ELF FARM SUPPLIES PTY LTD

MUSHROOM SUBSTRATE PLANT

Project Modification No 3

Environmental Assessment

Perram & Partners

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Project Modification No 3

Environmental Assessment

Report 139R1

May 2018

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EXECUTIVE SUMMARY

This environmental assessment accompanies an application for modification to the project and concept plan approvals for Elf Farm Supplies' mushroom substrate plant at 108 Mulgrave Road, Mulgrave. The original approvals were issued in 2012 under Part 3A of the Environmental Planning and Assessment Act, 1979.

The current application seeks approval to complete the straw bale storage area as an open air storage, to modify the stormwater management system and to retain an existing corridor of trees planted to assist with visual screening of the plant.

The bale storage area will be finished to a consistent level as part of the process requiring about 2,250 cubic metres of fill to be placed in the south east corner. Perimeter walls are proposed around most of the storage area designed to ensure the acoustic objectives for the site will continue to be achieved.

Included photographs show the advanced growth of trees planted on the tree corridor confirming it is achieving its purpose. Soil reports are included verifying that the material used to prepare the bed for the tree corridor was suitable for this purpose.

An included stormwater management report shows the revised catchment plan for the site and modifies the detention basin system with outlets designed for improved protection against soil erosion.

1
INTRODUCTION

1.1 PURPOSE OF THE REPORT

This report has been prepared to accompany an application to the Department of Planning and Environment to modify an approved project and concept plan for Elf Farm Supplies' mushroom substrate plant at 108 Mulgrave Road, Mulgrave. The proposed modification is referred to as MOD 3. *Figure 1* shows the location of the substrate plant.

The original approvals for the project and concept plan (MP 08_0225) were granted by the Minister for Planning on 11 January 2012 under (now repealed) Part 3A of the Environmental Planning and Assessment Act, 1979. A modification to the approvals (MOD 1) was approved by the Planning and Assessment Commission under transitional provisions of the Act on 14 March 2016. These approvals permit Elf Farm Supplies to further develop the company's mushroom substrate plant at Mulgrave; to apply for staged increase in substrate production; and to introduce new technology for substrate production and odour management.

The current application (MOD 3) seeks to further modify the concept plan and project approval under transitional provisions[1] of the Act for the following purposes:

- complete the bale storage area as an open air storage in lieu of storage sheds, including adjusting levels in one corner and constructing sections of perimeter wall for noise attenuation and separation from other plant;
- approve an existing corridor of planted trees along the western boundary of the site; and
- modify the stormwater management system to incorporate an additional basin and redesigned outlet structures.

This role of this report is to describe and assess the proposed modification to the approvals and its environmental impact. It is not a re-assessment of the approved development as a whole. Reference should be made to the original environmental assessment for the Part 3A project (Perram & Partners 2010) and the environmental assessment for the MOD 1 application (Perram & Partners 2015) for description and assessment of aspects of the approved project that are unaffected by the proposed modification. Modification to the concept plan is required with respect to the tree corridor and minor stormwater outlet works located on land zoned RU4.

[1] Although Part 3A has been repealed, its provisions remain in force with respect to the current request for modification which was submitted prior to the cut-off date for such applications.

136R2 21-11-14

FIGURE 1 Mulgrave Substrate Plant

1.2 ENVIRONMENTAL ASSESSMENT REQUIREMENTS

By letter dated 4 April 2017 the Department of Planning and Environment advised Secretary's Environmental Assessment Requirements (SEARS) for this environmental assessment, summarised as follows:

- Description of the modification;
- Need and justification for the modification, considering two DPI publications;
- Scaled site plans and photos showing proposed modifications to building works;
- Identification of environmental impacts including detailed assessment of:
  - Water impacts, including flooding and stormwater;
  - Soil, including assessment of the suitability of fill placed along the tree corridor;
  - Biodiversity impacts;
  - Noise impacts, including consideration of the currency of the existing noise assessment and the efficacy of the proposed noise wall;
  - Fire and Risk, including fire safety improvements, with reference to HIPAP guidelines;
  - Hazards, including preliminary risk screening and if required, a preliminary hazard analysis;
  - Visual impacts
- Identification of conditions to be modified

In addition the Department enclosed replies received from the Environment Protection Authority, Department of Primary Industries, Hawkesbury Council and Fire and Rescue NSW and requested that matters raised by these agencies also be addressed. Correspondence from the Department together with the accompanying agency responses are included in this document as *Appendix A*.

To clarify responses from the Department and other Government agencies, the application for modification as originally submitted included a request to delete a condition requiring a riparian corridor to be constructed along South Creek. The applicant no longer wishes to pursue that request, hence requirements for assessment of that item have been made redundant.

