFERENCES

Todoroski Air Sciences (2017)

"Odour Management Plan Elf Farm Supplies Substrate Facility", prepared for Elf Farm Supplies Pty Ltd by Todoroski Air Sciences, December 2017

VDI 3940 (1993)

"Verein Deutscher Ingenieure (VDI) 3940: Determination of Odorants in Ambient Air by Field Inspections", October 1993





APPENDIX F

ANNUAL RETURNS AND WASTE SUMMARY

A. Statement of Compliance - Licence Details

ALL Licence holders must check that the Licence details in Section A are correct.

If there are changes to any of these details, **you must advise Environment Protection Authority (EPA) and apply as soon as possible for a variation to your Licence or for a Licence transfer.**

Licence variation and transfer application forms are available on the EPA website at:
<http://www.epa.nsw.gov.au/licensing-and-regulation/licensing> or from regional offices of the EPA, or by contacting by telephone 02 9995 5700.

If you are applying to vary or transfer your Licence, you must still complete and submit this Annual Return.

A1. Licence holder

Licence number : 6229
Licence holder : ELF FARM SUPPLIES PTY LTD
Trading name (if applicable) :
ABN : 71 131 333 830
ACN :
Reporting period : From: 20-5-2018 To: 19-5-2019

A2. Premises to which Licence Applies (if applicable)

Common name (if any) : ELF FARM SUPPLIES PTY LTD
Premises : 108 MULGRAVE ROAD MULGRAVE 2756 NSW

A3. Activities to which Licence Applies

Composting
Waste storage

A4. Other Activities (if applicable)

A5. Fee-Based Activity Classifications

Note that the fee based activity classification is used to calculate the administrative fee.

Fee-based activity	Activity scale	Unit of measure
Waste storage - other types of waste	> 0.00	other types of waste stored
Composting	> 5,000.00 - 50,000.00	T annual capacity to receive organics

A6. Assessable Pollutants (if applicable)

Note that the identification of assessable pollutants is used to calculate the **load-based fee**.

The following assessable pollutants are identified for the fee-based activity classifications in the licence:

B. Monitoring and Complaints Summary

B1. Number of Pollution Complaints

Pollution Complaint Category	Complaints
Air	10
Water	0
Noise	0
Waste	0
Other	0
Total complaints recorded by the licensee during the reporting period	10

B2. Concentration Monitoring Summary

For each concentration monitoring point identified in your licence, details are displayed below. If concentration monitoring is not required by your licence, **no data** will appear below.

If data was provided from an uploaded file, the file name will be displayed below instead of any data.

Note that this does not exclude the need to conduct appropriate concentration monitoring of assessable pollutants as required by load-based licensing (if applicable).

B3. Volume or Mass Monitoring Summary

For each volume or mass monitoring point identified in your licence, details are displayed below. If volume or mass monitoring is not required by your licence, **no data** will appear below.

If data was provided from an uploaded file, the file name will be displayed below instead of any data.

Note that this does not exclude the need to conduct appropriate volume or mass monitoring of assessable pollutants as required by load-based licensing (if applicable).

C. Statement of Compliance - Licence Conditions

C1. Compliance with Licence Conditions

Were all conditions of the licence complied with (including monitoring and reporting requirements)?	Yes
---	-----

D. Statement of Compliance - Load Based Fee Calculation

If you are not required to monitor assessable pollutants by your licence, **no data** will appear below.

If assessable pollutants have been identified on your licence, the following worksheets for each assessable pollutant will determine your load based fee for the licence fee period to which this Annual Return relates.

Loads of assessable pollutants must be calculated using any of the methods provided in EPA's Load Calculation Protocol for the relevant activity. A Load Calculation Protocol would have been already sent to you with your licence. If you require additional copies, you can download the Protocol from the EPA's website or you can contact us on telephone 02 9995 5700.

You are required to keep all records used to calculate licence fees for four years after the licence fee was paid or became payable, whichever is the later date.

E. Statement of Compliance - Requirement to Prepare PIRMP

Have you prepared a Pollution Incident Response Management Plan (PIRMP) as required under section 153A of the Protection of the Environment Operations (POEO) Act 1997?		Yes
Is the PIRMP available at the premises?		Yes
Is the PIRMP available in a prominent position on a publicly accessible website?		Yes
Address of the web page where the PIRMP can be accessed ▼		
http://www.elffarmssupplies.com.au/wp-content/uploads/2018/07/20180716__11131_Revised-PIRMP_Website-Version.pdf		
Has the PIRMP been tested?		No
Has the PIRMP been updated?		Yes
The PIRMP was last updated on	5-7-2018	
Number of times the PIRMP was activated in this reporting period?		0
The PIRMP was activated on		

F. Statement of Compliance - Requirement to Publish Pollution Monitoring Data

Are there any conditions attached to your licence that require pollution monitoring to be undertaken as required under section 66(6) of the Protection of the Environment Operations (POEO) Act 1997?		Yes
Do you operate a website?		Yes
Is the pollution monitoring data published on your website in accordance with the EPA's written requirements for publishing pollution monitoring data?		Yes
Address of the web page where the pollution monitoring data can be accessed ▼		
http://www.elffarmssupplies.com.au		

G. Statement of Compliance - Environment Management System and Practices

Do you have an ISO 14001 certified Environmental Management System (EMS) OR any other system that EPA considers is equivalent to the accountability, procedures, documentation and record keeping requirements of an ISO 14001 certified EMS?	Yes
When was the last check (As per ISO 14001) of the EMS completed?	21-3-2019
Were there any non-conformances related to environmental issues identified in the last check of the EMS?	No
If there were non-conformances identified, were these non-conformances rectified?	

H. Signature and Certification

This Annual Return may only be signed by person(s) with legal authority to sign it as set out in following categories: an Individual, a Company, a Public authority or a Local council.

It is an offence to supply any information in this form that is false or misleading in a material respect, or to certify a statement that is false or misleading in a material respect. There is a maximum penalty of \$250,000 for a corporation and \$120,000 for an individual.

I/We

- declare that the information in the Monitoring and Complaints Summary in Section B of this Annual Return application is correct and not false or misleading in a material respect, and
- certify that the information in the Statement and Compliance in sections A, C, D, E, F, G and H and any other pages attached to Section C is correct and not false or misleading in a material respect.

Signed by: Delegate of Company

Name	Timothy Neil Cockerell
Position	General Manager
Email Address	manager@elffarm.com.au
Phone Number	02 4577 5000

Signature	
Name	
Position	
Date	/ /

Declaration

I declare that the information in the Monitoring and Complaints Summary in section B of this Annual Return is correct and not false or misleading in a material respect, and

I certify that the information in the Statement of Compliance in section A,C,D,E,F and G and any pages attached to Section C is correct and not false or misleading in a material respect.

Annual Waste Report: Elf Farm Supplies Pty Ltd - 6229

Reporting Period: 2018 - 2019

Status: **Certified**

Printed on: 9/19/2019, 6:29 AM

Due: **29 August 2019**

Report Version: **1**

Printed by: Neil Cockerell, Certifier



☐ No waste has been received, processed or removed from site during this period

Waste Received

Metropolitan Levy Area

Municipal

Waste type	Quantity (tonnes)
<i>Total Municipal</i>	0.00

Commercial and Industrial

	Waste type	Quantity (tonnes)
Received	Biosolids or manures	16,524.35
	Vegetation or garden	18,734.86
	<i>Total Commercial and Industrial</i>	35,259.21

Construction and Demolition

Waste type	Quantity (tonnes)
<i>Total Construction and Demolition</i>	0.00

Unknown

Waste type	Quantity (tonnes)
<i>Total Unknown</i>	0.00

Annual Waste Report: Elf Farm Supplies Pty Ltd - 6229

Reporting Period: 2018 - 2019

Status: **Certified**

Printed on: 9/19/2019, 6:29 AM

Due: 29 August 2019

Report Version: 1

Printed by: Neil Cockerell, Certifier



Deduction - Waste Transported from Site

Waste transported from site for disposal at a licensed waste facility

Waste type	Quantity
<i>Total</i>	0.00

Waste transported from site under a Resource Recovery Order

Waste type	Quantity
*Specific RRO Composts or mulches	82,700.00
Estimate of waste stream at time of receipt	<input type="checkbox"/> Unknown MUN: 0.00% C&I: 100.00% C&D: 0.00%
<i>Total</i>	82,700.00

Waste transported from site for lawful recovery

Waste type	Quantity
<i>Total</i>	0.00

Annual Waste Report: Elf Farm Supplies Pty Ltd - 6229

Reporting Period: 2018 - 2019

Status: **Certified**

Printed on: 9/19/2019, 6:29 AM

Due: **29 August 2019**

Report Version: **1**

Printed by: Neil Cockerell, Certifier



Summary Details

Details

	Tonnes
Waste Received - Waste received - Metropolitan Levy Area	35,259.21
	less
Waste transported from site	82,700.00
Net position for reporting period	-47,440.79

Certification Statement

I Neil Cockerell certify that the information contained in the report in respect of waste facility Elf Farm Supplies Pty Ltd located at 108 Mulgrave Road, Mulgrave , 2756 for the reporting period 2018 - 2019 is true and correct.

I further certify that the occupier of the waste facility has kept the necessary records to substantiate the information provided in this report in accordance with the Protection of the Environment Operations (Waste) Regulation 2014.

Please select the option that applies to you:

I am a person delegated to sign on the occupier's behalf and approved by the EPA in writing to sign this report



APPENDIX G

INDEPENDENT ENVIRONMENTAL AUDIT

INDEPENDENT ENVIRONMENTAL AUDIT

Prepared for:

Elf Farm Supplies Pty Ltd
PO Box 615
WINDSOR NSW 2756

SLR Ref: 610.18204-R01
Version No: -v1.0
March 2019



PREPARED BY

SLR Consulting Australia Pty Ltd
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BASIS OF REPORT

This report has been prepared by SLR Consulting Australia Pty Ltd with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Elf Farm Supplies Pty Ltd (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

DOCUMENT CONTROL

Reference	Date	Prepared	Checked	Authorised
610.18204-R01-v1.0	21 March 2019	Sandy Lonergan	Brad Radloff and Kirsten Lawrence	Sandy Lonergan

EXECUTIVE SUMMARY

SLR Consulting Australia Pty Ltd (SLR) was commissioned by Elf Farm Supplies Pty Ltd (Elf) to undertake an Independent Environmental Audit (IEA) for its Mulgrave Substrate Plant facility, Mulgrave, New South Wales (the Site). The IEA was performed in accordance with Condition 3A of Schedule 5 of Project Approval MP 08-0255, first approved on 11 January 2012 and the modified approval (MOD 1) dated 14 March 2016 (Project Approval).

This is the second IEA to be conducted against this Project Approval, the first was conducted at the end of 2016, Report Number 610.16730.00000-R01-v3.0. The 2016 IEA covered the period from 11 January 2012 to 1 March 2017. This IEA reporting period is from 1 March 2017 to 14 March 2019.

The modification (MOD 1) relates to the Substrate Plant site only as approved under MOD 1 and includes:

- A new odour management system in the form of a biofilter and six ammonia scrubbers;
- An additional six (6) phase 2/3 tunnels; and
- The continued use of fill associated with the biofilter pad.

Elf Farm Supplies had until March 2018 to complete the construction of the MOD1 facilities, Stage 1. At the beginning of 2018, Elf requested an extension of time for completion from the Department of Planning and Environment. This extension was granted on 14 March 2018, with a revised construction completion date of 30 June 2018. Elf met this revised completion date.

This audit was carried out between September 2018 and March 2019, with SLR being supplied information as requested. The audit took longer than expected as SLR preferred to wait for the Odour Emissions and Biofilter Control System Audit required under Condition 5(e) to be completed as it was a key audit to determine the success of the MOD1 project. This audit report was completed on 1 March 2019.

The information, results and discussions from the SLR Odour Emissions and Biofilter Control System audit was utilised in the IEA Odour Audit component. The overall conclusion of the audit was the MOD1 project has achieved its objectives of minimising offensive odours.

Of the 69 Conditions, 15 (22%) were considered closed as per the findings of the previous IEA in 2016, 7 (10%) were considered not triggered and one (1) was classified as notes for information and not requiring auditing, hence 46 conditions were audited.

Of the 46 auditable conditions, compliance was achieved for 32 (70%), non-compliance recorded for 14 conditions (30%). Of the 14 non-compliances, 6 (43%) were classified as administrative non-compliances. Two of the administrative non-compliances were related to the Department of Planning not approving elements as they were waiting on MOD3 determination.

It is noteworthy that several of the non-compliances were for the same activity. For example, operating outside construction hours meant non-compliances were recorded against Condition 2 of Schedule 2, Condition 1A of Schedule 3 and Condition 20 of Schedule 3.

All non-compliances were assessed to be of a low risk.

70% compliance was an improvement on the 2016 IEA, where 61% compliance was achieved.

EXECUTIVE SUMMARY

Also during the process, a high degree of senior management commitment at Elf to minimising the impact on the environment was evident. Elf was commended for ensuring all incidents and non-compliances are identified and corrective action implemented as soon as possible as evidenced by incident and non-compliance registers, corrective action plans/implementation and introduction of additional environmental resources. During the audit, Elf management appeared receptive and encouraged the auditor to identify opportunities for improvement.

Elf has also demonstrated continuous environmental improvement by capturing the air emissions from the western pit and transferring the air into the biofilter control system and installing two 100,000 litres tanks to assist with water and odour management on-site.

In conclusion, the environmental performance of the site has improved since the completion of construction and commencement of the odour control system.

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1 Introduction

1.1 Background

SLR Consulting Australia Pty Ltd (SLR) was commissioned by Elf Farm Supplies Pty Ltd (Elf) to undertake an Independent Environmental Audit (IEA) for its Mulgrave Substrate Plant facility, Mulgrave, New South Wales (the Site). The IEA was performed in accordance with Condition 3A of Schedule 5 of Project Approval MP 08-0255, first approved on 11 January 2012 and the modified approval (MOD 1) dated 14 March 2016 (Project Approval).

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- The continued use of fill associated with the biofilter pad.

Elf Farm Supplies had until March 2018 to complete the construction of the MOD1 facilities, Stage1. At the beginning of 2018, Elf requested an extension of time for completion from the Department of Planning and Environment. This extension was granted on 14 March 2018, with a revised construction completion date of 30 June 2018. Elf met this revised completion date.

This is SLR's second IEA report. This report was originally planned to be completed in October 2018, however the audit team decided to wait for the Odour Emissions and Biofilter Control System audit of MOD1 to be completed and submitted to Elf. This audit was seen as a critical condition in the Project Approval and therefore important to have this report available for this audit. The audit report was issued on 1 March 2019.

1.2 Site Description

Elf Farm Supplies produces mushroom compost (substrate) and has a certification to do this organically at the Site. The Substrate Plant has operated at 108 Mulgrave Road, Mulgrave since 1981 being a rural property comprising of Lots 13 and 14, DP1138749 and having an area of approximately 12.4 hectares.

The mushroom compost is manufactured from recycled agricultural materials, including wheaten straw, poultry manure, stable bedding, gypsum and other nitrogen rich products, which are combined in the Substrate Plant to produce a high quality mushroom compost product.

The production process includes:

- Raw material storage;
- Raw materials preparation;
- Pre-wetting;
- Phase 1 composting;
- Phase 2 and Phase 3 processing; and

- Product delivery.

The Substrate Plant operates 24 hours per day, seven days per week.

The Substrate Plant has been operating at the Site since 1981 under a series of Development Consents issued by Hawkesbury City Council. On 11 January 2012, the Minister for Planning granted project approval for expansion and continued operation of the Substrate Plant, MP 08_0255. In February 2015, Elf Farm Supplies applied for modifications to the existing development consent and this approval (MOD 1) was granted on 14 March 2016.

The plant is licensed by the Environment Protection Authority (EPA), licence number 6229.

1.3 Audit Scope

This IEA and subsequent report was prepared pursuant to Condition 3A of Schedule 5 of Project Approval MP 08_0255. **Table 1** lists the requirements of this condition and indicates where each has been addressed in this IEA report.

Table 1 Audit Conditions and Where Each Requirement is Addressed in this Report

Condition	Description of Condition	Where Addressed in this Report
3A	Within six months of the approval of MOD 1, and every two years thereafter, unless otherwise agreed by the Secretary, the Proponent shall commission and pay the cost of an Independent Environmental Audit of the Project. This audit must:	This Audit Report
3A (a)	Be conducted by suitably qualified, experienced and independent team of experts (including and odour expert) whose appointment has been endorsed by the Secretary;	Appendix D
3A (b)	Include consultation with the relevant agencies;	Section 3.1
3A (c)	Include a full odour audit of the Project, taking into consideration of the relevant technical guidelines and any odour complaints made since the previous audit;	Section 4
3A (d)	Assess the environmental performance of the project and assess whether it is complying with the relevant requirements in this approval and any other licenses and approvals that apply to the project (including any assessment, plan or program required under these approvals);	Section 3 for Project Approval Conditions, Appendix A and Sections 4 and 6.
3A (e)	Review the adequacy of strategies, plans or programs required under these approvals and if appropriate;	Sections 4 and 6
3A (f)	Recommend measures or actions to improve the environmental performance of the project, and or any assessment, plan or program required under these approvals.	Section 6.4
	Within six (6) weeks of the completion of this audit, or as otherwise agreed by the Secretary, the Proponent shall submit a copy of the audit report to the Secretary, together with its response to any recommendation contained in the audit report.	This Audit report

1.4 Report Structure

This report is structured as follows:

- Section 1 provides an introduction, background, description, scope of the audit, limitations and provides a guide to the structure of the report;
- Section 2 outlines the audit team, audit methodology and assessment criteria used in the IEA;
- Section 3 summarises the audit findings including the consultation undertaken, personnel interviewed, audit results and consolidates in table format all the non-compliances identified;
- Section 4 covers the odour audit requirement of MOD 1;
- Section 5 reviews the 2016 IEA recommendations and status on implementation of those recommendations;
- Section 6 includes the review and assessment of the performance of the facility, its management plans and makes recommendations for improvements;
- Section 7 is the conclusion;
- Appendix A contains complete list of all the conditions in the Project Approval and details the audit findings;
- Appendix B contains a selection of photographs from the site visits;
- Appendix C contains the completed Independent Audit Certification form; and
- Appendix D contains the audit team CVs and associated approval letter from the Department of Planning & Environment.

1.5 Limitations

This report has been prepared for Elf Farm Supplies (Elf) to fulfil the requirements of the IEA as specified in the Project Approval. The IEA only pertains to the Substrate Plant.

The scope of the audit, and subsequent report was limited and should not be used for any purpose other than that described above.

The following should be taken into account when reading and using this report:

- 1 Three site visits were undertaken during this audit to familiarise the auditors with the site layout, site conditions and natural environment. Whilst the auditors requested to be shown all features of the sites impacted (environmentally) by the operations, the auditors have relied on information provided by Elf representatives during these site visits, including the selection of the areas of the site for the site inspections.
- 2 Elf provided (at their sole discretion) all documentation that has been accessible to the auditors. The auditors relied on the information and documentation provided and Elf to provide all relevant and pertinent information. It should be noted that the range of documentation provided may not have included all relevant environmental records held. The auditors asked to receive all relevant documentation. The auditors have not had the opportunity to verify any of the information provided nor have they had the opportunity to consult with any party other than Elf's nominated representatives during this audit.

2 Audit Team and Methodology

2.1 Audit Team

SLR audit team comprised of Sandy Lonergan (Lead Auditor, certified by SAI Global) and Kirsten Lawrence, odour expert. Ms Lonergan has over 20 years auditing experience, has been a third party certification auditor for NCSI, has conducted numerous independent compliance audits for the Commonwealth Government, Planning Departments and Environment Protection Authorities or equivalent in New South Wales and Queensland. Refer to Appendix D for the audit team CVs and letter of approval for the audit team from the Department of Planning and Environment.

2.2 Methodology

The audit included:

- A desktop review of documentation requested;
- Consultation with relevant agencies, namely Environment Protection Authority (EPA) and Hawkesbury City Council; and
- Three site visits.

The site visits were undertaken by Ms Lonergan, on 17 September 2018, 11 October 2018 and 8 January 2019 involved walk-arounds of the site, attendance at the site induction and interviews with key staff.

SLR auditors used the following methodologies to gather evidence during the audit:

- Review of documents (letters, plans, reports, emails);
- Interviews with key personnel; and
- Site inspection of the facility.

2.3 Assessment Criteria

SLR adopted the compliance assessment criteria outlined in Section 4.1 and reproduced below in **Table 2**, in the NSW Government, *Independent Audit Guideline for Post-approval requirements for State Significant Developments*, October 2015.

SLR notes that the Guideline includes “should” in a number of key areas, for example, “*The compliance status of each requirement or commitment **should** be assessed in accordance with the criteria in Table 1.*” From an auditing perspective, should does not mean it must be completed, it is optional.

