

INDEPENDENT ENVIRONMENTAL AUDIT

Prepared for:

Elf Farm Supplies Pty Ltd
PO Box 615
WINDSOR NSW 2756

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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 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;
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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.


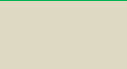





Table 18 Additional Recommendations and Opportunities for Improvement

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. <p><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.</i></p> <p><i>The Department believes that this non-compliance has occurred because of a genuine misunderstanding of the condition and the definition of an emergency.</i></p> <ul style="list-style-type: none"> • 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"><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>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

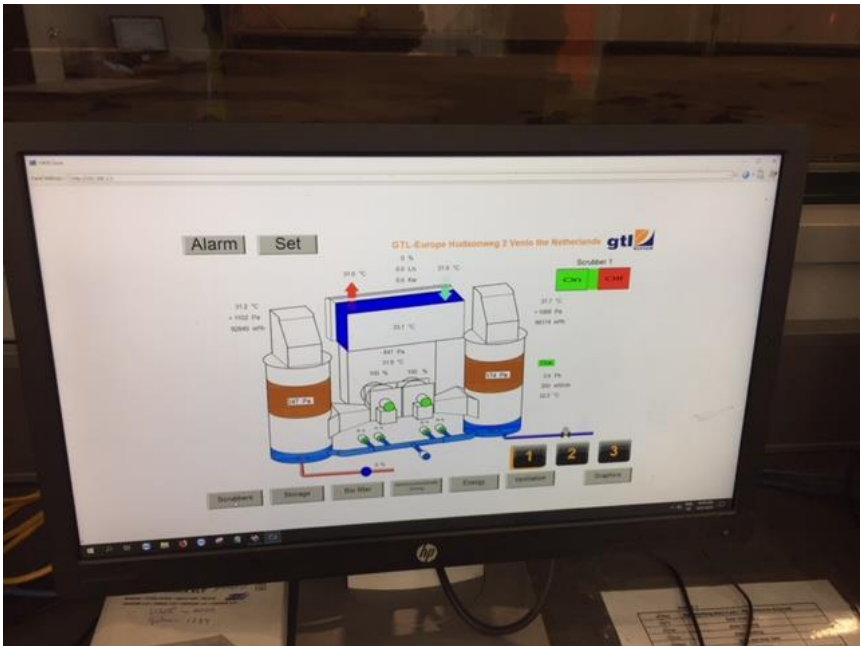


Photo 16 Example of Monitoring System

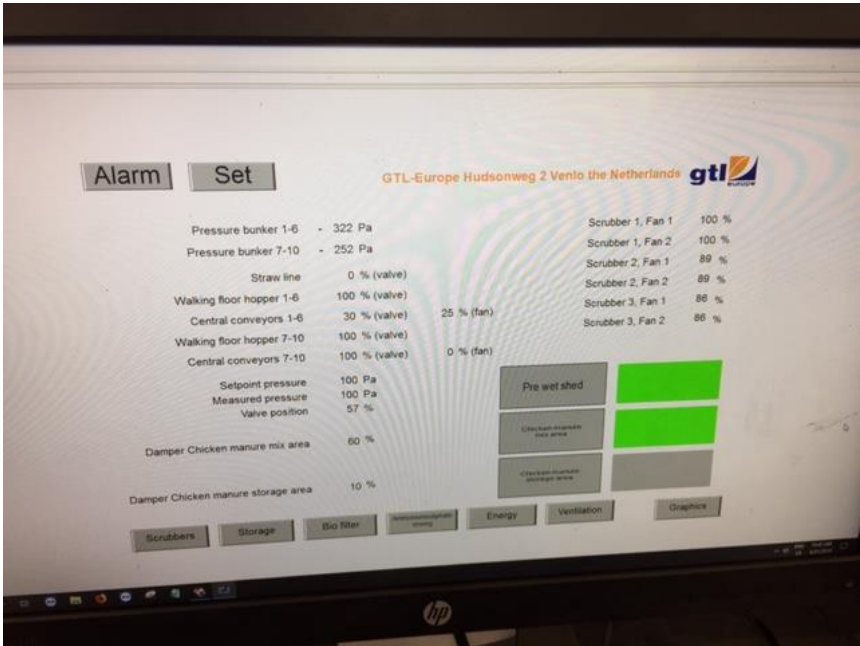


Photo 17 Examples of PLC System

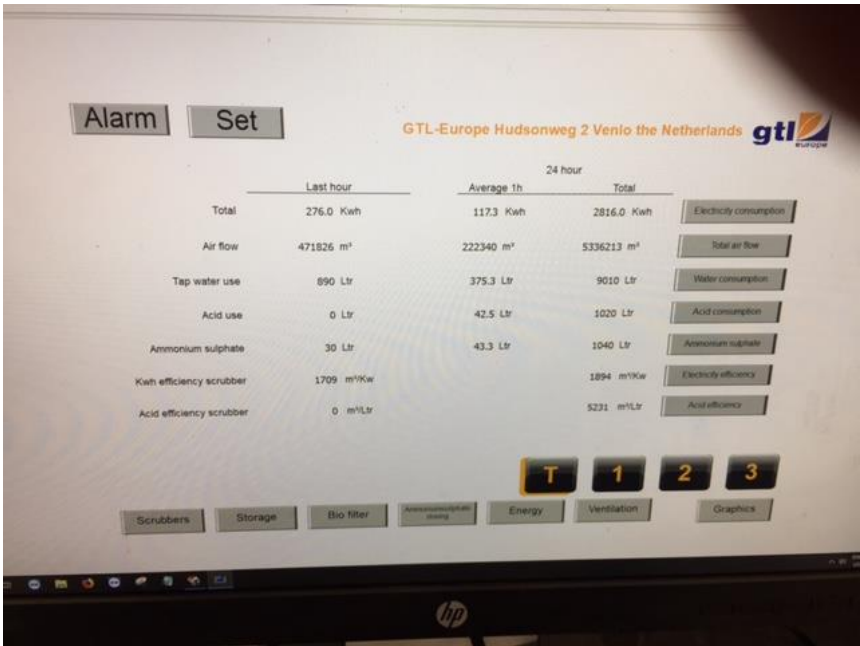
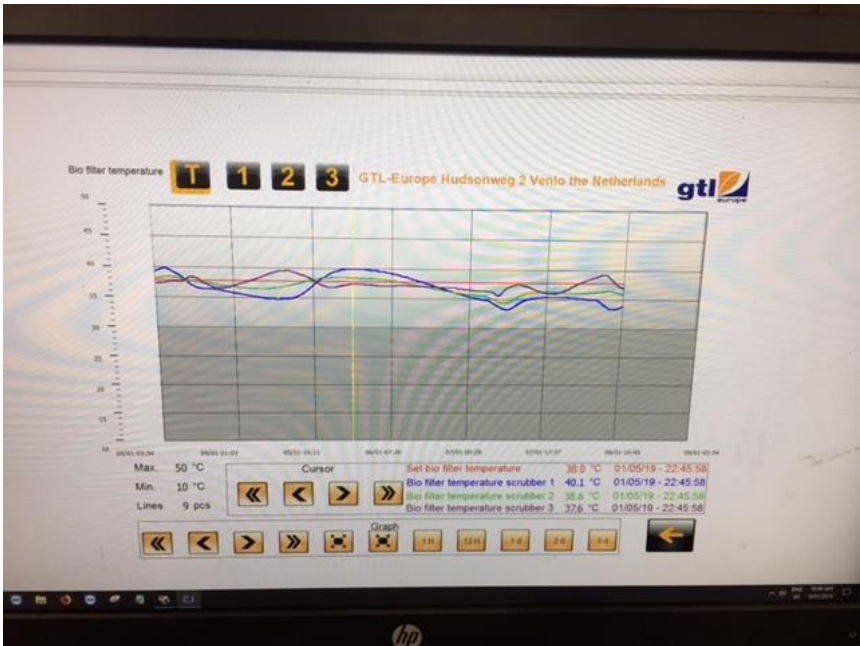


Photo 18 Example of Biofilter Monitoring



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> <ol style="list-style-type: none"> 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. 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). 	
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 Goplui 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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