Matters listed by the Department of Planning and Environment for inclusion in the environmental assessment are set out in *Table 1.1* together with a response or direction to where the matter is addressed in the environmental assessment.

Table 1.1 RESPONSE TO DOPE REQUIREMENTS

DOPE Requirement	Response
• Description of the modification;	Please refer to section 2
• Need and justification;	Please refer to section 2
• Site plans and photos;	Please refer to sections 1, 2 and 3, *Appendix B* and *Appendix G*

• identification of environmental impacts including water, soil, biodiversity, noise, fire and risk, hazards and visual;	Please refer to section 3

Relevant matters raised in the agency responses are listed in *Table 1.2* together with a response.

Table 1.2 RESPONSE TO AGENCY REPLIES

Agency	Requirement	Response
EPA	• Assess effectiveness of the proposed acoustic wall;	Please refer to section 3 and *Appendix D*.
EPA	• Does the last noise assessment accurately reflect current conditions?;	Please refer to *Appendix D*.
EPA	• Demonstrate that fill material is appropriate and lawfully placed;	Please refer to section 3 and *Appendix E*
DPI	• Justification for not creating a riparian buffer zone along South Creek;	A request to delete a condition relating to a riparian buffer zone is not being pursued, so the matter is no longer relevant.
HCC	• Provide an acoustic report for the proposed changes to the acoustic controls	Please refer to section 3 and *Appendix D*.
F & R NSW	• Purpose of the wall separating the weighbridge and diesel storage from the straw area	Please refer to section 2.
F & R NSW	• Details of any hydrant line to be installed	A hydrant line is not proposed as part of MOD 3

1.3 SITE PLAN

Figure 2 is a layout plan of the site showing the outline of existing structures, works currently under construction and approved structures not yet constructed.