Table 2 Compliance Assessment Criteria

Assessment	Criteria
Compliant	Where the auditor has collected sufficient verifiable evidence to demonstrate that the intent and all elements of the requirement of the regulatory approval has been complied with within the scope of the audit.
Not verified	Where the auditor has not been able to collect sufficient verifiable evidence to demonstrate that the intent and all elements of the requirement of the regulatory approval have been complied with within the scope of the audit. In the absence of sufficient verification the auditor may in some instances be able to verify by other means (visual inspections, personal communication, etc) that a requirement has been met. In such a situation, the requirement should still be assessed as not verified. However the auditor could note in the report that they have no reasons to believe that the operation is non-compliant with that requirement.
Non-compliant	Where the auditor has collected sufficient verifiable evidence to demonstrate that the intent of one or more specific elements of the regulatory approval have not been complied with within the scope of the audit.
Administrative non-compliance	A technical non-compliance with a regulatory approval that would not impact on performance and that is considered minor in nature (e.g. report submitted but not on the due date, failed monitoring or late monitoring session). This would not apply to performance related aspects (e.g. exceedance of a noise limit) or where a requirement had not been met all (e.g. noise management plan not prepared and submitted for approval).
Not triggered	A regulatory approval requirement has an activation or timing trigger that had not been met at the time of the audit inspection, therefore a determination of compliance could not be made.
Observation	Observations recorded where the audit identified issues of concern which do not strictly relate to the scope of the audit or assessment of compliance. Further observations are considered to be indicators of potential non-compliance or areas where performance may be improved.
Note	A statement or fact, where no assessment of compliance is required.

Another assessment criterion was added to this IEA, “Closed”, as this is the second IEA and hence the Department advised during a telephone conversation on 19 May 2018 that conditions only relevant to the current audit period are to be audited. For example, if all construction was completed and the facility is in operational phase, all construction conditions are to be treated as closed.

3 Approval Audit Findings

3.1 Consultation Outcomes

Condition 3A(b) requires the independent auditor to consult with the relevant agencies during the IEA of the Project. SLR contacted the EPA and Hawkesbury City Council.

SLR spoke to EPA representative, Mr Damien Rose, on 14 August 2018. SLR advised that they had been engaged to conduct the independent audit. Mr Rose advised the key aspects from EPA perspective was to check dates when activities commenced and when activities were decommissioned and if Elf complied with due dates.

SLR tried to contact Mr Andrew Johnston from the Hawkesbury City Council on 6 August 2018. SLR did not receive a response.

3.2 Personnel Interviewed

Table 3 lists the personnel interviewed during the site visit component of the audit.

Table 3 Elf Personnel Interviewed During the Audit

Name	Title
Garry Faint	Administration Manager
Blake Edwards	WHS & HR Manager

3.3 Interviews

Information obtained and statements recorded during the interviews conducted whilst on site at the Substrate Plant were directly recorded as evidence (see **Appendix A**). The auditor also used the interviews as an opportunity to gain an appreciation of the extent to which the systems in place to manage environmental impacts from site operations were understood and being implemented.

The interviews conducted allowed the auditor to form the opinion that the approach to environmental management (and operations more broadly) is well understood by senior staff.

3.4 Summary of Audit Findings

Table 4 shows a summary of the findings of this audit.

Table 4 Summary Table of Compliance with MP 08_0255

Schedule	Total No. of Conditions	Conditions Audited	Compliance	Not verified	Non-Compliance	Admin Compliance	Non-Compliance	Not Triggered	Closed	Note
2	18	11	9	0	1	1		3	3	1
3	42	28	19	0	5	4		3	11	0
5	9	7	4	0	2	1		1	1	0
Total	69	46	32	0	8	6		7	15	1

Table 5 summarises the non-compliances identified, with relevant comments. Note in some instances the entire condition has not been documented in the table and is included at the end of these conditions. Refer to Appendix A for the condition in its entirety.

Table 5 Summary of Non-Compliances (including Administrative)

Schedule	Condition	Requirement (Summary)	Comment
2	2	The Proponent shall carry out the Project generally in accordance with the (a) EA; (b) Statement of commitments (See Appendix A); (c) Site layout plans and drawings in the EA; and (d) MOD 1.	There have been several non-compliances identified which has shown that Elf has not carried out certain aspects of the project in accordance with the EA, MOD1. These include: - Two occasions where hours of construction occurred outside the specified hours, which also lead to lighting complaints. These were identified by Elf, reported as per their internal processes and action taken to mitigate this occurring again. These non-compliances also relates to non-compliances for Condition 1A of Schedule 3, Condition 20 of Schedule 3 and Condition 24 of Schedule 3. No further action required.
2	4	The Proponent shall comply with any reasonable requirement/s of the Secretary 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.	Elf was required to submit the Certification Letter Report to Planning by 30 June 2018, the report was submitted in November 2018. Administrative non-compliance. This also relates to the non-compliance for Condition 3B of Schedule 3. No further action required.

Schedule	Condition	Requirement (Summary)	Comment
3	1A	The revised CEMP shall be implemented throughout the construction works.	<p>Whilst the majority of CEMP is being implemented by Elf, three non-compliances were identified during the site visit.</p> <ol style="list-style-type: none"> 1. Construction activities occurred outside nominated hours in Construction Noise & Vibration Management Plan (Section 7.0). 2. Lighting complaints were received as a direct result of construction activities occurring at night. 3. The Environmental Checklist was not completed for the duration of the construction period. <p>No further action at this point in time. When construction of other stages commence, Elf to ensure Environmental Checklist is completed as per the CEMP.</p>
3	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.	<p>Numerous odour complaints continue to be received during 2017 whilst construction was continuing, hence non-compliance with this condition.</p> <p>All odour complaints are investigated to determine likelihood of Elf Farm Supplies being the source.</p> <p>Elf has now completed the stage 1 of the MOD1 project and significant reduction in odour complaints have been received directly by Elf, for example there were none recorded during 2018.</p> <p>No further action required.</p>
3	3B	<p>Prior to the commencement of operation of the odour emissions plant, the Proponent shall commission and pay the full cost of an independent odour specialist to certify that the 'as constructed' odour emissions plant has been undertaken in accordance with the final detailed design with reference to the Environmental Assessment for MOD 1 and the outcomes of Condition 3 of Schedule 3.</p> <p>A copy of the certification is to be provided to the Secretary and the EPA within one week of its finalisation.</p>	<p>This certification letter report was submitted late to the Department of Planning and EPA. It was due to be submitted prior to commencement of operations as per a Planning letter to Elf on 13 March 2018. This time-frame was not complied with.</p> <p>No further action required.</p>

Schedule	Condition	Requirement (Summary)	Comment
3	17A	The Proponent shall prepare an updated Water Management Plan for the Substrate Plant site required by Condition 17 of Schedule 3 to include the works associated with MOD 1. The plan shall be submitted to the Secretary for approval prior to the commencement of operation of MOD 1. Operation of works associated with MOD 1 shall not commence until the Proponent has received written approval of the plan. The approved Plan shall be implemented for the life of the Project.	Administrative non-compliance caused by Planning not approving the Water Management Plan as they were waiting for determination of MOD3 application. No further action required by Elf.
3	17C	Notwithstanding Condition 17B of Schedule 3, in the event of an emergency such as a high rainfall event or plant breakdown, the Proponent may use the western dam. Notification of any emergency use of the dam shall be provided to the Secretary in writing within 7 days of the emergency.	Department believes that Elf had a genuine misunderstanding of the condition in terms of advising the Secretary (Department) of the western dam being used for storage during high rainfall events. The Department requested in a letter to Elf that in the future, written notification is provided, as outlined in the condition, following every use of the dam (excluding when the dam receives water from direct rainfall, area runoff and/or groundwater), in particular as a result of high rainfall events. Elf to specify what is considered a "high rainfall" event and document that in the Water Management Plan and ensure the Department is notified accordingly.
3	20	Construction hours – Monday to Friday – 7am to 6pm	As outlined in the Schedule 2, Condition 2 non-compliance, Elf's construction activities occurred outside the specified construction hours on 21/7/2017, 25/7/2017 and 29/8/17. Each non-compliance was investigated and corrective actions taken to prevent reoccurrence where possible. No further action required.
2	22B	Operation of works associated with MOD 1 shall not commence until the Proponent has received the Secretary's written approval of the plan. The approved Plan (as revised and approved by the Secretary from time to time), shall be implemented for the life of the Project as soon as written endorsement by the Secretary is received.	The updated Operational Noise Management Plan was prepared and finalised in late June 2018 and submitted to the Department. Elf had not had a response from the Department for 6 months and followed up with the Department in December 2018. The Department's officer advised that she had not reviewed the Plan as yet. Planning did review and further amendments were required and a revised version of the Plan dated 17 January 2019 was submitted. This was approved on 4 February 2019. No action required by Elf.

Schedule	Condition	Requirement (Summary)	Comment
3	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 practice techniques are used at the site, to the satisfaction of the Secretary.	Elf has not established the riparian corridor and sought a modification to the development and the associated consent to remove this condition. This application was made in January 2017 and no response has been received to date. No action required from Elf, except to keep following up with the Department.
3	24	The Proponent shall ensure that all external lighting associated with the Substrate Plant site: a) Does not create nuisance to surrounding properties or roadways and b) Complies with AS4282 (INT) 1995 – Control of Obtrusive Effects of Outdoor Lighting.	Three complaints relating to light were received during this IEA reporting period. Two related to construction activities (21/7/2017 & 29/8/2017) when construction activities went long than planned and a delivery of a shipping container occurred at night (which was out of Elf's control). The third related to lights from security car on sight conducting regular patrols. Security company to make effort to keep lights to minimum in the westerly direction.
5	1	The Proponent shall prepare and implement an Environmental Management Strategy for the Project to the satisfaction of the Secretary. The Strategy must:	The Strategy is not compliant with c) as Section 8.2.1 refers to three yearly performance review reports when that Condition 5 of Schedule 5 has been modified to annual reports. There are many sections of the Strategy that require updating to reflect MOD1 completion. For example but not limited to, Sections 2.3, 4.2, 4.3, 5.2.2, 5.3, 7.2, 7.3, 8.1.3, 8.2 and 8.3. Figures 2 and 3 and the Appendices all contain many out of date documents, for example the EPL. Many of the Plans in the appendices are being used but have not been included in the Strategy. This is considered an administrative non-compliance as not having the Strategy up-to-date has not resulted as yet in an environmental incidents. Elf to update the Strategy.
5	7	The approved Strategy (as revised and approved by the Secretary from time to time), shall be implemented for the life of the Project as soon as written endorsement by the Secretary is received.	Compliance with implementation of the Community Consultation Strategy was occurring until March 2018. After March 2018 there have been no Elf Farm Supplies Construction Update (of which it would have been the last one as construction finished in June 2018), no media release for construction being completed as specified. Elf to update the Community as per the strategy regarding the completion of the construction works.

Schedule	Condition	Requirement (Summary)	Comment
5	8	Within three months from the date of the approval of MOD 1, the Proponent shall make the following information (unless commercially sensitive) freely available on a publicly accessible website, as it is progressively required under the approval	<p>The website has not been updated with the revised plans and programs, for example the Environmental Management Strategy was sighted main strategy compliance (Jan 17), however the appendices had not been updated and dated May 2012, the updated Odour Management Plan, Water Management Plan and Operational Noise Management Plan were all missing.</p> <p>It is noted that Elf updated the website on 8 March 2019 with the updated management plans, no further action required for the plans.</p> <p>Construction updates ceased in March 2018, construction was not completed in March 2018. Construction works were completed in June 2018 but no update provided.</p>

4 Odour Audit

4.1 Introduction

This section of the report addresses the odour audit of the Project (MOD 1). It should be noted that another independent team from SLR was engaged and has recently completed the Odour Emissions and Biofilter Control System Audit as per Schedule 3, Condition 5(e). As outlined in Section 1, the IEA audit team waited for this audit to be completed to allow their report and findings to be incorporated into this IEA as minimising offensive odour off site is the main reason for the construction of the MOD1 project.

The objective of the Odour Emissions and Biofilter Control System Audit was to quantify the odour abatement efficiency of the new odour control plant and to assess the effectiveness of all other odour controls on the Substrate Plant site.

The IEA audit team have incorporated the results and findings of the Odour Emissions and Biofilter Control System audit into this Odour Audit required under the IEA. The audit included:

- Site visit to determine compliance with the design features and process management actions to minimise odour emissions as outlined in the revised Odour Management Plan.
- Review of documentation to determine if odour concentrations and mass emission rates used in the Odour Impact Assessment were being achieved once the facility was built and operational.
- Review of documentation to determine if facility achieving the desired odour reduction outcomes.

4.2 Documentation Reviewed

The following relevant technical guidelines were reviewed and considered in the odour audit:

- Department of Environment and Conservation NSW – Technical Framework – Assessment and management of odour from stationary sources in NSW, November 2006
- Department of Environment and Conservation NSW – Technical Notes – Assessment and management of odour from stationary sources in NSW, November 2006

The following Elf documents were reviewed and considered in the odour audit:

- SLR Consulting Australia Pty Ltd, *Odour Emissions & Biofilter Control System Audit, Elf Farm Supplies, Condition 5(e)*, March 2019. SLR Ref: 610.18411-R01-v3.0.
- The Odour Unit, letter to Elf Farm Supplies dated 19 November 2018. Schedule 3, Condition 3B – As Constructed Letter Report.
- Todoroski Air Sciences, *Odour Management Plan Elf Farm Supplies Substrate Facility*, Prepared for Elf Farm Supplies Pty Ltd, 8 February 2018.
- The Odour Unit, *Elf Farm Supplies Pty Ltd, Mushroom Substrate Plant – Modification to Approved Expansion, Odour Impact Assessment, Mulgrave, NSW*. Final Report. 08.01.2015.
- *Air Quality Assessment, Expansion of Substrate Facility, Mulgrave, Elf Farm Supplies*, 9 December 2010, PAE Holmes.

4.3 Audit Findings

4.3.1 Site Visit – Implementation of Odour Controls

The auditor observed no offensive odour at the boundary of the property when arriving for each site visit. During the site visit on 8 January 2019, the auditor reviewed the existing design features and management practices in place against what was specified in the Odour Management Plan (2018).

Sections 4.2 and 4.3 of the Odour Management Plan outline the design features for odour control and process management actions **pre** MOD 1 completion. As this audit was undertaken after the commencement of MOD1 operations, the auditor could not verify the majority of the features and actions.

Table 6 summarises the Pre MOD 1 design features for odour control that Elf had in place prior to the completion of MOD1 and audit findings.

Table 6 Audit Findings of Pre MOD 1 Design Features for Odour Control

Pre MOD1 Design Features for Odour Control	2018 Finding
Under-cover storage to keep raw materials dry	Not verified
Fully enclosed processing areas for all potentially odour-generating processes	Not verified
Air-under system in Pre-Wet shed and in Phase 1 tunnels to improve aeration during composting process	Not verified
Computer controlled fans to maintain optimum air supply and extraction	Not verified
Extensive instrumentation to monitor compost processing variables	Not verified
A tunnel to enable fully enclosed transfer of pre-wet material from the pre-wet building to composting tunnels	Not verified
Enclosed conveyor transport system for tunnel loading, dispatch loading and transfer to Phase 2 & 3 tunnels.	Not verified
A bio-scrubber to remove odorous compounds from exhaust air from Phase 1 tunnels prior to release to atmosphere	Sighted – Compliant
A chimney stack to discharge exhaust air from Phase 1 tunnels bio-scrubber 40 metres above ground	Sighted – Compliant
Site monitoring network consisting of cameras and trigger alarms on operational processes	Sighted – Compliant
Maintaining storage of critical spares for machinery equipment where possible	Sighted maintenance shed which had spares available – Compliant

Table 7 summarises key Pre MOD 1 process management actions for odour control that Elf had in place.

Table 7 Audit Findings of Pre MOD 1 Process Management Activities to Minimise Odour

Process Management Actions	Evidence	Finding
Clean up any spillages in front of the ingredients store or elsewhere on a daily basis	-	Not verified
Desludge the collection pit (if sludge is present) at regular intervals (at least fortnightly)	Sighted records	Compliant
Enclosed processing areas for all potentially odour-generating activities		Non-compliant – MOD 1 was constructed to address this

Process Management Actions	Evidence	Finding
Maintain appropriate conditions of temperature and oxygen content during composting, consistent with the needs of the process, to minimise odour generation	Sighted records	Compliant
Ensure the exit velocity of air chimney always achieves the minimum requirement determined by odour dispersion modelling	Sighted AEMR reports for 2017 and 2018. 4 out of 5 had exit velocity greater than 14.3 m/s for October 2016, 5 out of 5 were above 14.3 m/s for May 2017. 0 out of 5 for February 2018.	Non-complaint Note all results were within the EPL odour emission rate limit.
Operate the bio-scrubber in a manner to maximise its efficiency at removing odour from the air stream	Sighted results of SEMA testing.	Compliant
Minimise as far as practicable the duration of any bypassing of the bio-scrubber for maintenance.	Discussion with site personnel.	Compliant
Time any bio-scrubber bypassing to occur when hot substrate is not being turned and when weather conditions will assist dispersion	Discussions with site personnel.	Compliant
Undercover storage for raw materials to keep them dry	Not sighted during this audit period but this is part of production process.	Not verified
Air-under system in the pre-wet building and in all Phase 1 tunnels to improve aeration of composting material	Not sighted during this audit period but this is part of production process.	Not verified
Automatic control system for fans to maintain optimum air supply and extraction	Not sighted during this audit period but this is part of production process.	Not verified
An enclosed vehicle passageway to enable indoor transfer of partly processed material from the pre-wet building to Phase 1 tunnels	Not sighted during this audit period but this is part of production process.	Not verified
Enclosed conveyor transport for tunnel loading, dispatch loading and transfer to Phase 2/3 tunnels	-	Not verified
Bioscrubber to reduce odorous compounds from exhaust air prior to release to the atmosphere	Sighted	Compliant
Chimney to discharge exhaust air 40 meters above ground to aid dispersion	Sighted	Compliant
Monitoring system to detect any faults or operational anomalies and send alarms to the Duty Manager 24/7	Sighted records of alarms being activated pre MOD1 commencing	Compliant
Potential dam odour is managed by complying with Condition 17B of Schedule 3 of the Project Approval and the water management plan.	Sighted EPA website no penalty notices issued	Compliant

Sections 4.5 and 4.6 of the Odour Management Plan outline the design features for odour control and process management actions **post** MOD 1 completion. Refer to **Table 8** and **Table 9** for audit findings regarding implementation of the features and actions.

Table 8 Audit Findings of Post MOD 1 Design Features for Odour Control

Post MOD1 Design Features for Odour Control	Evidence	2018 Finding
Under-cover storage to keep raw materials dry	Sighted	Compliant
Fully enclosed processing areas for all potentially odour-generating processes	Sighted	Compliant
Undertaking pre-wetting in tunnels to replace the pre-wet shed	Sighted	Compliant
Air-under system in Pre-Wet shed and in Phase 1 tunnels to improve aeration during composting process	Sighted	Compliant
Computer controlled fans to maintain optimum air supply and extraction	Sighted fans operation and PLC	Compliant
Extensive instrumentation to monitor compost processing variables	Sighted PLC system	Compliant
Enclosed conveyor to transfer pre-wet material from the pre-wet building to composting tunnels	Sighted	Compliant
Enclosed conveyor transport system for tunnel loading, dispatch loading and transfer to Phase 2 building	Sighted	Compliant
Ammonia scrubbers to remove ammonia from exhaust air from the plant prior to exhausting through the biofilter	Sighted	Compliant
A biofilter to accept air from all buildings, after treatment through the ammonia scrubbers	Sighted	Compliant
Site monitoring network consisting of trigger alarms on operational processes	Sighted PLC system	Compliant
Maintaining storage of critical spares for machinery equipment where possible	Elf personnel advised some parts are still being shipped from overseas. Expected shortly.	Non-compliant
Enclosing the storage areas and maintaining a slight negative pressure	Refer to Section 6.2.1 in Odour Emissions and Biofilter Control Audit - smoke testing to confirm negative pressure and site observations.	Compliant
Construct and utilise tunnels for the pre-wet phase of substrate production	Sighted	Compliant
Construct the approved emissions treatment plant to a new design incorporating ammonia scrubbers and biofilter, instead of constructing a second bioscrubber and second chimney	Sighted	Compliant
Install extraction ductwork to extract air from various operating areas of the plant and deliver it to the new emissions treatment plant	Sighted	Compliant
Enclose the raw materials courtyard to contain chicken manure dust and enable controlled air extraction from this area	Sighted	Compliant
Extend the existing Phase 2/3 building from 22 to 25 tunnels (approximately 10 metres on its western side) to allow a longer residence time for the substrate in Phase 2/3 processing	NA	Not applicable not constructed
Other minor consequential changes to approved structures and operations	Sighted covering and ductwork of the collection pit and installation of two 100,000 litre tanks to improve water management and minimise use of dam.	Compliant

Table 9 Audit Findings of POST MOD 1 Process Management Activities to Minimise Odour

Process Management Actions	Evidence	Finding
Clean up any spillage on a daily basis	Discussions with Elf personnel advised this completed, no old material sighted during audit.	Compliant
Remove solid material from the collection pit screen regularly	Sighted records	Compliant
Desludge the collection pit (if sludge is present) at regular intervals (at least fortnightly)	Sighted records	Compliant
Keep external doors closed when not in use	Sighted	Compliant
Regular visual integrity checks of enclosures (buildings, conveyors ductwork) to identify potential leaks	Elf personnel conduct weekly walk around of the facility	Compliant
Maintain appropriate temperature and oxygen conditions during composting, consistent with the needs of the process, to minimise odour generation	Sighted PLC system within specifications	Compliant
Operate the ammonia scrubbers and biofilter in a manner to maximise their efficiency at removing odorous substances and odour causing substances from the air stream	Sighted SLR Odour Emission and Biofilter Control System Audit report, Section 5.2, biofilter efficiency >95%	Compliant
Minimise as far as practicable the duration of any bypassing of the ammonia scrubbers and biofilter for maintenance; and	Biofilter has not been off line for maintenance as yet.	Compliant
Schedule any necessary bypassing of the ammonia scrubber or biofilter to periods when hot substrate is not being turned and when weather conditions will assist dispersion	Not triggered	Not triggered

4.3.2 Odour Levels

4.3.2.1 Predicted

A review of the Odour Impact Assessment (OIA) prepared by The Odour Unit (TOU) was undertaken. The findings of the review are summarised below:

- Odour sampling was undertaken for point sources using the “lung method” (Section 4.1) and using an isolation flux hood (IFH) for area sources. The IFH sampling was carried out according to the method prescribed in the United States Environment Protection Agency (US EPA) technical report ‘EPA/600/8-86/008. This method is also defined in Australian Standard AS/NZS4323.4.
- An Odour emission inventory was developed from the sampling and testing program and used in the modelling. Emission sources included in the inventory were:
 - Water Recycle Pit – 2,182 ou.m³/s
 - Bale Wetting Area – 20,909 ou.m³/s
 - Stable Bedding Area – 575 ou.m³/s
 - Biofilter – 20,833 ou.m³/s per section (six sections)

The biofilter emission rate was based on 0.045 m/s exit velocity and average odour concentration of 1,000 ou.
- Phase 2/3 building – Modelled using mean odour concentration testing results (Table 3.3 from OIA – refer to **Table 10**)

Table 10 Phase 2 Odour Concentration Testing Results (from Table 3.3 in OIA)

Process Stage – Phase 2	Cycle Time (hrs)	Mean Odour Concentration (ou)
Tunnel venting	0-2	2,900
Levelling	2-18	5,090
Warm up pasteurisation	18-26	2,390
Pasteurisation	26-34	2,440
Cool-down (conditioning)	34-42	470
Conditioning #1	42-90	332
Conditioning #2	90-114	91
Cool-down (spawn)	114-148	43

4.3.2.2 Measured Odour Levels

As mentioned in **Section 4.1**, a separate team from SLR conducted the Odour Emissions and Biofilter Control System audit. Based on discussions with the EPA prior to commencing that audit, it was agreed that the following locations would be monitored for odour concentrations:

1. Biofilter inlet;
2. Biofilter bed (outlet); and
3. Vents from Phase 2/3 building during Conditioning #1 period. It is noted that Conditions #1 stage is automated and venting to atmosphere will occur (commence) when the required conditions in the individual tunnel have been met. This can occur at any time during the Cool-down Phase, which starts at approximately 34 hours.