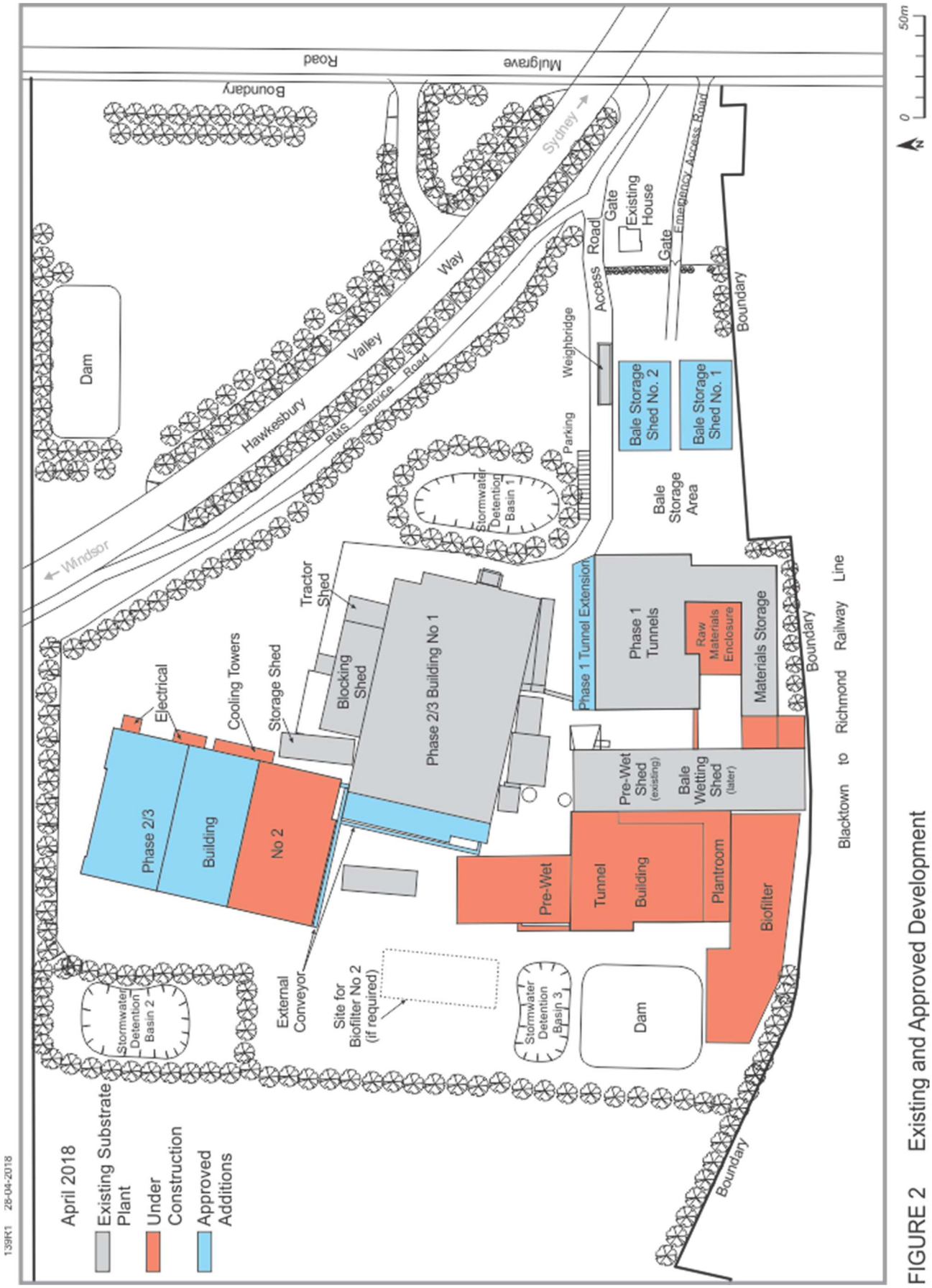


FIGURE 2 Existing and Approved Development

2
PROPOSED MODIFICATION

2.1 BALE STORAGE AREA

2.1.1 Background

The project approval for the substrate plant issued in January 2012 gave approval to construct two storage sheds for straw bales at the south-eastern part of the site. Straw bales were already being stored in this area on open ground. The location of the approved sheds is shown on *Figure 2*.

Following the 2012 approval Elf Farm supplies reconsidered the necessity of the bale sheds and postponed their construction for further review. In November 2016, a fire occurred in the stacked straw bales. Elf Farm Supplies observed that the ability to fight and extinguish the fire would have been significantly hampered had the bales been stacked in sheds. Consequently a decision has been made not to construct the bale sheds. Instead straw bales will continue to be stored in the open air, partially enclosed within a perimeter barrier. The perimeter barrier will be required to achieve the acoustic screening objectives for the site.

2.1.2 Noise Barrier

The assessment of acoustic impacts for the substrate plant submitted with the original project application (Perram & Partners 2010) took into account the planned presence of the bale sheds together with a seven metre high concrete wall planned to be constructed adjoining the southern shed along the southern boundary as part of a second outdoor bale wetting area. As a result of the MOD 1 approval in March 2015 the outdoor bale wetting area and associated wall were no longer required. A temporary noise control solution was approved at that time whereby straw bales were stacked near the boundary in a configuration to achieve the desired noise screening.

The current application, MOD 3, seeks approval to install a permanent noise barrier that will ensure the substrate plant operates within the acoustic criteria specified in the project approval. The proposed barrier will be part of a perimeter wall system to be installed adjacent to the straw bale storage area.

Location and design details for the proposed noise barrier are shown in plan and elevation drawings in *Appendix B*. The barrier will extend along the full southern and eastern boundaries of the outdoor bale storage area and return approximately 18 metres along the western boundary where it is adjacent to the existing materials storage shed.

The wall will have a height of four metres above the finished surface of the bale storage area. This land has mostly been filled to 16 metres AHD for flood protection. The adjacent land to the south and east has not been filled to the same extent so the wall will have a variable height of up to eight metres with the section of the wall below the finished level of the bale storage area having the function of retaining the filled land.

The noise barrier will be formed with concrete panels retained between steel columns and be of similar appearance to barriers used beside modern road projects. The panels will be of sufficient strength to tolerate occasional impact from front end loaders placing and collecting straw bales in the storage area.

2.1.3 Filling

To prepare the land for noise barrier construction a small section of the storage area in the south east corner will be filled to 16 metres AHD. Before and after surveys of this land showing the extent of fill are included in *Appendix B*. The quantity of fill required is shown on the survey diagrams to be 2,250 cubic metres with a maximum depth of about 3.3 metres.

As with previous filling on the substrate plant site the material to be imported will be sourced from construction projects in the Sydney region that have surplus excavated material at the time filling is underway. The imported fill will be excavated natural material certified to be free of contamination or other material approved by the EPA for the intended purpose. Some material may come from excavation on the substrate plant site associated with ongoing building work. The surface of the filled area will be finished as hardstand, similar to the remainder of the bale storage area.

Fill material will be placed and compacted prior to constructing the noise barrier. Stormwater draining from the final surface will flow to the existing retention basin, located nearby on the northern side of the access road as shown on *Figure 2*. During filling and other construction works related to the noise barrier, sedimentation fencing will be in place to restrict any movement of sediment from the work area.

2.1.4 Northern Perimeter Wall

A further short section of wall will be constructed on the northern side of the bale storage area. This wall does not have a function to reduce noise transmission, but is intended to delineate the edge of the storage area where it is in proximity to the weighbridge and fuel storage tank. The wall will be readily visible to a front end loader driver when travelling with a raised straw bale.

The wall will not be relied upon for fire protection, and hence does not require a fire rating. Adequate protection of the weighbridge and fuel storage tank from a fire in the

straw bales will be provided by the separation distance. This section of the perimeter wall will ensure that adequate separation distance is always maintained.

The northern section of perimeter wall will be approximately 50 metres in length with an offset to provide differing clearances to the weighbridge and fuel storage tank. For consistency, the wall will have the same height and design as the noise barrier described in section 2.1.2. Location and design details for the northern perimeter wall are as shown in *Appendix B*.

2.1.5 Justification

The noise barrier is required to ensure the substrate plant continues to meet its acoustic objectives following a decision not to construct bale storage sheds and a second external bale wetting area.

The northern perimeter wall will ensure that straw bales cannot be stacked so close to the weighbridge or fuel tank to present a risk to those assets in the event of fire.

2.2 TREE CORRIDOR

2.2.1 Purpose

In February, 2015 activities commenced resulting in a corridor of trees being established along the western boundary of the substrate plant site. The tree corridor has the following purposes:

- delineate the western side of the substrate plant and its operations from the balance of property which remains as farmland extending to South Creek;
- enclose and screen the existing dam, west of the site; and
- provide a continuous visual screen to the extent possible along the western side of the site to reduce the visibility of batters and structures being constructed under MOD 1 and to complement existing screening already established on other sides of the plant.

The location of the tree corridor is shown on aerial photograph, *Figure 3*. The plantings have been established on land zoned in Hawkesbury LEP, 2012 as RU4 – Primary Production Small Lots. Development for the purposes of the substrate plant, being a rural industry, is not permissible within the RU4 zone, although environmental protection works are permissible without consent. A modification to the concept plan for the project is recommended for the tree corridor to be approved.

2.2.2 Design

The tree corridor has been established on land previously disturbed for farming where the soil was often saturated. To provide a better growing medium for the planted trees and enable access by motor vehicle in wet and dry periods the corridor was prepared for planting by raising its level to create a low mound. The mound is approximately 10 metres wide by 110 metres long and of variable height, up to about three metres above the adjoining farm land. Vehicular access is available along the crest to service the landscaped area and the adjoining dam. A swale has been left at the northern end of the corridor to provide for the enclosed area to drain naturally. This is aided by a pipe passing beneath the mound from the basin near the existing dam.

The mound was created using excavated natural material imported to the site for this purpose and some material stripped from areas previously filled for MOD 1, including the biofilter pad. Reports from Compaction & Soil Testing Services Pty Ltd verifying the source and importation of material for the tree corridor are included as *Appendix E.*

Tree species planted are from the schedule of species previously planted at the substrate plant site. Photographs of the tree corridor are included in section 3.

2.2.3 Justification

The tree corridor is justified because it when fully mature it will achieve its purpose to help reduce the visual impact of the substrate plant. It will also provide a linkage between vegetated areas on the site assisting movement of wildlife. To remove the tree corridor at this stage would have a negative impact on the locality and would reverse an initiative that has had a positive outcome.

2.3 MODIFIED STORMWATER SYSTEM

Modification to the stormwater system is required as follows:

1. The proposal to fill the south eastern corner of the bale storage area will alter the size of catchments in that area.
2. The MOD 1 works have altered the sharing of the various roof and hardstand areas between the existing outlets on the western side. One of the existing outlets leads to a reed-filled depression north of the dam which has been serving as an informal detention basin.

Barker Ryan Stewart, who undertook the original stormwater design for the project in 2010, has provided a stormwater management report, included as *Appendix G.* The report recalculates the catchment areas, provides for the third basin to be formalised and proposes upgrading measures to the outlets of the two existing basins.