Monitoring results from October 2018 and November 2018 are summarised in **Table 11**.

Table 11 Post MOD 1 Completion Odour Levels

Location	Mean Actual/ Predicted Odour Emission Concentration (ou)	Predicted Mass Odour Emission Rate (ou.m ³ /s)	Post MOD1 Measured Mean Odour Emission Concentration (ou)	Post MOD1 Measured Odour Emission Rate (ou.m ³ /s)
Biofilter Inlet	NA	NA	9,300	NA
Biofilter outlet	1,000	20,833	165	211
Vent – Conditioning #1	332	1,300-1,500	505*	1,776*

* Based on six odour monitoring results outlined in Table 14 of the Odour Emissions & Biofilter Control System Audit (dated March 2019).

4.3.2.3 Discussion of Results

The odour monitoring conducted as part of the Odour Emissions and Biofilter Control System audit showed odour emissions concentrations from the biofilter were significantly lower than the odour emission rate concentration used in the model (predicted).

The biofilter is operating at a 97% efficiency.

In regards to the vents, the measured odour concentration was considered to be the same as that assumed in the modelling study given the measurement of uncertainty, and the odour emission rate was only marginally higher than that used in the model (predicted). SLR considered the results to be comparable to the predicted levels in the OIA.

4.3.3 Odour Emissions and Biofilter Odour Control Audit Findings

SLR completed the odour audit of the facility as per Condition 5(e). Key activities undertaken as part of the audit include:

- Conducting Ambient Field Odour Surveys
- Biofilter odour testing
- Vent odour testing
- Smoke testing (negative pressure)
- Complaints review
- Production data review
- Recommendations

The results of the Ambient Field Odour (AFO) Surveys were as follows:

SLR commenced the AFO Surveys on Monday 12 November 2018 through to Sunday 18 November 2018. This represented a typical 7 day composting cycle. No surveys were performed on Saturday 17 November 2018. SLR was advised that no operations occur on Saturday and Sunday at the facility. Surveys were conducted from early morning (6:30am) to evening surveys (7:00pm) to ensure variability was captured with the different stages of operation.

SLR also considered the ambient temperature before conducting the field surveys. Odours are typically considered worst-case during the summer period and therefore SLR aimed to conduct the AFO surveys as close to summer as possible to represent worst-case scenarios.

In summary, the AFO Surveys identified that;

- *During wind speeds between 4 to 6 metres per second (m/s), odours could be detected approximately 350 m beyond the Elf Farm facility boundary, however at winds speeds less than 3 m/s odours could not be detected beyond the Elf Farm facility boundary.*
- *The maximum odour intensity perceived was odour intensity I=5 (Very Strong) and this was within the Elf Farm boundary.*
- *The maximum odour intensity perceived beyond the Elf Farm facility boundary was odour intensity I=3, however this was only at a distance of 150 m beyond the boundary and was a once off occurrence.*
- *Most odours recognised were of an Earthy, Chemical or Offensive group character. These characters related to the Biofilter, Leachate Pond or Compost / Product. It should be noted that although Offensive is used as a group character descriptor, the hedonic tone (how pleasant an odour is) was not considered offensive.*

- *The perceived hedonic tones for the odours detected from the Elf operations were typically of an unpleasant tone. However these hedonic tones were associated with odours within the Elf boundary. Hedonic tones experienced beyond the Elf boundary were considered marginally unpleasant (-1).*

The conclusions from Condition 5(e) odour audit were:

The following conclusions were drawn from the audit conducted;

- *The maximum odour plume reach was approximately 350 metres beyond the Elf facility boundary.*
- *The odour characters perceived during the Ambient Field Odour (AFO) Surveys were characterised as Earthy, Offensive and Chemical. Although Offensive has been used as a general character descriptor, this did not directly translate to the odour having an offensive hedonic tone. SLR observed an overall hedonic tone of marginally offensive (-1) on the 11-point scale during detection beyond the Elf boundary.*
- *The sources of odour identified were the Biofilter, Leachate Pond and Composting-manure/Product.*
- *The Biofilter Outlet complies with the predicted 500 ou from the Odour Impact Assessment (OIA) measuring a maximum of 250 ou.*
- *Character descriptors from the biofilter odour testing did not achieve a forest-floor-ish character. However 10 out of the 11 samples measured did have descriptors of dirt, musty, ashes, mouldy and pine needle notes which are all related to the category of Earthy. Note; odour character is subjective and therefore odour descriptors are based on the panel members personal experience and memories of odours as a referencing scale.*
- *The efficiency of the Biofilter (Inlet vs Outlet) achieved greater than 95% efficiency in reducing the odour concentration.*
- *Venting to atmosphere during the Conditioning #1 stage demonstrated similar results to those modelled in the OIA. SLR measured an average odour concentration of 505 ou compared to the modelled 332 ou.*
- *Buildings were tested for negative pressure by visual inspection (smoke testing). A small opening was left on the roller doors or access doors to buildings and smoke was released and observed. All buildings have negative pressure.*
- *Testing of wet bales was considered not applicable based on the AFO Survey conducted after a light rain event. No odours could be detected from the bales during the survey around the facility.*
- *The Balance Tanks were perceived as not odorous on the days of observation.*
- *The Western Dam was not dry during the AFO Surveys.*

The recommendations from the audit were:

The audit found the environmental management of the operations, including odour mitigation works (biofilter, negative pressured buildings, etc.) to be effective with no offensive odours from the plant observed beyond the boundary of the site. In order to ensure ongoing compliance with the EPA requirement of managing offensive odours beyond the boundary of the facility, it is recommended that:

- *Any complaint is investigated as soon as possible so that effective appraisal of the complaint can be carried out by subjective assessment.*

- *The Operational Environmental\Odour management plan is reviewed on an annual basis to ensure that it remains relevant to site operations and to determine whether improvements can be implemented.*
- *Daily boundary odour surveys are undertaken by trained staff in order to identify and mitigate offensive odours from the facility before the odours can lead to exceedances at nearby receptors.*
- *Annual testing of the biofilters is carried out in order to ensure the pollution control system is operating effectively.*

4.3.4 Odour Complaints Review

SLR reviewed the odour complaints for the past five years. In order to assess the impact of the construction, commissioning and operation of MOD1, the following key dates are critical:

- Construction commenced in August 2016.
- Installation, connecting and testing of services, plant and equipment commenced in February 2018.
- Introduction of product took place in May 2018 to enable testing and commissioning of the odour management system.
- Works were complete for MOD1 on 30 June 2018.
- Operations commenced on 1 July 2018, commissioning and fine tuning of the new plant continued through until end of October 2018.

Table 12 summarises the odour complaints received by Elf Farm Supplies since September 2012.

Table 12 Summary of Odour Complaints since September 2012

Complaints Period	Number of Complaints	Number of Wind Direction - Confirmed	Number of Wind Direction - Uncertain	Number of No-Location of Complaint Given	Mushroom Substrate Process		
					Complaints when undertaking Transfer	Complaints when Blending Phase 1	Complaints when Blending PW
Sept-Dec 2012	2	1	1	1	n/a	n/a	n/a
2013	109	43	46	22	22	13	39
2014	68	30	30	9	9	13	17
2015	125	74	32	8	14	44	22
Jan-Sept 2016	35	20	15	-	9	22	8
Sept 2016 – Oct 2017	53	10	21	4	28	12	19
Sept 2017 – Aug 2018	18	0	16	2	0	11	1
Totals	410	178	161	46	82	115	106

Source: 2018 AMER, Elf Farm Supplies (September 2018)

A review of the Elf Farm Supplies Complaint Register showed that there have been no odour complaints recorded by the company since the middle of November 2017. However, the EPA have received complaints and advised Elf during the same period. **Table 13** summarises the number of complaints received by each party.

Table 13 Odour Complaints Since November 2017

Period	No. of Odour Complaints Received Directly by Elf	No. of Odour Complaints Received by the EPA and Elf advised of the Complaint
14 Nov 2017 to 13 Dec 2017	0	1
13 Dec 2017 to 14 Jan 2018	0	0
14 Jan 2018 to 31 Jan 2018	0	0
February 2018	0	2
March 2018	0	1
April 2018	0	1
May 2018	0	4
June 2018	0	0
July 2018	0	4*
August 2018	0	2*
September 2018	0	0
October 2018	0	0
November 2018	0	0
December 2018	0	0

4.3.5 Odour Impact Assessment Review

The Odour Impact Assessment undertaken by The Odour Unit modelled three scenarios:

- *Scenario 1:* Proposed modification interim stage: Raw Materials Area and Recycled Water Handling Upgrade. The source groups modelled included emission from bale wetting area, stable bedding area and water recycled pit only. The raw materials area at this stage is contained, and that is set to zero emissions.
- *Scenario 2 – Biofilter system:* Modelled emissions from the biofilter system at 1,000 odour unit (ou) mean target concentration performance with containment of all other emission areas and sources. This scenario does not include the initial stages of Phase 2, refer to Scenario 3; and
- *Scenario 3 – Phase 2 and 3 Upgrade conditions.* Includes emission from the later stages of Phase 2 and all of Phase 3 from the roof exhaust vents from the extended and new Phase 2/3 Buildings. It is assumed emissions during the early stages of the Phase 2 process cycle are directed to the Emissions Plant and Biofilter System. The model scenario represents the exhaust emissions of the worst-case 24 hour snapshot, which was determined to be a total of 26,625 ou.m³/s (one hour average) running over a 24 hour period.

The results of the dispersion modelling for the three scenarios were:

- *Scenario 1:* Odour modelling showed exceedance of the 2 ou odour performance criterion for the urban areas to the south-west, west, northwest and northeast of the Facility. There is also an exceedance of the 4 ou to 7 ou criteria for the semi-rural and industrial areas to the east and south-east.
- *Scenario 2:* Odour modelling showed compliance with the 2 ou odour performance criterion *for most of the urban areas* (southwest, west, northwest and northeast) and compliance was achieved with the 4 ou to 7 ou odour performance criteria for the semi-rural and industrial areas to the east and south-east of the facility. It was noted that an urban area to the northwest is within the 2 ou contour. TOU stated the “exceedance shown in part of the urban area to the northwest is not considered to be problematical”.
- *Scenario 3:* Odour modelling showed compliance with the 2 ou for all urban areas and with the 4 ou to 7 ou criteria for the semi-rural and industrial areas.

4.3.6 Conclusions & Recommendations

Based on the site observations, review of the odour monitoring data, review of the independent odour audit findings, odour complaints and odour impact assessment report, SLR deems the MOD1 to be achieving the desired objective to minimise odour emissions from the site and achieving the predictions in the Odour Impact Assessment.

The SLR IEA audit team concurs with the odour audit team and would make the same recommendations.

5 Assessment of 2016 Recommendations

Table 14 summarises the recommendations made in the 2016 IEA and provides an updated on whether ELF implemented the recommendations, if it is still outstanding (ongoing), or Elf decided not to proceed.

Table 14 2016 IEA Recommendations

2016 Recommendation	Update	Status
Hold discussions with the Department of Planning and seek amendment to the Conditions of Approval and remove the necessary to have formal Environmental Management Strategy and have it replaced with a modified environmental management system.	Elf held discussions on 30 November 2016 with the Department to confirm that using an EMS framework to address all the elements of the condition would be acceptable. Elf anticipated completion date was 21 April 2017. This was not achieved and still on-going.	On-going
SLR recommends that a formal document control procedure and register be developed for all environmental (and possibly quality and health and safety) procedures, forms, guidelines, plans etc for the site.	The existing safety document control procedure and register was to be adapted. Elf anticipated completion date was 20 March 2017. This was not achieved and still on-going.	On-going
CEMP to be reviewed and updated to include Statement of Commitments which have not been incorporated.	Elf agreed to this recommendation. Elf anticipated completion date was 20 March 2017.	Not completed and closed.
Update the Environmental Site Inspection Checklists to include requirements from Schedule 3, Condition 8. (a) all areas are maintained in a condition to minimise the emission of wind-blown or traffic-generated dust	Recommendation implemented. Revised Environmental Site Inspection Checklist sighted.	Implemented and closed
Update Environmental Site Inspection Checklists to reflect key actions/measures outlined in the CEMP or alternatively development CEMP Audit Checklist which is more detailed and undertaken once a month.	Recommendation implemented. Revised Environmental Site Inspection Checklist sighted.	Implemented and closed
Complaints procedure - update the Complaints procedure to include documenting corrective action taken and root cause analysis where applicable (Section 6.4.3 of the procedure).	Decision was made not to implement this recommendation.	Not implemented and closed.
The Complaints Line form to be updated to include other potential complaints (dust, lighting, other) and section for corrective action to be completed/taken if complaint is legit and Elf is the source. Alternatively, this could be documented/incorporated into the Non-compliance Form.	Recommendation implemented. Revised Complaints Line form sighted.	Implemented and closed
Update Section 7.3 of the <i>Mushroom Substrate Plant, Mulgrave, Environmental Management Strategy, Report 134R2, May 2012</i> , which outlines noise monitoring requirements during operational phase. The table in Section 7.3 is now outdated as noise criteria has changed at several locations and this section of the Strategy needs to be updated to reflect Condition 19 limits.	Recommendation implemented. Revised Environmental Management Strategy, dated 16 January 2017 sighted. However, Section 7.3 does not have the current noise levels specified.	Open as information incorrect.
When the Operational Noise Management Plan Substrate Plant Mulgrave, 42.6411.ONMP_Mul:CFCD5, Rev 2 is updated as per Condition 22B it is recommended that a section on the noise mitigation measures that will be implemented during the operation of the facility once the Project (MOD 1) is completed to minimise noise from the operation.	Recommendation implemented. Revised Operational Noise Management Plan, dated 26 June 2018, sighted.	Implemented and closed.

2016 Recommendation	Update	Status
Recommend all emergency scenarios in the Pollution Incident Response Management Plan (PIRMP) are tested at least annually.	Elf incorporated into the projects compliance tracking and tasks management log.	Implemented and open.
Update Elf's NON-COMPLIANCE FORM to include: <ul style="list-style-type: none"> • Name of person writing up non-compliance; • Unique non-compliance referencing number (as per incident reporting); • Name of person responsible for implementing corrective action and proposed due date; • A "root cause analysis" section; and • A "Closed Out" section, where person has reviewed that all corrective actions were implemented and determines if the action were successful (need to document evidence). Need name and date of person who has signed off that the non-compliance had been adequately addressed. 	Implemented.	Implemented and closed.
SLR recommends a non-compliance log (simply excel spreadsheet) to be developed to record non-compliances. For example: Incident No. Date. Nature of Non-compliance.	Implemented.	Implemented and closed.

6 Assessment and Review of Licences and Plans

6.1 Introduction

This section of the report:

- Assesses the environmental performance of the Project;
- Assesses compliance with relevant requirements in any other licence (Environmental Protection Licence No 6229 (EPL));
- Assesses compliance with relevant plans and programs required in relation to the Project;
- Reviews the adequacy of the plans and programs reviewed and if appropriate; and
- Recommends measures or actions to improve environmental performance of the Project and or any plan or program reviewed as part of the audit scope.

6.2 Environmental Performance

A review was undertaken of the two Annual Environmental Management Reports (AEMR) prepared for the site by Elf covering the periods:

- September 2016 to August 2017
- September 2017 to August 2018

Table B of the 2017 AEMR identified four non-compliances in relation to the Project Approval:

- Schedule 3, Condition 20 – Hours of Work – construction hours (3 occasions), which was also related to two non-compliances with Schedule 5, Condition 25 relating to lighting. By working outside the construction hours directly lead to lighting complaints.
- Schedule 2, 2(c) – The proponent shall carry out the Project generally in accordance with the (d) MOD1.

No non-compliances in relation to the Project Approval in the 2018 AEMR. However, SLR believe that this should have been at least one as a complaint was received in September 2017 relating to lighting and hence should have been recorded as non-compliance against Project Approval Condition 24 of Schedule 5.

The 2017 and 2018 AEMR were produced in accordance with the Condition 3 of Schedule 5. It is noted that the Department of Planning and Environment has requested additional requirements to be incorporated into future reports. This was specified in a letter dated 26 October 2018.

All EPL and Project Approval monitoring required in 2017 and 2018 (odour and noise monitoring) has been carried out and compliance achieved.

The environmental performance of the MOD1 project has been completed, refer to Section 4, the odour audit.

6.3 EPL 6229

The Site operates under EPL No. 6229. During this IEA period, two Pollution Studies and Reduction Programs were completed, refer to **Table 15** for details.

Table 15 Completed EPL Pollution Studies and Reduction Programs

Title	Program Type	Start Date	Complete Date
Ensure negative pressure in Pre-wet and Phase 1 buildings under all operating conditions and treatment of air discharges	Odour	14 August 2014	21 September 2018
Community engagement	Odour	6 December 2014	6 December 2016
Restrict substrate production rate until odour mitigation works are completed	Odour	30 September 2016	3 October 2018

In general, the site was generally operating in compliance with the EPL conditions during the IEA reporting period. One exception was in relation to Condition L5 which related to the emission of potentially offensive odour, which was still going to occur whilst the construction of the new facilities associated with the MOD1 project were being completed. As a result of Elf not making any further improvement in odour performance until MOD1 odour treatment system was constructed the EPA restricted substrate production to 1,400 tonnes per week under MOD1 works were completed and operational (EPL Condition U3.1). Records were provided to show that Elf complied with this requirement during this IEA reporting period.

Condition EPL U3.2 also required Elf to provide EPA with written advice 10 days prior to the MOD1 commencing operations. MOD1 commenced on 1 July 2018 according to email correspondence between Elf and the Department of Planning, Elf notified the EPA of its intention to increase production to 1,600 tonnes in a letter dated 21 September 2018. Non-compliance with this EPL condition was not met.

It was identified that the EPL had recently been updated and re-issued on 4 October 2018. The main changes identified were:

- P1.1 Location of monitoring/discharge point – removal of the bio-scrubber discharge point;
- L2.3 removal of air concentration limit – odour – for the bioscrubber;
- M2 Requirements to monitor concentration of pollutants and discharged – removed as it related to the monitoring of the bioscrubber;
- M3 Testing Methods – concentration limits – deleted as it related to the bioscrubber; and
- Section 8 Pollution Studies and Reduction Programs – this entire section was deleted as all the studies and programs had been completed (refer back to Table 14).

As identified in the previous IEA and still current for this IEA, SLR identified the following additional non-compliance, not already identified in this audit report:

- E1.4 f) Odour Complaint Report – Condition f) requires the oxygen content of the compost in the pre-wet processing phase to be recorded from one hour preceding the odour incident until the time the incident is reported to have ceased. This has not been occurring and is not possible as complainants do not usually advise of stop times for odour complaints. In the previous IEA it was recommended that discussions be held with the EPA to remove this condition. SLR has been advised this did not occur.

6.4 Review of the Plans, Strategies and Recommendations for Improvement

During the audit, the auditor sighted and reviewed a number of environmental management plans including but not limited to the Operational Noise Management Plan, Water Management Plan, Odour Management Plan and the Environmental Management Strategy for the Site. It is clear that the plans and Strategy have evolved over a number of years in line with the Conditions of Approval granted by the Department of Planning in 2012 and then MOD 1.

Table 16 summarises other recommendations that have come from reviewing Elf's Environmental Management Strategy, Plans, procedures and associated forms.