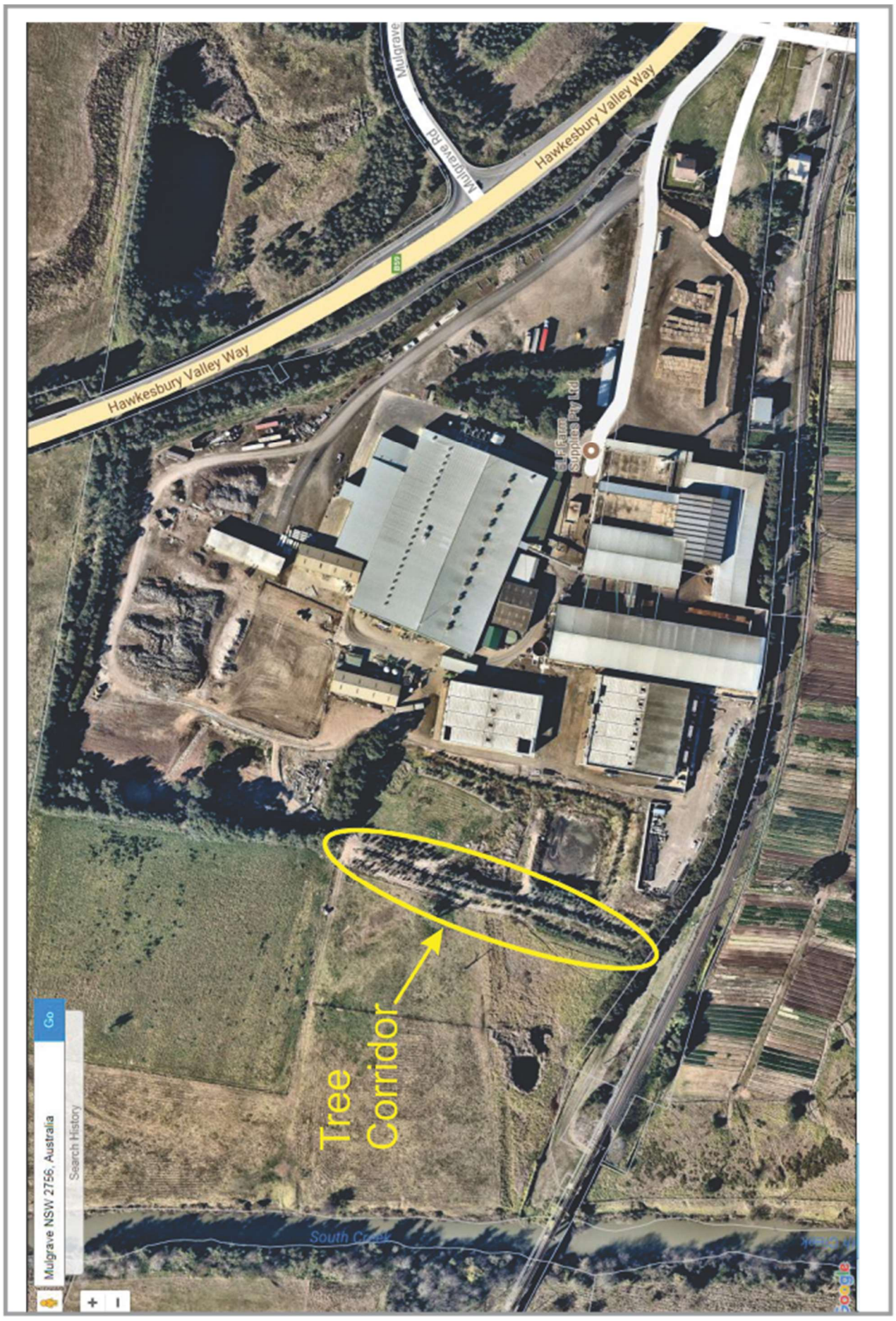


FIGURE 3 Aerial Photograph (July 2017)

139R1 24-08-2017

2.3.1 Design

As described in the stormwater management report the works proposed to be undertaken in each basin include:

- regrade the floor to achieve the desired fall;
- construct a discharge control pit with trash screen and orifice plate;
- provide an outlet structure with rock armouring (two western basins); and
- install an overflow weir with rock armouring (two western basins).

Detailed design drawings for these works are included in *Appendix G*.

2.3.2 Justification

The proposed stormwater works provide improved stormwater management on the site by formalising the third detention basin and upgrading the design of outlet structures for all basins for improved erosion control.

Modification to the concept plan is requested because the works required to be undertaken in the western basins are located on lands zoned RU4.

3
ENVIRONMENTAL ASSESSMENT

3.1 NOISE

An environmental noise assessment has been obtained for the proposed acoustic barrier from Acoustic Consulting Engineers, included as *Appendix D*. The assessment has taken into account changes at the site which have:

- deleted the bale storage sheds and eastern bale wetting area; and
- replaced previous mobile plant with new quieter equipment since the original assessment was carried out in 2010.

The bale storage sheds were designed to have 7.3 metre walls with an overall building height of approximately 10 metres. The eastern bale wetting area was to be equipped with a seven metre concrete wall along the southern boundary to support the bale wetting boom equipment. Together these structures effectively enclosed the straw storage and manoeuvring area while at the same time providing more than adequate noise attenuation.

Acoustic Consulting Engineers has reassessed noise levels at the closest receiver locations taking into account the new quieter mobile plant and the acoustic barrier proposed in this application. The results indicate that with these changes the noise limits included in the project approval will be achieved. A recommendation that existing reversing beepers on loaders be replaced with broad band level varying 'quacker' reversing alarms will be adopted.

3.2 VISUAL IMPACT

3.2.1 Acoustic Barrier

On the eastern side of the substrate plant the proposed modification would introduce an acoustic barrier part way around the outdoor storage area for straw bales. The barrier would be visible to some extent from trains on the adjacent railway line to the south and from Mulgrave Station and nearby lands to the east of the site.

The barrier will be located in an area where straw bales are already stacked as shown in accompanying photographs 1 and 2. The bales are stacked three-high to about 3.6 metres. The proposed acoustic barrier will extend four metres above the surface level, just enough to prevent views of the bales.

Photograph 1 shows the caretaker's house in the frontage with a mesh fence immediately behind. The acoustic barrier will be located along the same line as the fence after the triangular area behind the house is filled to the same level as the remainder of the bale storage area. The barrier would appear slightly higher than the stored bales.

Photograph 2 shows that the view from the vicinity of Mulgrave Station is mostly obscured by the existing cottage beside the rail line and railway infrastructure. Again the stacked straw bales in the distance indicate the location and height of the acoustic barrier.

By contrast the currently approved bale storage sheds would be more than twice as high, with a roof height of 10 metres and a wall height of 7.3 metres. The previously approved bale wetting area included a seven metre high wall along the side boundary. In combination, the seven metre wall and southern bale storage shed would have resulted in approximately 100 metres of wall at or above seven metres. The four metre high acoustic barrier now proposed will have a reduced visual impact compared to that associated with the previous approval.

3.2.2 Tree Corridor

The tree corridor, if permitted to grow to maturity, will have a beneficial visual effect in that it will help to screen the substrate plant from the western side. This band of trees and shrubs will complement planted areas in other parts of the site which have achieved a good visual barrier over what was once cleared land. Photographs 3 and 4 show the tree corridor viewed from near South Creek and at close range.

3.2.3 Stormwater Works

The only visible features of the proposed stormwater works will be the rock armoured outlets and spillways on the western side of the site adjoining the farm land. These works will be at ground level and while visible during and immediately after construction will become obscured from view by vegetation growth in a short period of time.

PHOTOGRAPH 1 Property frontage showing stacked straw bales and caretaker's cottage

PHOTOGRAPH 2 Oblique view from Mulgrave Road with straw bales in the distance

PHOTOGRAPH 3 Tree corridor viewed from near South Creek (Aug 2017)

PHOTOGRAPH 4 Tree corridor viewed at short range (Aug 2017)

3.3 WATER MANAGEMENT

The stormwater system for the substrate plant and its approved expansion was designed by Barker Ryan Stewart (Perram & Partners 2010). Barker Ryan Stewart has now provided a stormwater management report to take into account changes to the catchment arrangement since the original design was undertaken.

The catchment of the bale storage area flows to sediment basin 1 just north of the access road. The settled water outlet from this basin is piped to a reed bed and dam in the north-eastern corner of the property, beside Hawkesbury Valley Way. The current proposal will create a minor increase in the catchment area when a portion of the bale storage area is filled to the same level as the remainder (see section 2.1.3 and *Appendix B*). The area to be filled currently drains to the east. The proposed acoustic wall will be an impermeable barrier enclosing the bale storage area directing all of its runoff to basin 1. The stormwater management report (*Appendix G*) has included the additional bale storage area into the catchment of basin No 1.

Changes to stormwater management on the western side of the site will provide additional environmental protection. An additional basin will be formalised to manage stormwater and both basins will be fitted with armoured discharge and spillways.

3.4 FLOODING

It is predicted the effect of the proposed modification on flood performance is inconsequential. This is confirmed in the two letters from a flooding consultant from 2016 and 2018, included in *Appendix C*. In 2016 the consultant considered the filling that had by that time been emplaced for the tree corridor and in 2018 considered both the tree corridor and proposed filling to level the bale storage area.

The letters observe that the volume of fill is within the range of previous modelling and is not located in an area of flow. Previous modelling has shown that flood levels are relatively insensitive to filling works in the plant area, attributed to the site being in the lee of the upstream railway embankment and not in proximity to South Creek.

3.5 FIRE AND RISK

The Department's publication *Hazardous Industry Planning Advisory Paper No 2 - Fire Safety Study Guidelines* (DoP 2011) is primarily focussed on preparation of a fire safety study. In this case the Department has requested information on fire safety improvements associated with the modification, having regard to relevant aspects of the guideline.