Table 16 Recommendations for Improvement for Plans and Procedures

Recommendation	Justification
Environmental Management Strategy, Section 7.3, needs to be updated to reflect the current criteria.	The Operational Noise Management Plan refers to in Section 2.1 the Department of Planning replacing the noise assessment objectives set out in Condition 19 of Schedule 3. Evidence of this change sighted in Modification of Minister's Approval issued on 14 March 2016 for Project Approval MP 08_0255.
Environmental Management Strategy including appendices need to be reviewed and updated	For examples, Sections 4.3, 5.2.2, 5.3, 5.9.3, 7.2, 7.3 and 8.2 are not current. The Figures in the Strategy should also be updated. Reporting section of the report needs to be updated to include the additional information that the Department of Planning and Environment requires in the Annual Management Environmental Review report as per their letter dated 26 October 2018. Appendices to be updated to ensure personnel have current plans and licences to refer to and ensure correct management practices and procedures are followed. Appendix A has obsolete EPL, Appendix C has obsolete Water Management Plan, Appendix D has obsolete Operational Noise Management Plan. Appendix E has obsolete Odour Management Plan.
Update the Water Management Plan to include the two additional 100,000 litres tanks recently installed to assist with managing the site water and wastewater.	To ensure that the Water Management Plan reflects all current practices on site to manage water.
Update the Odour Management Plan to include the covering and extraction of air from the western pit to the biofilter control system and the additional tanks.	To ensure that the Odour Management Plan reflects all the current practices on site for managing odour.

7 Conclusions

The Project Approval MP 08_0255 consists of 69 conditions in total. This IEA covers the period from 1 March 2017 to 14 March 2019.

The audit was carried out between September 2018 and March 2019, with SLR being supplied information as requested. The audit took longer than expected as SLR preferred to wait for the Odour Emissions and Biofilter Control System Audit required under Condition 5(e) to be completed as it was a key audit to determine the success of the MOD1 project. This audit report was completed on 1 March 2019.

The information, results and discussions from the SLR Odour Emissions and Biofilter Control System Audit was utilised in the IEA Odour Audit component. The overall conclusion of the audit was the MOD1 project has achieved its objectives of minimising offensive odours.

Of the 69 Conditions, 15 (22%) were considered closed as per the findings of the previous IEA in 2016, 7 (10%) were considered not triggered and one (1) was classified as notes for information and not requiring auditing, hence 46 conditions were audited.

Of the 46 auditable conditions, compliance was achieved for 32 (70%), non-compliance recorded for 14 conditions (30%). Of the 14 non-compliances, 6 (43%) were classified as administrative non-compliances. Two of the administrative non-compliances were related to the Department of Planning not approving elements as they were waiting on MOD3 determination.

It is noteworthy that several of the non-compliances were for the same activity. For example, operating outside construction hours meant non-compliances were recorded against Condition 2 of Schedule 2, Condition 1A of Schedule 3 and Condition 20 of Schedule 3.

All non-compliances were assessed to be of a low risk.

70% compliance was an improvement on the 2016 IEA, where 61% compliance was achieved.

Also during the process, a high degree of senior management commitment at Elf to minimising the impact on the environment was evident. Elf was commended for ensuring all incidents and non-compliances are identified and corrective action implemented as soon as possible as evidenced by incident and non-compliance registers, corrective action plans/implementation and introduction of additional environmental resources. During the audit, Elf management appeared receptive and encouraged the auditor to identify opportunities for improvement.

Elf has also demonstrated continuous environmental improvement by capturing the air emissions from the western pit and transferring the air into the biofilter control system and installing two 100,000 litres tanks to assist with water and odour management on-site.

In conclusion, the environmental performance of the site has improved since the completion of construction and commencement of the odour control system.

7.1 Recommendations

The following recommendations, **Table 17**, related to non-compliances, are made to assist in responding to the issues raised in this audit, along with recommendations made in Section 6.4 and in **Table 16**.

Table 17 Audit Recommendations

Recommendation	Justification
Ensure that the critical spares for machinery and equipment relating to the new facility is obtained from Europe as soon as possible.	To minimise any disruption from plant and equipment failure that may occur. As the main elements of the plant were received from overseas, it is imperative that critical spares are held on-site due to the time to receive them from overseas if something was to occur.
Elf to implement a system to ensure compliance with meeting reporting requirements.	A number of non-compliances identified related to late submissions of plans, certification documents and reports to the Department. Elf to consider a system to highlight submission requirements to improve this aspect of their operation.
Elf to specify what is considered to be a “high rainfall” event and document that in the Water Management Plan and ensure the Department is notified accordingly.	To ensure no confusion as to when Elf is to notify the Department of Planning of the emergency use of the dam as per Schedule 3, Condition 17C.
Elf to update the Community as per the Community Consultation strategy regarding the completion of the construction works.	To advise the community of the completion of construction and to comply with the requirements of Schedule 5, Condition 7.
Elf to update their website as per the requirements of Schedule 5, Condition 8.	To bring the website up-to-date with where the project is at, ensure all current management plans and Strategies are available to the

7.2 Opportunities for Improvement

Table 18 summarises additional opportunities for improvement suggested for consideration by Elf to aid in environmental management on site and reduce the risk for potential environmental harm.


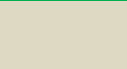





Table 18 Additional Recommendations and Opportunities for Improvement

Opportunities / Recommendations	Justification
Develop and implement a modified environmental management system.	This was a recommendation from 2016 IEA that Elf agreed to implement and is still ongoing.
SLR recommends that a formal document control procedure and register be developed for all environmental (and possibly quality and health and safety) procedures, forms, guidelines, plans etc for the site.	This was a recommendation from 2016 IEA that Elf agreed to implement and is still ongoing.
Implementation of the recommendations from the Odour Emissions and Biofilter Control System audit.	To assist with maintaining compliance with the EPA requirements of managing offensive odours beyond the boundary.

APPENDIX A

Detailed Audit Findings

Key:

	Compliant
	Not triggered
	Not verified or waiting Planning Response
	Administrative non-compliance (as per Independent Audit Guideline)
	Non-compliant – with low risk level (as per Independent Audit Guideline)
	Non-compliant – with high risk level
	Closed

Schedule 2 of MOD 1 – Administrative Conditions

Table 19 Administrative Conditions

Condition	Requirement	Interviews and Inspections	Documentation Viewed / Assessment Status	Compliance Status
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 and/or operation of the Project	Interview: General Manager – advised all measures have been implemented thus far to prevent harm to the environment.	<p>Documentation viewed:</p> <ul style="list-style-type: none"> <i>Elf Farm Supplies Mushroom Substrate Facility – Annual Environmental Management Review, Mulgrave, NSW, Revision 1, November 22 2017</i>, prepared by Compaction and Soil Testing Services Pty Ltd on behalf of Elf Farm Supplies Pty Ltd. <i>Elf Farm Supplies Mushroom Substrate Facility – Annual Environmental Management Review, Mulgrave, NSW, Revision 0, 28 September 2018</i>, prepared by Elf Farm Supplies Pty Ltd. <p>No penalty notices have been issued to Elf in the past two reporting periods.</p> <p>No letters received from EPA or Planning concerning any environmental incidents that could cause harm to the environment.</p>	Compliant
Terms of Approval				
2	<p>The Proponent shall carry out the Project generally in accordance with the</p> <ul style="list-style-type: none"> (e) EA; (f) Statement of commitments (See Appendix a); (g) Site layout plans and drawings in the EA; and (h) MOD 1. 	<p>Site inspection – MOD 1 completed generally in accordance with the plan.</p> <p>Interview – Administration Manager also advised that on three occasions during this audit period when construction operations for MOD 1 went outside hours of construction, NCN4, NCN5 and NCN6.</p>	<p>Documentation viewed:</p> <ul style="list-style-type: none"> <i>Elf Farm Supplies, Staged Development of Mushroom Substrate Plant, Construction Environmental Management Plan, Revision No.1 July 2016, Prepared By Perram & Partners.</i> <i>2015 EA Titled Mushroom Substrate Plant Modification to Approved Project, Environmental Assessment (Perram &</i> 	Non-compliant

			<p><i>Partners, February 2015)</i></p> <p>Other documents sighted included:</p> <ul style="list-style-type: none"> • Elf Farm Supplies Pty Ltd and Elf Mushrooms Pty Ltd <i>Mushroom Expansion in Western Sydney, Preliminary Environmental Assessment, Perram & Partners, November 2008 121R1.</i> • <i>Elf Mushrooms and Elf Farm Supplies Pty Ltd Mushroom Industry Expansion in Western Sydney, Environmental Assessment, Volume 1, Report 121R3, December 2010, Perram & Partners.</i> • <i>Elf Mushrooms and Elf Farm Supplies Pty Ltd Mushroom Industry Expansion in Western Sydney, Environmental Assessment, Volume 2, Report 121R3, December 2010, Perram & Partners.</i> • <i>Elf Farm Supplies Mushroom Substrate Facility – Annual Environmental Management Review, Mulgrave, NSW, Revision 1, November 22 2017,</i> • <i>Elf Farm Supplies Mushroom Substrate Facility – Annual Environmental Management Review, Mulgrave, NSW, Revision 0, 28 September 2018, prepared by Elf Farm Supplies Pty Ltd.</i> • <i>Non-compliance Forms for NAC4, 5 and 6 relating to working outside construction hours and lighting complaints.</i> 	
3	<p>If there is any inconsistency between the above documents, the most recent document shall prevail to the extent of the inconsistency. However, the conditions of this approval shall prevail to the extent of any inconsistency.</p>			<p>Note: No inconsistency between the documents was identified. Notwithstanding, the conditions of the approval are</p>

				used as the basis for managing compliance on site.
4	<p>The Proponent shall comply with any reasonable requirement/s of the Secretary arising from the Department's assessment of:</p> <p>a) any reports, plans, strategies, programs or correspondence that are submitted in accordance with this approval; and</p> <p>b) the implementation of any actions or measures contained in these reports, plans, strategies, programs or correspondence.</p>	Interviews - General Manager provided evidence of meeting requests from the Department. For example submitting documents on time.	<p>Documents viewed:</p> <ul style="list-style-type: none"> Letter from Department of Planning and Environment dated 15 February 2018 approving the Odour Management Plan. Letter from Department of Planning and Environment dated 28 October 2018 approving the 2018 AEMR and making recommendations for the next AEMR. Letter from Department of Planning and Environment dated 13 March 2018 granting an extension of time for the construction of the odour emission plant until 30 June 2018, however the Department stated that the certification in accordance with Condition 3B, Schedule 3 was required to be lodged prior to 30 June 2018. <p>This lodgement date was not adhered to, the certification letter was not completed until November 2018 by The Odour Unit.</p> <ul style="list-style-type: none"> Email from Planning Compliance Officer dated 9 October 2018 seeking confirmation. Email response from Elf sighted dated 11 October 2018 responding to the request. Email from Planning dated 20 September 2017 requesting a number of revisions to the updated Water Management Plan that was submitted on Thursday 14 September 2017. 	Administrative Non-compliance
5	This approval shall lapse if the Proponent does not physically commence the proposed development association with this approval	Site inspection – MOD1 EA - civil works began on 22 August 2016.	Modification of Minister's Approval, dated 14 March 2016, Project Approval: MP 08_0255 granted by the Minister for Planning on 11	Compliant

	within 5 years of the date of this approval.		January 2012, Modification Number MP 08_0255 MOD 1.	
Limits of Approval				
6	<p>(1) The Proponent shall ensure that the Project on the Substrate Plant site does not:</p> <p>a) Product more than 3,200 tonnes per week of phase 1 substrate; subject to (2) below and</p> <p>b) Dispatch more than 1,920 tonnes of phase 3 substrate per week</p>		<p>Documentation viewed:</p> <ul style="list-style-type: none"> Environment Protection Licence 6229. <p>Condition U3 - EPA placed a restriction on substrate production rates to keep below 1,400 tonnes per week from 4 November 2016 until MOD1 are completed and operational. EPA deemed this condition lifted as of 3 October 2018.</p> <ul style="list-style-type: none"> Production data for Phase 1 substrate from November 2016 to the end of September 2018. No exceedance of 1,400 tonnes per week of Phase 1. 	Compliant
	<p>(2) The proponent shall 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 Secretary in accordance with condition 7 Schedule 2 below.</p>		<p>Documentation viewed:</p> <ul style="list-style-type: none"> Environment Protection Licence 6229. <p>Condition U3 - EPA placed a restriction on substrate production rates to keep below 1,400 tonnes per week from 4 November 2016 until MOD1 are completed and operational. EPA deemed this condition lifted as of 3 October 2018.</p> <ul style="list-style-type: none"> Production data for Phase 1 substrate from November 2016 to the end of September 2018. 	Compliant
7	<p>(1) The Proponent may apply to the Secretary 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 –</p> <p>a) The Odour Management Plan required under condition 6 of Schedule 4 has been prepared to the satisfaction of the Secretary</p>	Notes – original conditions. Note conditions referenced no longer exist. The condition should read Condition 4 of Schedule 4 not condition 6.	<p>Documentation viewed:</p> <ul style="list-style-type: none"> Environment Protection Licence 6229. <p>Condition U3 - EPA placed a restriction on substrate production rates to be kept below 1,400 tonnes per week from 4 November 2016 until MOD1 are completed and operational.</p> <ul style="list-style-type: none"> Production records for substrate phase 1 from November 2016 to mid January 2019 	Compliant

	<p>and is being implemented; and</p> <p>b) An independent odour audit has been prepared and submitted in accordance with Condition 5 of Schedule 3.</p>		<p>showing compliance with EPL Condition.</p> <ul style="list-style-type: none"> Email dated 11 October 2018 from Elf to the Department of Planning advising MOD 1 works were completed on 30 June 2018. Letter from Elf Farm Supplies Pty Ltd, dated 21 September 2018 advising EPA that the odour mitigation works had reached practical completion and operational. In 10 working days Elf will increase production back to 1,600 tonnes per week as approved in conditions of consent. Environment Protection Licence 6229, dated 4 October 2018, removing the restriction on production. 	
	<p>(2) The Proponent may apply to the Secretary 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 –</p> <p>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 Secretary under this condition; and</p> <p>b) An independent audit of the site operating in this range has been prepared and submitted in accordance with Condition 5c) of Schedule 3.</p> <p>Production of up to 2,400 tonnes of phase 1 substrate a week may not occur until the Proponent has received written approval of the Secretary.</p>	<p>Interview: General Manager – Elf is planning to increase production to increase production from 1,600 tonnes of phase 1 substrate a week to up to 2,400 tonnes of phase 1 substrate a week. This application will be made in 2019.</p>	<p>Not applicable.</p>	<p>Not triggered</p>

	<p>(3) The Proponent may apply to the Secretary 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 –</p> <p>c) 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 Secretary under this condition; and</p> <p>d) An independent audit of the site operating in this range has been prepared and submitted in accordance with Condition 5c) of Schedule 3.</p> <p>Production of up to 3,200 tonnes of phase 1 substrate a week may not occur until the Proponent has received written approval of the Secretary.</p>	Not applicable.	Not applicable.	Not triggered
	<p>(4) In deciding whether to approve an increase in substrate production under this condition, the Secretary must:</p> <p>a) Assess the odour performance of the premises at its current rate of production; and</p> <p>b) Assess the likely odour impacts from the proposed increase; and</p> <p>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;</p> <p>d) Consider EPA advice regarding compliance with the POEO Act.</p>			Note

7A	Unless otherwise agreed in writing by the Secretary, the Proponent shall ensure that the work associated with MOD 1, with the exception of the additional Phase 2/3 tunnels and the pre-wet tunnels to be constructed as part of Stage 3 (as identified on the plan in Appendix 2) has been constructed and is operating within two years from the date of the approval of MOD 1.	Interview: General Manager advised that the civil works commenced on 22 August 2016. Inspection in September 2016 – Auditor sighted the civil works that had commenced on the biofilter site.	Documentation viewed: <ul style="list-style-type: none"> Letter from Department of Planning and Environment dated 13 March 2018 granting an extension of time for the construction of the odour emission plant until 30 June 2018. Email from Elf Farm Supplies Administrative Manager on 6 August 2018 advising operational date commenced on 30 June 2018. Email from Elf Farm Supplies on 5 September 2016 confirming civil works commenced on 22 August 2016. <i>Modification of Minister's Approval, dated 14 March 2016, Project Approval: MP 08_0255 granted by the Minister for Planning on 11 January 2012, Modification Number MP 08_0255 MOD 1.</i> 	Compliant
7B	Nothing in this approval permits the construction of the landscaped mound along the Substrate Plan site's western boundary identified in the letter from WMA Water dated 21 January 2016.		This condition related to previous IEA (2016).	Closed
Mushroom Farm Site				
8	The Proponent shall ensure that the Mushroom Farm site does not produce more than 220 tonnes mushrooms per week.	Interview: WHS & HR Manager advised on 8 January 2018 that the mushroom farm has not been constructed.	Not triggered.	Not triggered.
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 Secretary.		This condition related to previous IEA (2016).	Closed
Transitional Arrangements				

10	All existing environmental management plans that apply to 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.		All consents have been surrendered as per Condition 9. This condition considered closed.	Closed
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: <ul style="list-style-type: none"> Under Part 4A of the EP&A Act, the Proponent is required to obtain construction and occupation certificates for the proposed building works. Part 8 of the EP&A Regulation sets out the requirements for the certification of the Project. 		Documentation viewed: <ul style="list-style-type: none"> Certificate number: 8011183-10– Construction of a Mushroom Substrate Plant consisting of multiple buildings, dated 23 February 2018. 	Compliant
11A	The Proponent shall ensure that any structures which require a relevant alternate solution developed to meet the performance requirements of the BCA shall be designed in consultation with Fire and Rescue.	Interview: Administration Manager advised on 8 January 2019 required a alternate solution.	Documentation viewed: <ul style="list-style-type: none"> Certificate number: 8011183-10– Construction of a Mushroom Substrate Plant consisting of multiple buildings, dated 23 February 2018. This certificate includes Fire Safety Schedule. 	Not triggered
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.	Site inspection: Phase 1 tunnel and existing weighbridge sighted.	Documentation viewed: <ul style="list-style-type: none"> Email response from Elf to auditor confirming west wall not demolished and existing weighbridge and Phase1 tunnel site standing. Perram & Partners, July 2016, <i>Elf Farm</i> 	Not triggered

			<p><i>Supplies, Staged Development Of Mushroom Substrate Plant, Construction Environmental Management Plan, Revision No1, 137R1.</i></p> <p>Section 2.2.2 states <i>There is no significant demolition associated with the project. Minor demolition works including removing sections of the western wall of the existing pre-wet shed, removing part of the northern façade of the Phase 1 tunnel building and removing an existing weighbridge.</i></p>	
Operation of Plant and Equipment				
13	<p>The Proponent shall ensure that all plant and equipment used for the Project is:</p> <ul style="list-style-type: none"> a) Maintained in a proper and efficient condition and b) Operated in a proper and efficient manner. 	<p>WHS Manager advised in January 2019 – 7 full time maintenance staff including Maintenance Manager, Elf manages plant and equipment via a number of mechanisms including as per 2016 IEA:</p> <ul style="list-style-type: none"> • Equipment Register (since 2015) • Daily maintenance records thru employee diaries • Maintain a Major Plant Item spreadsheet • Have Standard Operating Procedures (SOPs) for all major pieces of plant • Training needs analysis process in place for personnel to ensure they are competent to operate plant and equipment. 	<p>Documents viewed:</p> <ul style="list-style-type: none"> • Training Needs Analysis (TNA) records sighted for Jack Maslin, Luke Stone, Michael D, Josh M, Kevin Whitby, Leighton C, Steve C, Matt. 	Compliant
Utilities				
14	<p>Prior to the construction of any utility works, the Proponent shall obtain the necessary approvals from relevant service providers.</p>		<p>Documentation viewed:</p> <ul style="list-style-type: none"> • Letter from Endeavour Energy dated 5 March 2018 – approving the connection of load at facility. 	Compliant
Submission of Plans or Programs				

15	<p>With the written approval of the Secretary, the Proponent may:</p> <ol style="list-style-type: none"> Submit any reports, plans, strategies or programs required by this approval on a progressive basis; and 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. Separate 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. 		<p>Documents viewed included:</p> <ul style="list-style-type: none"> Letter from Department of Planning and Environment dated 15 February 2018 approving the Odour Management Plan. Letter from Department of Planning and Environment dated 28 October 2018 approving the 2018 AEMR and making recommendations for the next AEMR. Letter from Department of Planning and Environment dated 13 March 2018 granting an extension of time for the construction of the odour emission plant until 30 June 2018. <p>Auditor sighted letters of communication and emails between Elf Farm Supplies environmental planning consultant, Perram & Partners and the Department of Planning & Environment seeking approvals of plans on an on-going basis to meet the Conditions of Approval.</p>	Compliant
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Schedule 3 – Specific Environmental Conditions

Table 20 Specific Environmental Conditions

Condition	Requirement	Interviews and Inspections	Documentation Viewed / Assessment Status	Compliance Status
Construction Environmental Management Plan				
1	<p>The Proponent shall prepare and implement a Construction Environmental Management Plan for the Substrate Plant site to the satisfaction of the Secretary. This plan must:</p> <ul style="list-style-type: none"> a) Be prepared in consultation with NOW and EPA; b) Be submitted for approval prior to commencement of construction and include: <ul style="list-style-type: none"> • 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 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 		This condition related to previous IEA period (2016) and is now closed.	Closed

Condition	Requirement	Interviews and Inspections	Documentation Viewed / Assessment Status	Compliance Status
1A	<p>The Proponent shall update the CEMP required by Condition 1 of Schedule 3 to include the works associated with MOD 1. The updated plan shall be submitted to and approved by the Secretary prior to the commencement of any construction works associated with MOD 1.</p> <p>The revised CEMP shall be implemented throughout the construction works.</p>	<p>Elf advised that the main aspects of the construction were completed in February 2018. In February 2018 Elf commenced installing, connecting and testing of services, plant and equipment.</p> <p>Implementation of the majority of the revised CEMP was not possible due to construction been completed by the time the audit commenced.</p> <p>During the site visit the WHS Manager advised that the Environmental Site Inspection Checklist were not completed once Tete Awotedu (Elf's Environmental Consultant) ceased working for Elf.</p>	<p>Elf Farm Supplies, Staged Development of Mushroom Substrate Plant, Construction Environmental Management Plan, Revision 1, July 2016 Perram & Partners.</p> <p>The first aspect of the condition relating to the updating and submission of the CEMP relates to previous IEA period (2016).</p> <p>This audit period covers the implementation of the CEMP. Implementation is difficult to verify as the site inspections occurred after construction was completed.</p> <p>Non-compliance that were identified included</p> <ol style="list-style-type: none"> 1. Construction activities occurred outside nominated hours in Construction Noise & Vibration Management Plan (Section 7.0) on the three occasions – 21 July 2017 (Complaint No. 180) and 29 August 2017 (Complaint No. 183). 2. Two complaints / non-compliances were recorded in relation to lighting (21 July 2017 (Complaint No. 181), 29 August 2017 (Complaint No. 184). These were due to late deliveries outside construction hours. 3. Environmental Inspection Checklist not completed throughout the construction period. 4. Section 7.3.2 (i) Environmental Journal was not complied with for the duration of construction. This was a combination of Construction Diary which lists activities which have occurred that day and the Environmental Site Inspection Checklists as noted above. 	Non-compliant

Condition	Requirement	Interviews and Inspections	Documentation Viewed / Assessment Status	Compliance Status
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.		<p>Documentation viewed:</p> <ul style="list-style-type: none"> • <i>Elf Farm Supplies Mushroom Substrate Facility – Annual Environmental Management Review, Mulgrave, NSW, Revision 1, November 22 2017</i>, prepared by Compaction and Soil Testing Services Pty Ltd on behalf of Elf Farm Supplies Pty Ltd. • <i>Elf Farm Supplies Mushroom Substrate Facility – Annual Environmental Management Review, Mulgrave, NSW, Revision 0, 28 September 2018</i>, prepared by Elf Farm Supplies Pty Ltd. • <i>Complaints Register</i> on the Elf Farm Supplies website. • <i>SLR Independent Odour Audit Report, SLR Reference No. 610.18411-R01-v1.0</i> <p>Odour complaints continued to be received, as expected during the construction period and commissioning phase of the project. Hence non-compliance with this condition was anticipated for part of the reporting period.</p> <p>As discussed in Section 4 of this report, the number of odour complaints has reduced significantly since odour emission plant came on-line. The independent odour audit which was conducted by SLR concluded that the MOD1 project has met its objectives in terms of minimising offensive odours at the boundary.</p>	Non-compliant

Condition	Requirement	Interviews and Inspections	Documentation Viewed / Assessment Status	Compliance Status
Air Quality - Odour Emissions Plant Design and Construction				
3	<p>Prior to the commencement of construction of the works associated with MOD1, the Proponent shall commission and pay the full cost of an independent odour specialist to review the detailed design of the odour emissions plant and assess its capacity to meet the performance criteria within the Environmental Assessment for MOD1. The review shall:</p> <ol style="list-style-type: none"> Be provided to the Secretary and the EPA within two weeks of finalisation of the review; and Be endorsed by the Secretary in consultation with the EPA prior to the commencement of construction of the works associated with MOD 1. <p>Should the review not certify that the odour emissions plant has the capacity to meet the performance criteria within the Environmental Assessment for MOD 1, then the Proponent shall undertake additional design to meet the criteria, to the satisfaction of the Secretary within the timeframe specified by the Secretary. The additional design is to be endorsed by the independent odour specialist.</p>		This condition related to previous IEA period.	Closed
3A	The Proponent shall construct the odour emissions plant in accordance with the final design endorsed by the independent occur specialist required by Condition 3.		<p>Documentation viewed:</p> <ul style="list-style-type: none"> Letter Report from The Odour Unit to Elf Farm Supplies dated 19 November 2018. Schedule 3 Condition 3B – As Constructed Letter Report. 	Compliant

Condition	Requirement	Interviews and Inspections	Documentation Viewed / Assessment Status	Compliance Status
3B	<p>Prior to the commencement of operation of the odour emissions plant, the Proponent shall commission and pay the full cost of an independent odour specialist to certify that the 'as constructed' odour emissions plant has been undertaken in accordance with the final detailed design with reference to the Environmental Assessment for MOD 1 and the outcomes of Condition 3 of Schedule 3.</p> <p>A copy of the certification is to be provided to the Secretary and the EPA within one week of its finalisation.</p>		<p>Documents viewed:</p> <ul style="list-style-type: none"> Letter Report from The Odour Unit to Elf Farm Supplies dated 19 November 2018. Schedule 3 Condition 3B – As Constructed Letter Report. Letter from Department of Planning and Environment dated 13 March 2018 granting an extension of time for the construction of the odour emission plant until 30 June 2018, however the Department stated that the certification in accordance with Condition 3B, Schedule 3 was required to be lodged prior to 30 June 2018. Email dated 21 November 2018 from Elf to their consultants, Perram & Partners, requesting Mr Perram to submit the Letter Report to the Department of Planning as per the Condition. Email dated 21 November 2018 from Perram & Partners confirming submission of the letter report to Planning. <p>Elf did not comply as construction was completed by 30 June 2018 however the certification report was not completed until November 2018. Note that letter received on 13 March 2018 over rode the element of this condition around reporting timing.</p> <p>Elf did not submit the certification letter to the EPA as per the Condition.</p>	Administrative non-compliance

Condition	Requirement	Interviews and Inspections	Documentation Viewed / Assessment Status	Compliance Status
3C	The Proponent shall implement all reasonable and feasible measures to ensure that all new structures are constructed to prevent corrosion from the atmosphere contained within those structures.	Interview: Administration Manager advised that all relevant materials were galvanized and provided several examples of tax invoices to verify this.	<p>Documentation viewed:</p> <ul style="list-style-type: none"> • Elf Farm Supplies Pty Ltd, Mushroom Substrate Plant, Modification to Approved Project, Environmental Assessment, Report 136R2, February 2015. Perram & Partners. • Egan Fabrications Pty Ltd, Tax Invoice 00016996, dated 27 June 2018 • Egan Fabrication Pty Ltd, Tax Invoice 0016924, dated 30 April 2018, supply of labour and galvanizing for Stage 2 Parking bay. • Egan Fabrication Pty Ltd, Tax Invoice 0016925, dated 30 April 2018, fabricate, supply door frame steel as per drawing from galvanising. • GTL Europe: Re: 10 Phase 1 Bunkers. No. P132710.13 date 7 October 2016. • GTL Europe Engineering BV, 9 tunnels, P132720.06, 12 June 2017, steel specifications included. 	Compliant
Odour Management Plan				

Condition	Requirement	Interviews and Inspections	Documentation Viewed / Assessment Status	Compliance Status
4	<p>The Proponent shall prepare and implement an Odour Management Plan for the Substrate Plant site to the satisfaction of the Secretary. This plan must:</p> <p>(a) be prepared in consultation with the EPA by a suitably independent , qualified and experienced expert whose appointment has been endorsed by the Secretary;</p> <p>(b) be submitted to the Secretary for approval within 3 months of the date of this approval;</p> <p>(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;</p> <p>(d) identify triggers for remedial and contingency action; and</p> <p>(e) include a program for monitoring the odour impacts of the Project.</p>		This condition related to previous IEA reporting period (2016).	Closed

Condition	Requirement	Interviews and Inspections	Documentation Viewed / Assessment Status	Compliance Status
4A	<p>The Proponent shall update the Odour Management Plan for the Substrate Plant site, in consultation with the EPA, to the satisfaction of the Secretary. This plan is to update the plan approved under Condition 4 of Schedule 3 and shall:</p> <p>(a) be prepared a suitably independent, qualified and experienced expert whose appointment has been endorsed by the Secretary; (b) be submitted to the Secretary for approval within one month of the date of endorsement by the Secretary of the odour emissions plant design as required under Condition 3(a) of the approval; (c) identify of all major sources of odour; (d) include management measures to ensure no offensive odours from the Substrate Plant site; (e) include procedures for the monitoring of odour emissions, in accordance with the requirements of the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> and any requirements of the EPA. The odour monitoring program shall include, but not be limited to: i. results of the complaints handling system; and ii system and performance review for continuous improvement; (f) include odour management performance parameters that are consistent with the manufacturers' performance guarantees provided for the biofilter and scrubbers; (g) include measures to prevent and/or mitigate fugitive emissions; (h) include triggers for remedial and contingency action; (i) include contingency measures in the event of failure of any component of the odour emissions plant and biofilter system or identification of fugitive emissions from the facility. Contingency measures shall include enclosing the West Water Recycle pit and treating the post 36 hour / emissions from the Phase 2/3 building via the ammonium scrubbers and biofilter.</p>		This condition related to previous IEA reporting period (2016).	Closed

Condition	Requirement	Interviews and Inspections	Documentation Viewed / Assessment Status	Compliance Status
4B	The approval updated Plan (as revised and approved by the Secretary from time to time), shall be implemented for the life of the Project as soon as written endorsement by the Secretary is received.	Refer to Section 4.4 of this report.		Compliant
Odour Emissions and Biofilter Control System Audit				

Condition	Requirement	Interviews and Inspections	Documentation Viewed / Assessment Status	Compliance Status
5	<p>The Proponent shall undertake an Odour Emissions and Biofilter Control System Audit to quantify the odour abatement efficiency of the odour emissions plant and assess the effectiveness of all other odour controls on the Substrate Plant site:</p> <p>(a) within six weeks of the commissioning of the biofilter;</p> <p>(b) within six weeks of the decommissioning of the bioscrubber;</p> <p>(c) prior to the commencement of each increase in production, in accordance with Conditions 7(2) and 7(3) of Schedule 2;</p> <p>(d) and as directed by the Secretary;</p> <p>(e) each audit required under (a) to (d) inclusive, shall:</p> <p>i. be undertaken and prepared by a suitably qualified, experienced and independent expert whose appointment has been endorsed by the Secretary;</p> <p>ii. be prepared in consultation with the EPA;</p> <p>iii. report on the results of the source emissions sampling and analysis undertaken in accordance with the Odour Management Plan (required by Condition 4A of Schedule 3) or as otherwise agreed to in writing by the EPA;</p> <p>iv. review the Proponent's production data (that are relevant to the audit) and complaints record;</p> <p>v. review any complaints received during the relevant period;</p> <p>vi. determine whether the Project is complying with condition 2 of Schedule 3; and, if necessary;</p> <p>vii. recommend whether any additional management works and/or management practices are required to ensure no offensive odours from the Substrate Plant site.</p>		<p>Documentation viewed:</p> <ul style="list-style-type: none"> Letter from Department of Planning dated 8 June 2018 approving auditors. Letter from Department of Planning dated 11 August 2018 approving two audit teams. SLR Consulting Australia Pty Ltd, Odour Emissions and Biofilter Control System Audit for Elf Farm Supplies, Reference No. 610.18411-R01-v3.0, dated 1 March 2019. <p>i) Compliance – SLR consultants were approved by Department of Planning and Environment. Refer to Appendix A.</p> <p>ii) Compliance – SLR consultants discussed the audit with relevant EPA officer and email sighted to the EPA officer confirming conversation and scope. Refer to Section 2.0.</p> <p>iii) Compliance – report contained monitoring results from on-site odour sampling as per the NSW Approved Methods. Refer to Sections 5 and 6.</p> <p>iv) Compliance – Section 8.</p> <p>v) Compliance – Section 7.</p> <p>vi) Compliance – Section 9.</p> <p>vii) Compliance – Section 10.</p>	Compliant

Condition	Requirement	Interviews and Inspections	Documentation Viewed / Assessment Status	Compliance Status
6	Within 2 weeks of this audit being completed, or in a timeframe as otherwise agreed by the Secretary, the Proponent shall submit a copy of the audit report to EPA and the Secretary together with an action plan demonstrating how the findings of the audit are to be implemented.		<p>Documents viewed:</p> <ul style="list-style-type: none"> Elf Farm Supplies Independent Odour Emissions and Biofilter Control System Audit, Reference No. 610.18411-R01-v3.0, dated 1 March 2019. Email dated 7 March 2019 from Terry Perram (Elf Farm Supplies rep) to the Department of Planning and Environment submitting Audit Report and Action Plan. Email dated 14 March 2019 from Terry Perram (Elf Farm Supplies rep) to waste.operations@epa.nsw.gov.au submitting Audit Report and Action Plan. 	Compliant
6A	Two months after the completion of the audits required under Conditions 5 (a) and 5(b) of Schedule 3, the Proponent shall submit to the satisfaction of the Secretary, a report verifying that any actions identified in the audit have been implemented.		This condition has not been triggered as at the time of this audit.	Not triggered
Dust				

Condition	Requirement	Interviews and Inspections	Documentation Viewed / Assessment Status	Compliance Status
7	The Proponent shall implement all reasonable and feasible measures to minimise dust generated at the Substrate Plant site.	Site inspections: dust levels were low during the site audits in September and October 2018 and January 2019.	Documentation viewed: <ul style="list-style-type: none"> • <i>Elf Farm Supplies Mushroom Substrate Facility – Annual Environmental Management Review, Mulgrave, NSW, Revision 1, November 22 2017</i>, prepared by Compaction and Soil Testing Services Pty Ltd on behalf of Elf Farm Supplies Pty Ltd. • <i>Elf Farm Supplies Mushroom Substrate Facility – Annual Environmental Management Review, Mulgrave, NSW, Revision 0, 28 September 2018</i>, prepared by Elf Farm Supplies Pty Ltd. • Elf Farm Supplies on-line complaints register. 	Compliant
8	During the construction and operation of the project, the Proponent shall ensure that: <ul style="list-style-type: none"> (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 Secretary 	Site inspection: dust levels were low during the site audits in September and October 2018 and January 2019. No visible dirt was sighted on the public road network entering Elf Farm Supplies.	Documents viewed: <ul style="list-style-type: none"> • <i>Elf Farm Supplies Mushroom Substrate Facility – Annual Environmental Management Review, Mulgrave, NSW, Revision 1, November 22 2017</i>, prepared by Compaction and Soil Testing Services Pty Ltd on behalf of Elf Farm Supplies Pty Ltd. Section 6, no dust complaints were recorded during reporting period. • <i>Elf Farm Supplies Mushroom Substrate Facility – Annual Environmental Management Review, Mulgrave, NSW, Revision 0, 28 September 2018</i>, prepared by Elf Farm Supplies Pty Ltd. Section 6, no dust complaints were recorded during reporting period. • Complaints Register – Elf Farm Supplies website. No dust complaints recorded during this reporting period. 	Compliant

Condition	Requirement	Interviews and Inspections	Documentation Viewed / Assessment Status	Compliance Status
Energy Efficiency Plan				
9	<p>The proponent shall prepare and implement an Energy Efficiency Plan on the Substrate Plant site to the satisfaction of the Secretary. This plan must:</p> <ul style="list-style-type: none"> (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 		<p>Note – the preparation and submission of the Energy Efficiency Plan was audited in the previous IEA (2016) and these elements are considered closed. This audit is focused on the implementation of the Plan.</p> <p>Documentation viewed:</p> <ul style="list-style-type: none"> • <i>Elf Farm Supplies Mushroom Substrate Facility – Annual Environmental Management Review, Mulgrave, NSW, Revision 1, November 22 2017.</i> Section 4.5 relates to energy efficiency monitoring analysis, while Section 5.3 is the energy data trend analysis section. • <i>Elf Farm Supplies Mushroom Substrate Facility – Annual Environmental Management Review, Mulgrave, NSW, Revision 0, 28 September 2018,</i> prepared by Elf Farm Supplies Pty Ltd. Section 4.5 relates to energy efficiency monitoring analysis and Section 5.3 is the energy data trend analysis. • <i>Mushroom Substrate Plant, Mulgrave, Environmental Management Strategy, Report 134R2, 16 January 2017, Version 01.2.</i> Section 5.5 outlines designs features and management procedures in place to maximise energy efficiency. <p>The Environmental Management Strategy (including the Energy Efficiency Plan) was reviewed in November 2016 and again in 16 January 2017 as per Section 8.2.2.</p>	Compliant

Condition	Requirement	Interviews and Inspections	Documentation Viewed / Assessment Status	Compliance Status
Fire Management				
10	<p>The proponent shall;</p> <ul style="list-style-type: none"> 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. 		<p>Documentation viewed:</p> <ul style="list-style-type: none"> • <i>Straw Fire Incident Report, FC2866-78.1 for Elf Farm Supplies, 108 Mulgrave Road Mulgrave NSW 2756, Fire Systems Review.</i> Prepared by FireCheck Pty Ltd, Greg Reberger G.IFire.E, January 2017. • Annual Fire Safety Statement dated 5 July 2017 issued by DEM Fire & Essential Services Group. • Fire Fighting Equipment Check Schedule Summary by Schedule and Type for 2017 • Environmental Property Services (EPS), August 2016, Pollution Incident Response Management Plan, prepared for Elf Farm Supplies, Reference No. 11131. Sections 4, 5.3, 5.4, 7.2 relate specifically to fire risks, management. Appendices 3, 13 and 14 all relate to fire management practices. • <i>Mushroom Substrate Plant, Mulgrave, Environmental Management Strategy, Report 134R2, Version 01.2, 16 January 2017.</i> Section 5.9.2 of the, outlines designs features and management procedures in place to minimise the risk of fire and refers to fire management strategy for the site. • <i>Elf Farm Supplies, Staged Development of Mushroom Substrate Plant, Construction Environmental Management Plan, Revision 1, July 2016, Section 7.3.3 of the Perram & Partners, refers to Pollution Incident Response Management Plan.</i> 	Compliant

Condition	Requirement	Interviews and Inspections	Documentation Viewed / Assessment Status	Compliance Status
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 and AS 3780-2008 The Storage and Handling of Corrosive Substances	Site inspection: 8 January 2019 – same findings as per 2016 IEA, SLR sighted a double skinned tank was used for the above ground diesel fuel storage near the weighbridge. The other two diesel fuel tanks were below ground. Each diesel fuel area had spill kits located adjacent.	<p>Documentation viewed:</p> <ul style="list-style-type: none"> <i>POL0002.05, Company Policy and Commitment, Use of Hazardous Substances Policy, Revision No: 0, Date 08.05.2015</i> <i>Elf Farm Supplies Pty Ltd, EFS.OHS.053, Workplace Substances Procedure, reviewed date: 17.11/2016</i> <i>Environmental Property Services (EPS), August 2016, Pollution Incident Response Management Plan, prepared for Elf Farm Supplies, Reference No. 11131. Section 6 – Inventory of Pollutants and Appendix 1 – Dangerous Goods Risk Management Register , Appendix 12, Safety Equipment Location Map.</i> Letter dated 24 June 2018 to Elf Farm Supplies from SafeWork NSW, Notification of Hazardous Chemicals on Premises. Relates to approval for the storage and handling of hazardous chemicals on site. 	Compliant
Waste				
12	The Proponent shall store, 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 of at the Substrate Plant site, except with the approval of the Secretary and as expressly permitted by a licence under the Protection of the Environment Operations Act 1997.	Interview: Administration Manager – confirmed that they only bring any waste generated outside the Plant site on site that is permitted under the Environment Protection Licence.	Not applicable.	Compliant

Condition	Requirement	Interviews and Inspections	Documentation Viewed / Assessment Status	Compliance Status
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 <i>Storage and handling liquids: Environmental Protection – Participant's Manual</i> .	Site inspection: 8 January 2019 – Sighted double skinned tank was used for the above ground diesel fuel storage. The other two diesel fuel tanks were below ground. Each diesel fuel area had spill kits located adjacent.	Documentation viewed: <ul style="list-style-type: none"> <i>Environmental Property Services (EPS), August 2016, Pollution Incident Response Management Plan, prepared for Elf Farm Supplies, Reference No. 11131. Section 5.5 Chemical Spill Procedure, Appendix 5 – Chemical Spill Procedure. Appendix 12, Safety Equipment Location Map.</i> <i>POL0002.05, Company Policy and Commitment, Use of Hazardous Substances Policy, Revision No: 0, Date 08.05.2015</i> <i>Elf Farm Supplies Pty Ltd, EFS.OHS.053, Workplace Substances Procedure, reviewed date: 17.11/2016</i> 	Compliant
Soil and Waster - Discharge Limits				
14	Except as may be expressed provided by an EPL for the Substrate Plant site, the Proponent must comply with Section 120 of the POEO Act.	Administration Manager – no incidents that could cause environmental harm associated with the pollution of waters associated with MOD 1.	Section 120 of the POEO states: A person who pollutes any waters is guilty of an offence. Documentation viewed: <ul style="list-style-type: none"> EPA website – no water pollution penalty notices issued during this IEA period. <i>Elf Farm Supplies Mushroom Substrate Facility – Annual Environmental Management Review, Mulgrave, NSW, Revision 1, November 22 2017. No water pollution incidents reported.</i> <i>Elf Farm Supplies Mushroom Substrate Facility – Annual Environmental Management Review, Mulgrave, NSW, Revision 0, 28 September 2018, prepared by Elf Farm Supplies Pty Ltd. No water pollution incidents reported.</i> 	Compliant