In November 2016 Elf Farm Supplies experienced a fire in straw bales stacked in the bale storage area in the south eastern part of the site. That was the first time that straw bales had caught fire in some 40 years of operations at Mulgrave. The fire confirmed some valuable lessons in relation to storing straw bales on the site:

- the best way to fight a fire in straw bales is to have them readily accessible. This enables fire fighters to apply suppressant from all sides and permits easy access for front end loaders to move unaffected straw bales away from the area before they are ignited;
- water supply and hydrant availability serving the storage area was adequate for firefighting and does not require augmentation;
- it is necessary to ensure that dry straw bales are always separated from buildings and other assets to prevent a fire spreading; and
- strong wind can drive a fire across stacked bales igniting the surface layers with visible flame. By contrast the tightly packed material below tends to smoulder.

Heeding these lessons, the proposal includes fire safety improvements:

- bale storage sheds will not be utilised as they could unduly restrict access to straw bales for firefighting;
- a perimeter wall will be installed to ensure that straw bales are always a minimum distance from the fuel storage tank and weighbridge;
- the bale storage area will be surrounded on three sides with structures that will restrict the effects of wind on the stacked bales; and
- the acoustic barrier will be impermeable preventing fire runoff water from leaving the bale storage area except in the direction of the on-site collection system.

3.6 SOIL

Material was imported for the tree corridor under the auspices of Compaction and Soil Testing Services Pty Ltd (CSTS). The emplacement comprised material directly imported for this purpose and some material stripped from the biofilter pad. Two reports have been received from CSTS dated 3 December 2015 and 30 March 2016 referring to the source of these materials. The reports are included as *Appendix D*.

The reports indicate:

- material directly imported for the tree corridor was classified following testing at the source to be Excavated Natural Material; and
- material imported for the biofilter pad is referred to as "Sydney Trains Screened Soil" approved for use under the relevant regulation and by Hawkesbury Council.

The material emplaced is considered suitable for the purpose of the tree corridor.

3.7 BIODIVERSITY

The Mulgrave property was surveyed for flora and fauna as part of the environmental assessment for the Part 3A project (Perram & Partners 2010). The survey report observed that the land has been re-contoured and filled in the past. Surface vegetation primarily comprises exotic grasses and herbs for grazing with some weed species. There was no useful animal habitat in the substrate plant site and no threatened species were recorded. Since that survey was carried out areas landscaped around the development have progressed towards maturity potentially providing improved fauna habitat.

The development proposed in this application for modification will have minimal effect on existing biodiversity. The tree corridor, if permitted to remain, would potentially provide additional habitat and linkage between existing areas of established native vegetation, to the benefit of wildlife. Conversely removing the tree corridor would prevent this linkage from becoming established.

3.8 HAZARD ANALYSIS

A preliminary hazard analysis (PHA) has been prepared by SLR Consulting Australia Pty Ltd and is included as *Appendix F*. The need for a PHA was triggered by a preliminary risk screening assessment of the plant consistent with guidelines published by the Department of Planning (2011).

Consideration of the guidelines in conjunction with the Australian Dangerous Goods Code indicates a screening threshold for sulphuric acid storage of 25 tonnes. When the current ammonia scrubber installation is complete and operational up to 20,000 litres of sulphuric acid will be stored in the plant room. This quantity has a weight of some 37 tonnes and being above the screening threshold necessitates the preparation of a PHA.

The PHA considered risks from sulphuric acid storage and other relevant risks from the plant and concluded that "the proposed development meets all the requirements stipulated by the Department of Planning and hence would not be considered, with suitable engineering controls in place, to be an offensive or hazardous development on site or would not be impacted by any hazardous incidents from adjoining facilities off site".

REFERENCES

Atkins Acoustics (2010)
Operation and Construction Noise Impact Assessment, Mushroom Substrate Plant, Mulgrave

Department of Planning (2011)
Hazardous and Offensive Development Application Guidelines – Applying SEPP 33

Department of Planning (2011)
Hazardous Industry Planning Advisory Paper No 2 - Fire Safety Study Guidelines

Department of Primary Industries (2012)
Guidelines for Riparian Corridors on Waterfront Land

Department of Primary Industries (2013)
Policy and Guidelines for Fish Habitat Conservation and Management

NSW Department of Planning and Infrastructure (2011)
Major Project Assessment, Elf Mushroom Farm and Substrate Plant (MP 08_0225)

Perram & Partners (2010)
Mushroom Industry Expansion in Western Sydney, Environmental Assessment

APPENDICES

Appendix A

DEPT OF PLANNING & ENVIRONMENT CORRESPONDENCE

NSW GOVERNMENT | Planning & Environment

Contact: Emma Barnet
Phone: (02) 9274 6412
Email emma.barnet@planning.nsw.gov.au

Mr Neil Cockerell
Elf Farm Supplies Pty Ltd
PO Box 615
Windsor NSW 2756

Dear Mr Cockerell

Elf Mushroom Farm and Substrate Plant (MP 08_0255 MOD 3) Environmental Assessment Requirements (EARs)