Condition	Requirement	Interviews and Inspections	Documentation Viewed / Assessment Status	Compliance Status
15	The Proponent shall ensure that only VENM and/or ENM or material approved by the EPA is used as a fill.		<p>Documentation viewed:</p> <ul style="list-style-type: none"> Supplementary Report to Elf Farm Supplies on Compaction Report for Biofilter Imported Fill Material at 108 Mulgrave Road, Mulgrave NSW, dated 11 May 2016, prepared by Compaction & Soil Testing Services Pty Limited. Section 2 states that processed product described as recycled screened soil was used as the fill material for the biofilter area. Section 3.1 states that Hawkesbury Council granted approval for the use of this material within the project. Elf Farm Supplies, Staged Development of Mushroom Substrate Plant, Construction Environmental Management Plan, Revision 1, July 2016 Perram & Partners, Section 2.2.3 states “that where further fill material is required, it will continue to be sourced from construction projects in the Sydney Region that have surplus excavated material at the time filling is underway. Imported fill is excavated natural material certified to be free from contamination.” 	Compliant
16	The Proponent shall ensure that filling of the manoeuvring area shall be undertaken in accordance with plans submitted with DA 0571/06.		This condition related to previous IEA reporting period (2016).	Closed
16A	The Proponent shall ensure that the earthworks associated with the biofilter pad do not act as a source of sedimentation. The Proponent shall stabilise the area of fill associated with the biofilter within one week of the approval of MOD 1.		This condition related to previous IEA reporting period (2016).	Closed

Condition	Requirement	Interviews and Inspections	Documentation Viewed / Assessment Status	Compliance Status
16B	<p>Prior to the commencement of construction of the biofilter, the Proponent shall submit to the Secretary, details demonstrating that the earthworks in the area of the biofilter have been:</p> <p>(a) undertaken in accordance with AS 3798; and</p> <p>(b) compacted to 98% Standard dry density ratio (AS1289 E4.1).</p>		This condition related to previous IEA reporting period (2016).	Closed
Soil and Water – Water Management Plan				

Condition	Requirement	Interviews and Inspections	Documentation Viewed / Assessment Status	Compliance Status
17	The Proponent shall 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.		<p>Note: the preparation and submission aspects of this condition relate to previous IEA reporting period (2016). The only aspect to be audited is the implementation.</p> <p>Documentation viewed</p> <ul style="list-style-type: none"> • <i>Elf Farm Supplies Mushroom Substrate Plant, Mulgrave, Water Management Plan</i>, Issue 02 prepared by Perram & Partners May 2018. • Farm Dam Pump Register forms, EPA Notification Date – 22/3/2018, 1/3/2018, 3/8/2017, 22/6/2017, 13/7/2017, 19/6/2017, 7/6/2017, 22/5/2017, 27/4/2017, 13/4/2017, 6/4/2017, 21/3/2017, 16/3/2017, 27/2/2017, 20/2/2017, 3/2/2017 and 6/1/2017 • Emails to EPA on 22/3/2018, 1/3/2018, 3/8/2017, 22/6/2017, 13/7/2017, 19/6/2017, 7/6/2017, 22/5/2017, 27/4/2017, 13/4/2017, 6/4/2017, 21/3/2017, 16/3/2017, 27/2/2017, 20/2/2017, 3/2/2017 and 6/1/2017 advising of their plans to irrigate as per EPL condition. <p>Elf is managing the water levels in the dam as per the WMP. Elf is notifying the EPA as per EPL condition of their plans to irrigate.</p>	Compliant

Condition	Requirement	Interviews and Inspections	Documentation Viewed / Assessment Status	Compliance Status
17A	<p>The Proponent shall prepare an updated Water Management Plan for the Substrate Plant site required by Condition 17 of Schedule 3 to include the works associated with MOD 1. The plan shall be submitted to the Secretary for approval prior to the commencement of operation of MOD 1.</p> <p>Operation of works associated with MOD 1 shall not commence until the Proponent has received written approval of the plan. The approved Plan shall be implemented for the life of the Project.</p>		<p>Documentation viewed:</p> <ul style="list-style-type: none"> Email dated 11 October 2018 from Elf to Department of Planning advising the commencement of operation for MOD1 was 1 July 2018. <i>Elf Farm Supplies Mushroom Substrate Plant, Mulgrave, Water Management Plan, Issue 02</i> prepared by Perram & Partners September 2017. Email from Planning dated 20 September 2017 requesting a number of revisions to the updated Water Management Plan that was submitted on Thursday 14 September 2017. <i>Elf Farm Supplies Mushroom Substrate Plant, Mulgrave, Water Management Plan, Issue 02</i> prepared by Perram & Partners May 2018. Email from Perram & Partners (Elf Farm rep) to Planning dated 19 May 2018 submitting the updated Water Management Plan. Email from Planning to Perram & Partners acknowledging receipt of the updated Water Management Plan on 21 May 2018. <p>Documented as an administrative non-compliance as no approval of the plan has been received and MOD1 is operational.</p> <p>Planning advised Perram & Partners (Elf rep) verbally that the document would not be approved at this stage and we should update it after MOD3 is dealt with to include the revised stormwater system and then re-submit. (Email from Perram & Partners to Elf dated 14 March 2019). No action required by Elf.</p>	Administrative non-compliance

Condition	Requirement	Interviews and Inspections	Documentation Viewed / Assessment Status	Compliance Status
17B	<p>The Proponent shall ensure that the western dam at the Substrate Plant site (identified on the plan in Appendix 2 of this approval) does not receive process water.</p> <p>Notes: The dam may receive water from direct rainfall, area runoff and groundwater and during times of emergency.</p>		<p>Documentation viewed</p> <ul style="list-style-type: none"> • <i>Elf Farm Supplies Mushroom Substrate Plant, Mulgrave, Water Management Plan</i>, Issue 02 prepared by Perram & Partners May 2018. • Email from Elf to EPA dated 3 August 2017 notifying that because of a small plant failure (burst water pipe) and Monday's rain, some water has gone into the dam and they will be irrigating as soon as conditions allow us. • Letter from Department of Planning, dated 21 August 2017 relating to Schedule 3, Condition 17C. Department confirmed that high rainfall events are deemed a time of emergency for this condition. 	Compliant

Condition	Requirement	Interviews and Inspections	Documentation Viewed / Assessment Status	Compliance Status
17C	Notwithstanding Condition 17B of Schedule 3, in the event of an emergency such as a high rainfall event or plant breakdown, the Proponent may use the western dam. Notification of any emergency use of the dam shall be provided to the Secretary in writing within 7 days of the emergency.		<p>Documentation viewed</p> <ul style="list-style-type: none"> • <i>Elf Farm Supplies Mushroom Substrate Plant, Mulgrave, Water Management Plan, Issue 02</i> prepared by Perram & Partners May 2018. • Letter from Department of Planning, dated 21 August 2017, advising that the department has formed the view that Elf has been non-compliant with Schedule 3, Condition 17C of the approval. <i>The Department acknowledges that Elf has been providing notification, as required by Condition 17C, in the event of plant breakdown. However, notification has not been provided when the dam has been used in the event of high rainfall. The Department believes that this non-compliance has occurred because of a genuine misunderstanding of the condition and the definition of an emergency.</i> • Email from Elf to EPA dated 3 August 2017 notifying that because of a small plant failure (burst water pipe) and Monday's rain, some water has gone into the dam and they will be irrigating as soon as conditions allow us. 	Non-compliant

Condition	Requirement	Interviews and Inspections	Documentation Viewed / Assessment Status	Compliance Status												
Noise – Construction Noise Criteria																
18	<p>The Proponent shall ensure that the construction noise generated at the Substrate Plant site does not exceed the criteria in Table 1</p> <p>Table 1: Construction Noise impact assessment criteria dB A</p> <table><tr><th>Receiver/Location</th><th>Day LAeq(15 minute)</th></tr><tr><td>R1 - 46 Mulgrave Road, Mulgrave</td><td>52</td></tr><tr><td>R2- Mulgrave Industrial area</td><td>65</td></tr><tr><td>R3 - 2 Railway Road, Mulgrave</td><td>52</td></tr><tr><td>R4- 126 Mulgrave Road, Mulgrave</td><td>52</td></tr><tr><td>R5- Chisholm Place, South Windsor</td><td>51</td></tr></table> <p>Notes:</p> <p>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.</p>	Receiver/Location	Day LAeq(15 minute)	R1 - 46 Mulgrave Road, Mulgrave	52	R2- Mulgrave Industrial area	65	R3 - 2 Railway Road, Mulgrave	52	R4- 126 Mulgrave Road, Mulgrave	52	R5- Chisholm Place, South Windsor	51		<p>Documentation viewed:</p> <ul style="list-style-type: none">Acoustic Consulting Engineers Pty Ltd reports for monitoring undertaken on 26 May 2017 (Ref 160787-03-04L-CF), 16 October 2017 (160787-03-05L-CF). Compliance with the construction noise limits was achieved in both monitoring events.Email from Elf to the Department of Planning dated 11 October 2018 advising that Elf commenced installing, connecting and testing of services, plant and equipment in February 2018.	Compliant
Receiver/Location	Day LAeq(15 minute)															
R1 - 46 Mulgrave Road, Mulgrave	52															
R2- Mulgrave Industrial area	65															
R3 - 2 Railway Road, Mulgrave	52															
R4- 126 Mulgrave Road, Mulgrave	52															
R5- Chisholm Place, South Windsor	51															

Condition	Requirement	Interviews and Inspections	Documentation Viewed / Assessment Status	Compliance Status																		
Noise – Operational Noise Criteria																						
19	<p>The Proponent shall ensure that the operational noise generated by the Substrate Plant site does not exceed the criteria in Table 2</p> <p>Table 2: Operational Noise impact assessment criteria dB(A)</p> <table><tr><th>Receiver/Location</th><th>Day LAeq(15 minute)</th><th>Night LAeq(15 minute)</th></tr><tr><td>R1 - 46 Mulgrave Road, Mulgrave</td><td>43</td><td>43</td></tr><tr><td>R2- Mulgrave Industrial area</td><td>42</td><td>37</td></tr><tr><td>R3 - 2 Railway Road, Mulgrave</td><td>44</td><td>41</td></tr><tr><td>R4- 126 Mulgrave Road, Mulgrave</td><td>44</td><td>42</td></tr><tr><td>R5- Chisholm Place, South Windsor</td><td></td><td></td></tr></table> <p>Notes:</p> <p>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</p>	Receiver/Location	Day LAeq(15 minute)	Night LAeq(15 minute)	R1 - 46 Mulgrave Road, Mulgrave	43	43	R2- Mulgrave Industrial area	42	37	R3 - 2 Railway Road, Mulgrave	44	41	R4- 126 Mulgrave Road, Mulgrave	44	42	R5- Chisholm Place, South Windsor			<p>Interview: Administration Manager advised that commissioning activities were completed at the end of October 2018.</p>	<p>Documentation viewed:</p> <ul style="list-style-type: none">Email from Elf dated 11 October 2018 to the Department of Planning advising that the work under MOD1 was complete by 30 June 2018 and plant was operational since 1 July 2018. The email also stated that commissioning of the plant is continuing as they bring new plant online and tune the exhaust system.Acoustic Consulting Engineers, Substrate Plant Mulgrave, Operational Noise Management Plan, Report No. 1607870-01-02R-DD, date 26 June 2018. <p>Section 3 states:</p> <p>Section 6.1 states that <i>“The Atkins Acoustics report recommends that within six months of completion of each stage of the proposed upgrade of the substrate plant, noise monitoring to be conducted at two reference locationsWhere practical, nearfield measurements of fixed and mobile plant and equipment would also be conducted within six months of completion of each stage of the proposed To ensure compliance with the noise levels presented in Table 3”</i></p> <p>Status: the 6 monthly testing is required to be completed by end of April 2019.</p>	Not triggered
Receiver/Location	Day LAeq(15 minute)	Night LAeq(15 minute)																				
R1 - 46 Mulgrave Road, Mulgrave	43	43																				
R2- Mulgrave Industrial area	42	37																				
R3 - 2 Railway Road, Mulgrave	44	41																				
R4- 126 Mulgrave Road, Mulgrave	44	42																				
R5- Chisholm Place, South Windsor																						

Condition	Requirement	Interviews and Inspections	Documentation Viewed / Assessment Status	Compliance Status															
Noise – Hours of Work																			
20	<p>The Proponent shall comply with the operating hours in Table 3 at the Substrate Plant site, unless otherwise agreed to in writing by the Secretary.</p> <p>Table 3: Operating hours</p> <table><tr><th>Activity</th><th>Day</th><th>Time</th></tr><tr><td rowspan="4">Construction</td><td>Monday – Friday</td><td>7.00am – 6.00pm</td></tr><tr><td>Saturday</td><td>8.00am – 1.00pm</td></tr><tr><td>Sunday and Public Holidays</td><td>Nil</td></tr><tr><td>All days</td><td>Anytime</td></tr><tr><td>Operation</td><td></td><td></td></tr></table>	Activity	Day	Time	Construction	Monday – Friday	7.00am – 6.00pm	Saturday	8.00am – 1.00pm	Sunday and Public Holidays	Nil	All days	Anytime	Operation				<p>Documentation viewed:</p> <ul style="list-style-type: none">Elf Farm Supplies Mushroom Substrate Facility – Annual Environmental Management Review, Mulgrave, NSW, Revision 1, November 22 2017, prepared by Compaction and Soil Testing Services Pty Ltd on behalf of Elf Farm Supplies Pty Ltd.Elf Farm Supplies Mushroom Substrate Facility – Annual Environmental Management Review, Mulgrave, NSW, Revision 0, 28 September 2018, prepared by Elf Farm Supplies Pty Ltd. <p>Three non-compliances with construction hours identified. Complaint No. 182 (21 July 2017 at 6.30pm) and Complain No. 183 (29 August 2017 at 7pm).</p>	Non-compliant
Activity	Day	Time																	
Construction	Monday – Friday	7.00am – 6.00pm																	
	Saturday	8.00am – 1.00pm																	
	Sunday and Public Holidays	Nil																	
	All days	Anytime																	
Operation																			
Noise – Additional Noise Mitigation Measures																			
21	<p>The Proponent shall construct the 7 m high noise wall adjacent to the southern side of the bale storage shed or implement 'other noise mitigation measures' with the same or greater effect, prior to commencement of Stage 2B construction works.</p> <p>Should 'other noise mitigation measures' be implemented, the Proponent shall demonstrate, to the satisfaction of the Secretary, that the chosen measures will be as effective as modelled for the noise wall. Construction of Stage 2B cannot commence unless the Proponent has received the Secretary's approval for the 'other noise mitigation measures'.</p>		<p>This condition related to previous IEA reporting period (2016).</p>	Closed															

Condition	Requirement	Interviews and Inspections	Documentation Viewed / Assessment Status	Compliance Status
Noise – Noise Management Plan				
22	The Proponent shall 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		This condition related to previous IEA reporting period (2016).	Closed
22A	The Proponent shall update the Noise Management Plan for the Substrate Plant site, to the satisfaction of the Secretary. This plan is to update the plan approved under Condition 22 of Schedule 3 and shall include: (a) the works associated with MOD 1; and (b) a revised monitoring protocol for evaluating compliance with the noise impact assessment criteria in this approval once all construction works associated with MOD 1 are complete.		Documentation viewed: <ul style="list-style-type: none"> Acoustic Consulting Engineers, Substrate Plant Mulgrave, Operational Noise Management Plan, Report No. 1607870-01-02R-DD, date 26 June 2018. 	Compliant
22B	Operation of works associated with MOD 1 shall not commence until the Proponent has received the Secretary's written approval of the plan. The approved Plan (as revised and approved by the Secretary from time to time), shall be implemented for the life of the Project as soon as written endorsement by the Secretary is received.	Interview: WHS Manager advised that as of December 2018, the Department has yet to review the updated Operational Noise Management Plan and hence approve it.	Documentation viewed: <ul style="list-style-type: none"> Acoustic Consulting Engineers, Substrate Plant Mulgrave, Operational Noise Management Plan, Report No. 1607870-01-02R-DD, date 26 June 2018. Acoustic Consulting Engineers, Substrate Plant Mulgrave, Operational Noise Management Plan, Report No. 1607870-01-02R-DD, date 17 January 2019. Letter dated 4 February 2019 from the Department of Planning and Environment approving the Operational NMP dated 17 January 2019, rev 02. Non-compliance as approval was not granted prior to MOD1 operations commencing on 1 July 2018.	Administrative non-compliance

Condition	Requirement	Interviews and Inspections	Documentation Viewed / Assessment Status	Compliance Status
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 practice techniques are used at the site, to the satisfaction of the Secretary.	Interview: WHS Manager and Administration Manager advised that the MOD3 is still under consideration by the Department of Planning.	<p>This condition relates to the previous IEA reporting period (2016). In 2016 non-compliance was recorded against this condition.</p> <p>Documentation viewed:</p> <ul style="list-style-type: none"> Letter from Perram & Partners to Planning dated 18 January 2017 seeking modification to the development including deleting condition 23. <p>Documented as on-going non-compliance as no response has been provided by Planning on the MOD3 application. No action required by Elf.</p>	Non-compliant
Visual Amenity – Lighting				
24	<p>The Proponent shall ensure that all external lighting associated with the Substrate Plant site:</p> <ul style="list-style-type: none"> c) Does not create nuisance to surrounding properties or roadways and d) Complies with AS4282 (INT) 1995 – Control of Obtrusive Effects of Outdoor Lighting. 		<p>Documentation viewed:</p> <ul style="list-style-type: none"> <i>Elf Farm Supplies Mushroom Substrate Facility – Annual Environmental Management Review, Mulgrave, NSW, Revision 1, November 22 2017</i>, prepared by Compaction and Soil Testing Services Pty Ltd on behalf of Elf Farm Supplies Pty Ltd. Section 3 specifies two lighting complaints being received on 25/7/17 and 29/8/2017. <i>Elf Farm Supplies Mushroom Substrate Facility – Annual Environmental Management Review, Mulgrave, NSW, Revision 0, 28 September 2018</i>, prepared by Elf Farm Supplies Pty Ltd. Figure 1 Complaints Chart, one light complaint was received in September 2017. <p>Note the Auditor is not familiar with AS4282 and has not conducted an audit against this standard as part of this audit.</p>	Non-compliant

Condition	Requirement	Interviews and Inspections	Documentation Viewed / Assessment Status	Compliance Status
24A	The Proponent shall prepare a Landscape Management Plan for the Substrate Plant site. The plan shall: (a) be prepared in consultation with Council; (b) identify screen planting to minimise visual impacts of the site, particularly the new biofilter; and (c) be approved by the Secretary prior to the commencement of construction of the works associated with MOD 1.		This condition related to the previous IEA reporting period (2016).	Closed
24B	The landscaping around the site of the new biofilter required under MOD 1 shall be installed within three months following the completion of the construction of the biofilter. All other landscaping shall be installed prior to the commencement of operation of the works associated with MOD 1.		This condition was met during the previous IEA reporting period (2016).	Closed
Signage				
25	The Proponent shall not install any advertising signs on the Substrate Plant site without the written approval of the Secretary.	Interview: January 2018 - WHS Manager – no advertising signs have been erected on the property.	Not applicable.	Not triggered
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	Site inspections in September and October 2017 and January 2018: no queueing was sighted during the site visits and no parking on public roads was occurring.	Documentation viewed: <ul style="list-style-type: none"> <i>Letter from Commercial Design Consolidated (NSW) Pty Limited, dated 12 January 2017 states in the conclusion section "The designs and details as presented on the documents supplied appear satisfactory and comply with the requirements of the relevant codes."</i> 	Compliant

SCHEDULE 5 – ENVIRONMENTAL MANAGEMENT AND REPORTING CONDITIONS

Table 21 Environmental Management and Reporting Conditions

Condition	Requirement	Interviews and Inspections	Documentation Viewed / Assessment Status	Compliance Status
Environmental Management Strategy				
1	<p>The Proponent shall prepare and implement an Environmental Management Strategy for the Project to the satisfaction of the Secretary. The Strategy must:</p> <ol style="list-style-type: none"> Be submitted to the Secretary for approval prior to the commencement of operation; Provide the strategic framework for environmental management of the Project; Identify the statutory approvals that apply to the Project; Describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the Project Describe the procedures that would be implemented to: <ul style="list-style-type: none"> 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. Include <ul style="list-style-type: none"> 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. 	<p>Inspection: The following elements of the Environmental Management Strategy were sighted during the January 2019 inspection of the facility:</p> <ul style="list-style-type: none"> Training of employees Odour controls Dust controls Chemical handling – spill kits, dangerous good register Water management – western dam, water recycling pit operations 	<p>Documentation viewed:</p> <ul style="list-style-type: none"> <i>Elf Farm Supplies Pty Ltd, Mushroom Substrate Plant, Mulgrave, Environmental Management Strategy, Report 134R2, 16 January 2017. Perram & Partners.</i> <p>The Strategy is not compliant with c) as Section 8.2.1 refers to three yearly performance review reports when that Condition 5 of Schedule 5 has been modified to annual reports. It should be noted that Elf is complying with the Condition 5 of Schedule 5 and preparing and submitting annual management performance reports.</p> <p>There are many sections of the Strategy that require updating to reflect MOD1 completion. For example but not limited to Sections 2.3, 4.2, 4.3, 5.2.2, 5.3, 7.2, 7.3, 8.1.3, 8.2 and 8.3. Figures 2 and 3 and the Appendices all contain many out of date documents, for example the EPL. Many of the Plans in the appendices are being used but have not been included in the Strategy.</p> <p>This is considered an administrative non-compliance as not having the Strategy up-to-date has not resulted as yet in an environmental incidents.</p>	Non-compliant

Condition	Requirement	Interviews and Inspections	Documentation Viewed / Assessment Status	Compliance Status
Management Plan Requirements				
2	<p>The Proponent shall ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines, and include:</p> <p>a) detailed baseline data;</p> <p>b) a description of:</p> <ul style="list-style-type: none"> 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; <p>(c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria</p> <p>(d) a program to monitor and report on the:</p> <ul style="list-style-type: none"> impacts and environmental performance of the Project; effectiveness of any management measures (see c above); <p>e) a contingency plan to manage any unpredicted impacts and their consequences;</p> <p>f) a program to investigate and implement ways to improve the environmental performance of the Project over time;</p> <p>g) a protocol for managing and reporting any:</p> <ul style="list-style-type: none"> incidents; complaints; non-compliances with statutory requirements; and exceedances of the relevant limits and/or performance measures/criteria; and <p>h) a protocol for periodic review of the plan</p>		<p>In the previous IEA report the following original management plans were prepared and approved:</p> <ul style="list-style-type: none"> Odour Management Plan Operational Noise Management Plan Construction EMP Energy Management Plan Water Management Plan <p>For this reporting period the following plans were required to be updated:</p> <ul style="list-style-type: none"> Odour Management Plan Operational Noise Management Plan Water Management Plan <p>Documentation viewed:</p> <ul style="list-style-type: none"> <i>Odour Management Plan, Elf Farm Supplies Substrate Facility</i>, Prepared by Todoroski Air Sciences, 8 February 2018, Job Number 16100614. Letter from Department of Planning dated 15 February 2018 approving the Odour Management Plan dated 8 February 2018. <i>Substrate Plant Mulgrave Operational Noise Management Plan</i>, date 26 June 2018, prepared by Acoustic Consulting Engineers. This updated plan was not required to be approved. Letter from Planning dated 4 February 2019 approving the Operational Noise Management Plan. <i>Elf Farm Supplies Mushroom Substrate Plant, Mulgrave, Water Management Plan</i> Issue 02, May 2018, Perram & Partners 	Compliant

Condition	Requirement	Interviews and Inspections	Documentation Viewed / Assessment Status	Compliance Status
Review				
3	<p>By the end of September 2016, and annually thereafter, unless otherwise agreed by the Secretary, the Proponent shall review the environmental performance of the Project to the satisfaction of the Secretary. This review must:</p> <p>(a) describe the operations that were carried out during the reporting period;</p> <p>(b) analyse the monitoring results and complaints records of the Project during the reporting period, which includes a comparison of these results against the:</p> <p>i. relevant statutory requirements, limits or performance measures/ criteria;</p> <p>ii. monitoring results of previous years; and</p> <p>iii. relevant predictions in the EA;</p> <p>(c) identify any non-compliance during the reporting period, and describe what actions were (or are being) taken to ensure compliance;</p> <p>(d) identify any trends in the monitoring data over the life of the Project; and</p> <p>(e) describe what measure(s) will be implemented during the next reporting period to improve the environmental performance of the Project.</p>		<p>Documentation viewed:</p> <ul style="list-style-type: none"> <i>Elf Farm Supplies Mushroom Substrate Facility – Annual Environmental Management Review, Mulgrave, NSW, Revision 1, November 22 2017, prepared by Compaction and Soil Testing Services Pty Ltd on behalf of Elf Farm Supplies Pty Ltd. Section 3 specifies two lighting complaints being received on 25/7/17 and 29/8/2017.</i> <i>Elf Farm Supplies Mushroom Substrate Facility – Annual Environmental Management Review, Mulgrave, NSW, Revision 0, 28 September 2018, prepared by Elf Farm Supplies Pty Ltd. Figure 1 Complaints Chart, one light complaint was received in September 2017.</i> <p>Elf has improved the AEMRs to comply with this Condition.</p> <p>(a) Compliance – Section 2</p> <p>(b) Compliance – Sections 4, 6 and 9</p> <p>(c) Compliance – Sections 3, 7 and 8</p> <p>(d) Compliance – Section 5</p> <p>(e) Compliance – Section 12</p>	Compliant
Independent Environmental Audit				

Condition	Requirement	Interviews and Inspections	Documentation Viewed / Assessment Status	Compliance Status
3A	<p>Within six months of the approval of MOD 1, and every two years thereafter, unless otherwise agreed by the Secretary, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the Project. This audit must:</p> <p>(a) be conducted by suitably qualified, experienced and independent team of experts (including an odour expert), whose appointment has been endorsed by the Secretary;</p> <p>(b) include consultation with the relevant agencies;</p> <p>(c) include a full odour audit of the Project, taking into consideration the relevant technical guidelines and any odour complaints made since the previous audit;</p> <p>(d) assess the environmental performance of the project and assess whether it is complying with the relevant requirements in this approval and any other licenses and approvals that apply to the project, (including any assessment, plan or program required under these approvals) ;</p> <p>(e) review the adequacy of strategies, plans or programs required under these approvals; and, if appropriate;</p> <p>(f) recommend measures or actions to improve the environmental performance of the project, and/or any assessment, plan or program required under these approvals.</p> <p>Within six weeks of the completing of this audit, or as otherwise agreed by the Secretary, the Proponent shall submit a copy of the audit report to the Secretary , together with its response to any recommendations contained in the audit report.</p>		<p>Documentation viewed:</p> <ul style="list-style-type: none"> 610.18204-ELF IEA v1.0 20180802 – Offer of Services sighted from SLR Consulting Australia Pty Ltd dated 2 August 2018. Offer related to Schedule 5, Condition 3A. Sighted Elf Farm Supplies Pty Limited, Order Form dated 2/8/18, C24620. Signed by Garry Faint. This report: <ul style="list-style-type: none"> (a) Compliant - Letter dated 1 August 2018 from Planning to Elf Farm Supplies endorsing Ms Loneragan and Ms Lawrence as independent environmental auditors. (b) Compliant – refer to Section 3.1 of this report. (c) Compliant - refer to Section 4 of this report. (d) Compliant – this report 5 of this report. (e) Compliant – refer to Section 5 of this report. (f) Compliant – refer to Section 5 and 6 of this report. 	Compliant

Condition	Requirement	Interviews and Inspections	Documentation Viewed / Assessment Status	Compliance Status
Revision of Plans and Programs				
4	<p>Within three months of the submission of an:</p> <p>(a) incident report under condition 5 of schedule 5;</p> <p>(b) review under condition 3 of schedule 5, and</p> <p>(c) audit under condition 3A of Schedule 5,</p> <p>the Proponent shall review, and if necessary revise the plans and programs required under this approval to the satisfaction of the Secretary.</p> <p>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.</p>		<p>Documentation viewed:</p> <ul style="list-style-type: none"> EPA website – there were no penalty notices issued during this reporting period. <i>Elf Farm Supplies Pty Ltd, Mushroom Substrate Plant, Mulgrave, Environmental Management Strategy, Report 134R2, 16 January 2017. Perram & Partners.</i> <p>The Strategy was updated after the completion of the 2016 IEA.</p>	Compliant
Incident				
5	<p>The Proponent shall notify the Secretary 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 Secretary and any relevant agencies with a detailed report on the incident.</p>	<p>Interview: Administration Manager confirmed no incidents during this reporting period.</p>	<p>Documentation viewed:</p> <ul style="list-style-type: none"> EPA website – there were no penalty notices issued during this reporting period. <i>Elf Farm Supplies Mushroom Substrate Facility – Annual Environmental Management Review, Mulgrave, NSW, Revision 1, November 22 2017.</i> <i>Elf Farm Supplies Mushroom Substrate Facility – Annual Environmental Management Review, Mulgrave, NSW, Revision 0, 28 September 2018, prepared by Elf Farm Supplies Pty Ltd.</i> 	Not triggered
Access to Information				

Condition	Requirement	Interviews and Inspections	Documentation Viewed / Assessment Status	Compliance Status
6	<p>The Proponent shall prepare a Community Consultation Strategy for the Substrate Plant site to address existing and future operations at the Substrate Plant site, including construction of works associated with MOD 1. This Plan shall:</p> <p>(a) be submitted to the satisfaction of the Secretary within one month from the approval of MOD 1;</p> <p>(b) include procedures for updating the community on the general operation of the site as well as the progress of any construction works; including</p> <p>i. a newsletter for the local community which details the</p> <ul style="list-style-type: none"> • construction activities and the expected duration of works; • a general summary of the environmental management to be implemented ; and • telephone number for taking complaints or enquiries in relation to the activities; <p>ii. the website required by Condition 7 of Schedule 5; and</p> <p>iii. public meetings;</p> <p>(c) describe the distribution area for the newsletter (at a minimum all residents within 2 km from the site boundary), prepared in consultation with Council; and</p> <p>(d) include procedures for handling and monitoring all complaints received; and detail what management and/or contingency actions will be taken if complaints are received</p>		This condition related to the previous IEA period (2016).	Closed

Condition	Requirement	Interviews and Inspections	Documentation Viewed / Assessment Status	Compliance Status
7	The approved Strategy (as revised and approved by the Secretary from time to time), shall be implemented for the life of the Project as soon as written endorsement by the Secretary is received		<p>Documentation viewed:</p> <ul style="list-style-type: none"> <i>Community Consultation Strategy Elf Farm Supplies</i>, 17 May 2016, Revision 1, prepared by Straight Talk. <p>Section 6.2.2 – Quarterly newsletters – compliant from 1 January 2017 to March 2018. Non-compliant for June 2018. No newsletter was available on website advising completion of construction.</p> <p>Section 6.2.3 Media release issued on completion of the construction works. This has not been completed.</p> <p>Section 6.2.4 – Public Information sessions were to be held quarterly – compliance - 20 May 2017, 19 August 2017, 18 November 2017, 17 February 2018 and 19 May 2018 in the Tebbutt Room at the Hawkesbury Central Library.</p> <p>Sighted:</p> <ul style="list-style-type: none"> Memo from RPS group specifying dates throughout 2016 (July, August, November and December), 2017 (January, February, May, June, August, November and December) and 2018 (February and May). Copies of all the ads placed as outlined above. All the same ad titled Elf Farm Supplies – community information and contained: Elf website details, public information sessions, complaints line (as per Section 6.2.3) <p>Reviewed Elf website and sighted online complaints form under Contact Us, as per Section 6.2.5 of the Community Consultation Strategy.</p>	Non-compliant

Condition	Requirement	Interviews and Inspections	Documentation Viewed / Assessment Status	Compliance Status
8	<p>Within three months from the date of the approval of MOD 1, the Proponent shall make the following information (unless commercially sensitive) freely available on a publicly accessible website, as it is progressively required under the approval :</p> <p>(a) all current statutory approvals, including this approval and any modifications to it;</p> <p>(b) plans and programs required under this approval;</p> <p>(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;</p> <p>(d) a complaints register, which is to be updated on a monthly basis;</p> <p>(e) a copy of any review as required under Condition 3 of Schedule 5 (over the last five years);</p> <p>(f) updates on the progress of the construction works associated with MOD 1; and</p> <p>(g) any other material as required by the Secretary</p>		<p>Note: having website up and running within 3 months of approval was part of the previous IEA (2016).</p> <p>In relation to progressively maintaining the site</p> <p>a) Compliance – sighted current approvals on the website (link to Planning website);</p> <p>b) Non-compliance – sighted Construction EMP, however Environmental Management Strategy was sighted main strategy compliance (Jan 17), however the appendices had not been updated and dated May 2012.</p> <p>Update Odour Management Plan, Water Management Plan and Operational Noise Management Plan were all missing.</p> <p>c) Compliance – odour and noise monitoring reports were available under Environmental Reports on the website;</p> <p>d) Compliance – Complaints Register located under Environmental Reporting and was last updated on 14 November 2016;</p> <p>e) Compliance – AEMRs for 2016, 2017 and 2018 have been uploaded to the website.</p> <p>f) Non-compliance – updates provided on a regular basis on website up until March 2018. Construction works were completed in June 2018, but no update provided.</p>	Administrative non-complaint

APPENDIX B

Photographs from Site Inspections

Photo 1 **New Plant – Construction Completed – Shows Ductwork for Transferring Process Air to the Odour Control System**



Photo 2 **New Plant**



Photo 3 **New Plant – Construction Completed**



Photo 4 **Ammonia Scrubbers**



Photo 5 **Enclosed Wastewater Pit**



Photo 6 **Emergency Shower and Drainage to Capture Spills from Unloading**



Photo 7 New Plant



Photo 8 Landscaping and Irrigation Area



Photo 9 Biofilter



Photo 10 Dust Minimisation Management Practice



Photo 11 Underground Storage Tank Signage



Photo 12 Emergency Spill Kit



Photo 13 Bale Storage



Photo 14 Diesel Fuel Storage – Double Skin



Photo 15 Example of Monitoring System – PLC

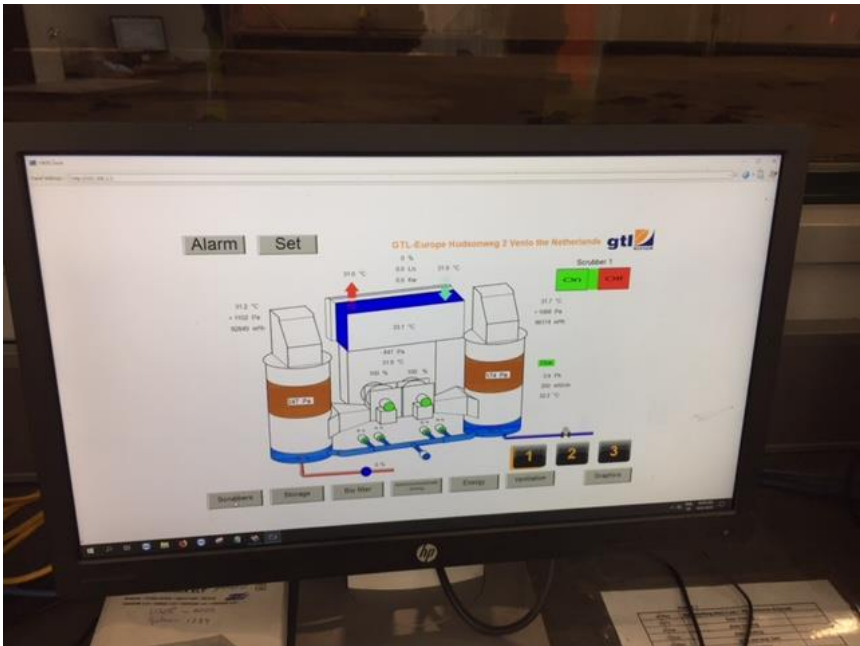


Photo 16 Example of Monitoring System

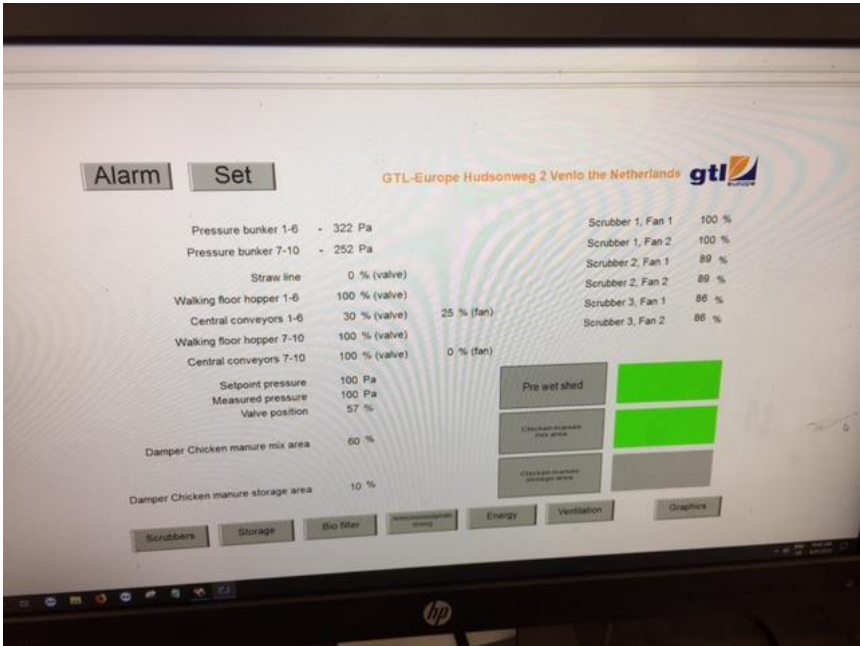


Photo 17 Examples of PLC System

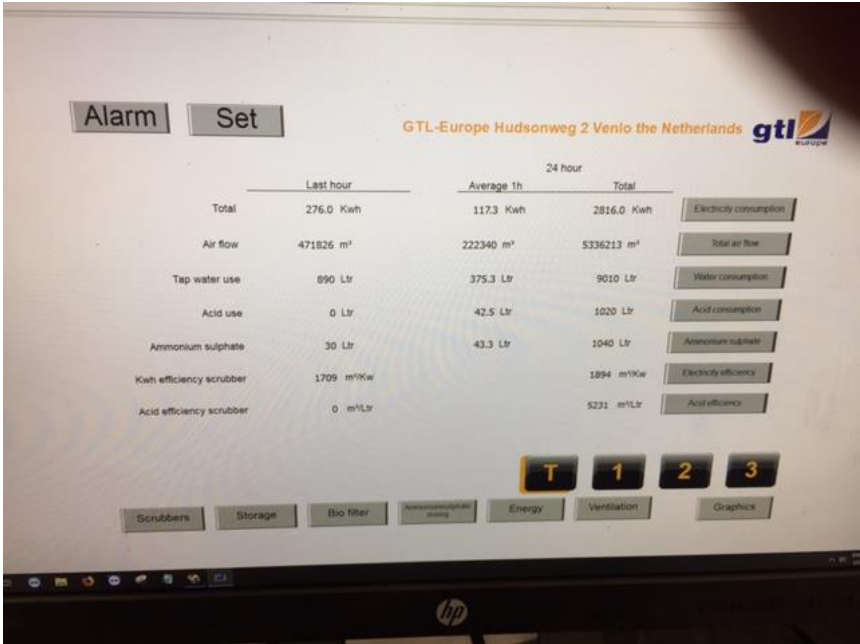
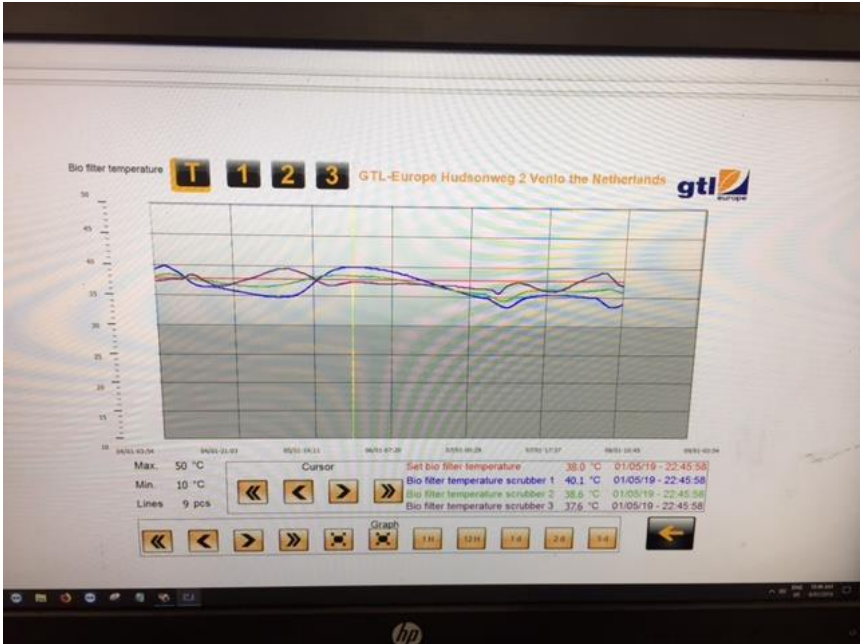
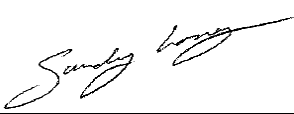


Photo 18 Example of Biofilter Monitoring



APPENDIX C

Independent Auditor Form

Independent Audit Certification Form	
Development Name	Elf Farm Supplies Pty Ltd
Development Consent No.	MP 08_0255 (MOD 1)
Description of Development	Elf produces mushroom compost (substrate) at the site and recently commenced construction of a new odour management system on the site as per MOD 1.
Development Address	108 Mulgrave Road, Mulgrave New South Wales
Operator	As above
Operator Address	As above
Independent Audit	
Title of Audit	Independent Environmental Audit
<p>I certify that I have undertaken the independent audit and prepared the contents of the attached independent audit report and to the best of my knowledge:</p> <ul style="list-style-type: none"> The audit has been undertaken in accordance with the relevant approval condition(s) and in accordance with the auditing standard AS/NSZ ISO 19001:2014 and Post Approval Guidelines – Independent Audits; The findings of the audit are reported truthfully, accurately and completely; I have exercised due diligence and professional judgement in conducting the audit; I have acted professionally, in an unbiased manner and did not allow undue influence to limit or over-ride objectivity in conducting the audit; I am not related to any owner or operator of the development, including where there is a reasonable likelihood or expectation of financial gain or loss to me or to a person to whom I am closely related (i.e. immediately family); Neither I nor my employer have provided consultancy services for the audited development that were subject to this audit except as otherwise declared to the lead regulator prior to the audit; and I have not accepted, not intend to accept any inducement, commission, gift or any other benefit (apart from fair payment) from any owner or operator of the development, their employees or any interested parties. I have not knowingly allowed, not intend to allow my colleagues to do so. <p>Note:</p> <p>a) The Independent Audit is an environmental audit for the purposes of section 122B(2) of the Environmental Planning and Assessment Act 1979. Section 122E provides that a person must not include false or misleading information (or provide information for inclusion in) an audit report produced to the Minister in connection with an environmental authority if the person knows that the information is false or misleading in a material respect. The maximum penalty is, in the case of a corporation, \$1 million and for an individual, \$250,000.</p> <p>b) The Crimes Act 1900 contains other offences relating to false and misleading information; section 192G (Intention to defraud by false or misleading statement – maximum penalty 5 years imprisonment); sections 307A, 307B and 307C (False or misleading applications/information/document – maximum penalty 2 years imprisonment or \$22,000, or both).</p>	
Signature	
Name of Lead / Principal Auditor	Sandy Lonergan
Address	2 Lincoln Street, Lane Cove, NSW 2066
Email Address	slonergan@slrconsulting.com
Date	21 March 2019

APPENDIX D

Auditors CV and Approval Letter



Contact Name: Bruce Zhang
Number: (02) 9274 6137
Email: bruce.zhang@planning.nsw.gov.au

Mr Neil Cockerell
General Manager
Elf Farm Supplies
PO Box 615
WINDSOR NSW 2756

Dear Mr Cockerell

**Elf Mushroom Farm and Substrate Plant (MP 08_0255 MOD 1)
Approval of Experts to Prepare Odour Emissions and Biofilter Control System Audit and
Independent Environmental Audit**

I refer to your correspondence dated 31 July 2018, seeking approval for the appointment of two separate audit teams from SLR Consulting to undertake the Odour Emissions and Biofilter Control Systems Audit and the Independent Environmental Audit pursuant to Condition 5(e)(i) of Schedule 3 and Condition 3A(a) of Schedule 5 of MP 08_0255 MOD1 respectively.

The Department has reviewed the qualifications of the following audit teams:

- Odour Emissions and Biofilter Control System Audit: Mr Ali Naghizadeh, Mr Michael Brecko and Mr Graeme Starke
- Independent Environmental Audit: Ms Sandy Lonergan and Ms Kirsten Lawrence.

The Department concludes the audit teams have the appropriate skills and experience to conduct the above-mentioned audits.

It should be noted that this approval supersedes the previous endorsement of experts under Condition 5(e)(i) of Schedule 3 of MP 08_0255 MOD 1, dated 8 June 2018.

Should you have any queries in relation to this matter, please contact Bruce Zhang, Environmental Assessment Officer on the above contact details.

Yours sincerely

Chris Ritchie
Director
Industry Assessments
as delegate of the Planning Secretary

11/8/18.

CURRICULUM VITAE



SANDY LONERGAN

PRINCIPAL & APAC NATA MANAGER

Acoustics & Vibration, Asia-Pacific

QUALIFICATIONS

BAppSC 1993

Bachelor of Applied Science – Environmental Assessment and Management (University of Newcastle)

Qualified Lead Auditor for Management Systems Team Audits

Qualified Lead Auditor for Quality Audits

Qualified Lead Auditor of Occupational Health and Safety Management Systems

Certificate of Wastewater Treatment, Meadowbank TAFE (1994)

Insert details of qualification here. Delete any unused rows

EXPERTISE

- Project management
- Environmental compliance audits
- Development and auditing of environmental management systems to ISO/IEC14001
- Quality, health and safety and ISO17025 auditing
- System development and management to ISO/IEC17025, ISO/IEC9001 and ISO18001
- Due diligence audits
- Environmental management plans
- Environmental monitoring programs

Sandy has worked as an environmental consultant since graduating from the University of Newcastle.

Her experience provides her with the flexibility to analyse non-technical and technical issues in a logical and systematic manner, to distinguish key issues, identify options and put forward appropriate solutions.

Sandy has experience in working in many industries including but not limited to the coal seam gas, coal, petroleum (refineries), meat industry (red and white meat processing facilities, hatcheries, feed mills, poultry farms), food manufacturers, waste management centres, glass manufacturing.

Sandy is a qualified environmental auditor of Environmental Management System to ISO/IEC 14001 and has been previously engaged by NCSI to conduct EMS certification audits on their behalf.

Sandy has developed and implemented numerous EMS in accordance with ISO/IEC14001.

Sandy has over 20 years' experience in conducting environmental audits ranging from compliance to due diligence

Between 2006 and 2011 she was the Operational and Environmental Manager of an emissions testing company. Her responsibilities included quoting, scheduling and project management. Sandy also developed, implemented and maintained the company's NATA accreditation to ISO/IEC17025 for the company's emission testing and analysis activities. She conducted regular internal audits as well as being part of the external audits.

Since joining SLR she has developed and integrated the Air Quality technical discipline into the company's quality management system, which included obtaining NATA accreditation to ISO/IEC17025.

Due to her expertise in management systems and auditing skills she also manages, as well as conducts the company's internal and external audits in relation to ISO9001 & ISO/IEC17025 and is SLR APAC NATA Manager.

PROJECTS	
	Project Management
Freight Noise Abatement Program (FNAP) (2017 – 2018)	Project Manager for Transport for NSW for SLR Consulting
At Property Treatment Program	Project Manager for Sydney Metro for Transport for NSW
Department of Defence Asbestos Management and Dust Monitoring Program	Project Manager for Department of Defence – 12 months, budget \$200,000
	Environmental Audits
Mayfield No. 4 Berth	Independent Environmental Auditing for Port of Newcastle for NSW Department of Planning and Environment
Development Consent of Allied Mills	Independent Environmental Auditing for NSW Department of Planning and Environment
Development Approval of Elf Farm Supplies	Independent Environmental Auditing for NSW Department of Planning and Environment
Fairview and Arcadia Valley Project Areas of Coal Seam Gas	Third Party Compliance Environmental Audit for Santos
Coal Seam Gas Project Development	Environment Protection and biodiversity Conservation Act (EPBC) Audit for Santos for Commonwealth Government
Fairview Project Area	Third Party Compliance Environmental Audit for Santos
Fairview and Arcadia Project Areas	Third Party compliance Environmental Audit for Santos
Shoalhaven Starches	Environmental Compliance Audits for Department of Planning
	HSE Audits
LNG Development Project in PNG	Internal HSW Gap Audit against client specifications for ERIAS

CURRICULUM VITAE



KIRSTEN LAWRENCE

PRINCIPAL

Air Quality, Asia Pacific

QUALIFICATIONS

BE	1993	B.E. (Chemical and Materials) (Hons), Auckland University
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EXPERTISE

- Project Management
- Air Quality Impact Assessments (AQIA)
- Air Quality Management Plans (AQMP)
- Stack Emissions Monitoring
- Ambient Air Quality Monitoring
- Emissions Estimation and Dispersion Modelling
- Greenhouse Gas Inventories
- Expert Witness

Kirsten is a process engineer with 25 years of experience as an environmental consultant specialising in air quality. During this time she has worked for a wide range of clients, including industry and government, in both Australia and New Zealand. Her particular expertise is in the assessment of the environmental effects of air discharges, emission inventories, atmospheric dispersion modelling and air monitoring.

Kirsten has been responsible for managing large-scale environmental projects for blue-chip clients. She has completed major projects for waste management facilities, CSG developments, power stations, oil refineries, open cut and underground coal and metalliferous mines, chemical manufacturing plants and intensive agricultural developments.

She is experienced in the use of air dispersion models such as TAPM, CALPUFF, AERMOD and the dense gas model SLAB and has assessed air quality impacts from emissions of particulate matter, criteria pollutants, air toxics and odour. She is also experienced in the compilation of GHG emission inventories, and preparation of GHG assessments.

Kirsten has provided expert advice in the review of development applications in the Planning & Environment Court in Queensland, the Victorian Civil and Administrative Tribunal and the Environment Court of NSW. She is also experienced in presenting technical information to stakeholders, including both regulatory authorities and local community members.

PROJECTS

Six Mile Creek Dam Upgrade

Kirsten prepared an air quality impact assessment for a proposed upgrade of the Six Mile Creek Dam on Lake MacDonal. A qualitative assessment of potential off-site air quality impacts was performed, including impacts associated with fugitive dust from the construction works and concrete batch plant, combustion emissions from power generation and odour impacts from the exposure of sediments and aquatic plants during lowering of the lake water level.

Bingo Waste Recycling Facilities

Kirsten was Peer Reviewer for a number of AQIAs for multiple existing WRFs in the Sydney region, involving atmospheric dispersion modelling studies of estimated dust and odour emissions from each site. The AQIAs were prepared to inform development applications for upgrades and proposed operational changes at each site.

Modelling of Radon and Dust Emissions

Kirsten is project manager of an atmospheric dispersion modelling study investigating potential radon and dust concentrations and dust deposition rates associated with fugitive emissions from the Ranger Uranium Mine, post-closure. This work will be used to inform the closure planning studies being performed for the mine by ERA.

Shoalhaven Landfill AQIA	Kirsten has been Project Manager and lead author for an AQIA for a proposed expansion of the Shoalhaven Landfill in Nowra. This work has included odour estimation and dispersion modelling of odour and particulate emissions from the current and proposed landfill operations, including on-site composting operations.
Erskine Park Waste Recycling Facility	Kirsten has provided technical advice regarding the proposed odour management system for the Erskine Park WRF, including preparing tender specification documentation, responding to contractor queries and advising on the impacts of proposed design modifications. She was also involved in the modelling of odour emissions from the facility as part of development approval modification submissions.
Myrtle Creek Odour Assessment	Kirsten has been Project Manager for a detailed odour assessment for a proposed residential development in the vicinity of a number of potential odour sources, including duck farms, a turkey farm and an abattoir. This work has included odour surveys, odour estimation and dispersion modelling, and liaison with the local Council.
PNG Biomass GHG Assessment	Kirsten prepared a detailed GHG Assessment for a proposed 30 MW biomass-fired power station in the Markham Valley, PNG. This work included the compilation of a life-of-Project annual emissions inventory covering GHG emissions associated with fuel use, and the projected fixation of carbon associated with land use change in relation to the dedicated plantations to be established as part of the project.
Cross River Rail 2016 Change Report	Kirsten was Project Manager for the air quality assessment for the CRR 2016 Project. This AQIA focussed on the potential changes in previously predicted air quality impacts for the CRR 2011 Project, based on the differences in the construction and operation phase activities for the two design options. Input was also provided into the draft Environmental Management Plan to address air quality mitigation and monitoring requirements for the CRR 2016 Project.
CSG Air Quality Impact Assessments	<p>Kirsten has been involved in the assessment of air quality impacts associated with a number of coal seam gas developments, including:</p> <ul style="list-style-type: none"> • Fairview Airshed Modelling Study – Santos • Tipton CGPF AQIA – Arrow Energy • Daandine Compressor Station Expansion AQIA - Clough • GLNG LNG Facility (Curtis Island) AQIA – Santos • GLNG LNG Facility construction generators AQIA – Santos • Central Project Area Airshed Modelling Study – QGC • Kenya Hub construction generators AQIA – QGC • Fairview 4 and 5 compressor stations AQIA – Santos • Pipeline Marine Crossing AQIA – Santos <p>Kirsten has been the Project Manager for the vast majority of these projects.</p> <p>In addition to these assessments, Kirsten prepared a series of Air Quality Management Plans for the CSG transmission pipeline construction activities.</p>

Baseline Methane Surveys in the Surat Basin QGC	<p>Kirsten was Project Manager and author for a one year ambient methane survey program to measure concentrations of methane within and surrounding CSG production areas. This work utilised a portable GHG analyser mounted in a vehicle to record concurrent CH₄ concentrations, along with GPS logging, over a series of one week surveys. The collected data was used to compile maps of ambient CH₄ concentrations for the areas surveyed. The results of the surveys were used to assess seasonal and spatial variability in the concentrations measured. Seeps and other point sources of CH₄ were identified and measurements of gas flows were made, where possible, to quantify the emission rates.</p>
Fugitive Emission Studies for Upstream CSG Developments	<p>Kirsten has been the Project Manager and lead consultant on two large fugitive emission studies for upstream CSG developments:</p> <ul style="list-style-type: none"> • QGC – Central Project Area Fugitive Emissions Study • Arrow Energy – Upstream Coal Seam Gas Fugitive Emissions Study <p>Both of these studies involved in-depth literature reviews of current emission estimation techniques specified in the NGER Measurement Determination, including researching the basis of all relevant emission factors and their applicability to the Australian CSG industry.</p> <p>Emission surveys were performed to identify and quantify methane emission leak rates of a range of fugitive emission sources. Facilities surveyed included wellheads, high point vents on the water gathering lines, compressor stations, processing plants and sales connection stations.</p> <p>A detailed analysis of the measured emission data was then performed to derive project-specific emission factors for each study which were compared to the NGER emission factors as well as the results of other recent sampling programs performed in Australia and overseas.</p>
Melbourne Metro Early Works	<p>Kirsten has been providing the lead contractor for the MMEW Projects with advice regarding air quality management and monitoring. She peer reviewed or prepared several AQMPs for major construction sites associated with the project. This included an assessment of potential air quality impacts associated with emissions from the acoustic enclosures in the CBD North Precinct.</p>
Methyl Bromide Impact Assessment	<p>Kirsten was Peer Reviewer for an assessment of potential off-site impacts associated with fugitive releases of methyl bromide emissions from an existing fumigation operation and a major port in NSW. This project included detailed analysis of monitoring data collected by the client on MeBr concentrations in the containers being fumigated, in order to develop a realistic emissions profile for input into the model. Mitigation measures were identified and discussed with the client, with selected measures being modelled to assess the effectiveness of the proposed controls in reducing off-site peak concentrations.</p>
Elk Antelope LNG Project (PNG)	<p>Kirsten is Project Manager for the air quality, GHG and climate change adaptation assessments for a proposed natural gas extraction and processing project in PNG. The proposed development includes the construction and operation of wellpads, a Central Processing Facility, pipeline and downstream LNG Facility.</p>

Independent Peer Reviews of AQIAs (various)	<p>Kirsten has provided independent peer reviews of air quality impact assessments prepared for a number of projects, including:</p> <ul style="list-style-type: none"> • the proposed NSW Art Gallery New Modern project; • a residential development adjacent to the Eastern Distributer Ventilation Stack; • a proposed 840,000 bird broiler farm in Bargo NSW; • the Lae Power Project at the Port of Lae in PNG; • a kennel in a rural-residential area in southwest Queensland; and • a proposed residential development close to the Narangba Industrial Estate. <p>These reviews have covered a range of air quality issues including odour, dust, air toxics and vehicle emissions.</p>
Sarsfield Expansion Project (SEP) and Buck Reef West (BRW), Carpentaria Gold, QLD	<p>Kirsten was lead author for AQIAs prepared for two expansion projects proposed at the Ravenswood Gold Mine. The SEP AQIA addressed outstanding issues raised by EHP regarding previous assessments prepared for the project, which has subsequently received planning approval. The BRW and SEP AQIAs identified mitigation measures, including the development of a proactive dust management strategy, to ensure that off-site dust impacts will be adequately controlled to prevent impacts in the nearby residential areas.</p>
GHG and Energy Management Plans, QGC	<p>Kirsten was subcontracted to QGC for a two week period to prepare GHGEMPs for QGC's Upstream and Midstream Operations. The GHGEMPs were prepared to meet internal Shell reporting requirements, including presentation of emission inventories and identification of major sources, benchmarking of energy efficiency performance, identification of mitigation measures, and cost benefit analyses of measures selected for implementation.</p>
Wafi Goplu Project, PNG	<p>Kirsten has been Project Manager and lead author for a number of air quality and GHG assessments for the proposed Wafi-Golpu copper-gold mine in the Morobe Province of PNG. Activities proposed include underground mining, construction and operation of tailings storage facility, power production, road and pipeline construction. The work has included atmospheric dispersion modelling studies using WRF, CALMET and CALPUFF.</p>
Frieda River Project (PNG)	<p>Kirsten was Project Manager for an air quality and greenhouse gas impact assessment for a proposed copper-gold mine in a remote area of PNG. The proposed development includes an open cut mine, a hydro-electric power scheme, concentrator, mine waste facilities, river port, barging operations and an off-shore concentrate export facility. The air quality impacts of all these proposed activities were assessed against local and international guidelines, based on the results of atmospheric dispersion modelling studies using TAPM and CALPUFF.</p>
Stack Emission Testing Programs – Santos	<p>Kirsten has project managed a number of stack testing programs for Santos, including testing of the GLNG LNG Facility (Curtis Island) construction generators and testing of compressors at the Scotia compressor station</p>

Protocol Development for an F-Type Leak Detection Survey - QGC	Kirsten developed a methodology for demonstrating the sensitivity of an above ground methane survey to detect leaks in underground CSG transmission pipelines. This study involved the design and oversight of field trials to demonstrate that the methane analyser used in the surveys could consistently and robustly detect a below surface methane emission rate equivalent to the maximum Allowable Fluid Variation Limit specified for the certification of underground pipelines in T1 designated areas.
Plume Safety Assessment for the Kenya CPP Flare – QGC	Kirsten performed a screening assessment for all air emission points in the QGC Central Project Area, for both normal operations and upset operating conditions, to compile data required by the Civil Aviation Safety Authority to assess potential hazards to aircraft. In response to a request for further information from CASA, Kirsten subsequently project managed a detailed plume safety assessment for the Kenya CPP flare.
Baseline Air Quality Monitoring for Road Construction Projects	Kirsten has been Project Manager for two baseline air quality monitoring programs for major road construction projects in Brisbane. These projects have included the design and management of the ambient monitoring network (PM ₁₀ , TSP, deposited dust and VOCs), and preparation of a Construction Air Quality Management Plan and Monitoring Strategy document for each project.
Fairview Baseline Air Quality Monitoring Program: NO_x and VOC monitoring – Santos	Kirsten was Project Manager for ambient air quality monitoring program consisting of NO _x , CO and VOC monitoring at two sites; one in Roma and the other in Fairview. The data has been used in AQIAs for CSG field developments in these regions.
Power Station, Port and Filter Plant (PPFP) – Tampakan Copper-Gold Project	Project manager for an air quality and greenhouse gas impact assessment for a proposed 350 MW coal-fired power station, port and copper-gold concentrate filter plant in the Philippines. The air quality impacts of these proposed facilities were assessed based on the results of atmospheric dispersion modelling studies using TAPM and CALPUFF. The study also included the design and oversight of a baseline air quality monitoring program. Subsequent to this, she oversaw a preliminary constraints analysis for two potential alternative sites for the PPFP which involved preliminary dispersion modelling studies at two new locations being considered for the power station.
New Chum Landfill MCU Application	Kirsten prepared an AQIA for the proposed Material Change of Use Application to accept putrescible waste at the New Chum landfill. This study included emission estimation and modelling of particulate and odour emissions for both the landfilling operations and a proposed Alternative Waste Treatment facility.

Ammonium Nitrate Plant – Burrup	Kirsten was Project Manager for an air quality modelling study investigating off-site air quality impacts as well as on-site occupational exposures during emergency release events for a new ammonium nitrate plant being constructed in Western Australia. This work included sub-hourly modelling studies to simulate the impacts of short-term release events and impacts were assessed based on compliance with occupational exposure criteria as well as ambient air quality criteria set for the wider population.
Emergency Release Modelling from Chlorine and Ammonia Storage Tanks, SEQWater	Kirsten has performed emergency release assessments for multiple Water Treatment Plants examining the potential impact zones of uncontrolled releases of ammonia and chlorine. These studies included the estimation of emission rates for a number of accidental release scenarios and modelling of the downwind dispersion of the plume under a range of meteorological conditions using the dense-gas model SLAB.
Orica, Botany NSW	Kirsten was responsible for a number of air quality impact assessments for Orica's Botany site in Sydney. This included the Groundwater Treatment Plant and the HCB Waste Repackaging Facility. She was also heavily involved in the assessments performed for the HCB Waste Destruction Facility and the Car Park Waste Encapsulation Remediation Project.
Caltex Kurnell Oil Refinery	Kirsten was responsible for a number of air impact and air dispersion modelling studies for the Caltex Refinery in Kurnell, Sydney. This included project managing detailed modelling studies to investigate potential SO ₂ mitigation options, H ₂ S and NO _x air impact assessments, odour incident investigations, and modelling studies to assess the impact of emissions of particulate matter and hazardous substances. Prior to this, Kirsten prepared AQIAs for the Clean Fuels Project and the Flare Replacement Project, including aviation safety assessments in accordance with CASA requirements.
Huntsman Ethylene Oxide and Propylene Oxide Modelling Study	Kirsten performed a number of modelling studies to address the requirements of a Pollution Reduction Program to quantify the impacts of existing EO and PO emissions from the Huntsman site in the Botany Industrial Park, Sydney. She prepared an AQIA report which was submitted as part of the development application for a new scrubbing system to treat the emissions.
Large Mining Development (Confidential)	Project managed the preliminary air quality impact assessment for a large proposed mining project in Queensland. This project included emission estimation, atmospheric dispersion modelling and an ambient air quality monitoring program. The monitoring program involved continuous monitoring for particulates, NO _x and SO ₂ , the installation and operation of a 30 m meteorological monitoring station, and monitoring of dust deposition, VOCs and metals.
MEMBERSHIPS	
CAQP	Certified Air Quality Professional (CASANZ)
CASANZ	Member of the Clean Air Society of Australia and New Zealand (CASANZ)

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