I refer to your request of 18 January 2017 and preliminary assessment submitted 8 March 2017, seeking environmental assessment requirements (EARs) for a modification request to the Minister's consent for the Elf Mushroom Farm and Substrate Plant (08_0255) under section 75W of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

In accordance with section 75(3) of the EP&A Act, the EARs for the request are included below. The EARs have been prepared in consultation with the Environment Protection Authority, Department of Primary Industries, Hawkesbury Council and Fire and Rescue NSW (see **Attachment 1**) and are based on the information provided to date. Your assessment must address the EARs below as well as the matters raised in the agencies' responses.

Your modification request should be accompanied by an Environmental Assessment (EA) which includes the following:

- **Description of the modification**;
- **Need and justification** for the modification including consideration of the DPI *Water Guidelines for Controlled Activities (2012)* and DPI *Fisheries Policy and guidelines for fish habitat conservation and management (2013)*;
- **Scaled site plans and photos** – including the modifications to the existing or approved building works;
- **Identification of the environmental impacts of the modification** – including a detailed assessment of the following:
  - **Water impacts**, including flooding and stormwater;
  - **Soil**, including an assessment of the suitability of the fill placed along the tree corridor;
  - **Biodiversity impacts**;
  - **Noise impacts**, including consideration as to whether the original Noise Impact assessment accurately reflects the existing noise environment and whether the proposed noise wall would ensure the project meets the noise criteria;
  - **Fire and Risk**, including detailed information on the fire safety improvements associated with the modification and a demonstration of their effectiveness. The study should cover relevant aspects of *Hazardous Industry Planning Advisory Paper No. 2 – Fire Safety Study Guidelines;*
  - **Hazards**, including a preliminary risk screening undertaken in accordance with *State Environmental Planning Policy No. 33 – Hazardous and Offensive Development* and *Applying SEPP 33* (DoP, 2011), with a clear indication of class, quantity and location of all dangerous goods and hazardous materials associated with the facility. Should preliminary screening indicate that the facility is "potentially hazardous," a Preliminary Hazard Analysis (PHA) must be prepared in accordance with *Hazardous Industry Planning Advisory Paper*

No. 6 - Guidelines for Hazard Analysis (DoP, 2011) and Multi-Level Risk Assessment (DoP, 2011);
  - **Visual Impacts**; and
- **Identification of conditions to be modified**.

The Department strongly recommends that you consult with other relevant government agencies including but not limited to Council, the Environment Protection Authority and Department of Primary Industries in preparing the EA.

Following the provision of the EA, the Department will advise you of the applicable fee (under Division 1A, Part 15 of the *Environmental Planning and Assessment Regulation 2000*) and any requirements regarding public exhibition of the modification.

If you have any enquiries about these requirements, please contact Emma Barnet on the above details.

Yours sincerely

C. Ritchie 4/4/17.

Chris Ritchie
Director
Industry Assessments

CC: Terry Perram Perram and Partners

ATTACHMENT 1

Our reference: DOC17/175772-01

Chris Ritchie
NSW Department of Planning & Environment
GPO Box 39
SYDNEY NSW 2001
Attention: Emma Barnett

BY STANDARD POST & EMAIL
27 March 2017

Dear Mr Ritchie,

RE: 08_0255 MOD 3 - ELF Farm Supplies - Proposed Modifications to Mulgrave Substrate Plant Requested EPA Matters For Consideration

I refer to the Compaction and Soil Testing Services Pty Ltd *Elf Farm Supplies Mushroom Substrate Facility Modification to Approved Project*, December 2016 ("Proposed MOD 3") submitted in support of the proponents request for environmental assessment requirements. The Department of Planning and Environment ("DP&E") provided Proposed MOD 3 to the Environment Protection Authority ("EPA") and requested EPA provide any matters for consideration by the Proponent on the 8 March 2017.

EPA has reviewed Proposed MOD 3 and comment that the proposal is generally consistent with the activities as licenced in Environment Protection Licence 6229, which regulates ELF Farm Supplies Pty Ltd scheduled activities at 108 Mulgrave Road, Mulgrave.

Proposed MOD 3 notes that the changes to site details are limited to the acoustic walls. Proposed MOD 3 also refers to the retroactive approval of a constructed tree corridor; a request to rescind the riparian management zone requirement and the construction of a second asset fire protection wall.

EPA requests that the Proponent provide assessment of the following matters when producing the Environmental Assessment to support the proposed modification.

Acoustic Walls - Noise Impact Assessment
The Environmental Assessment should provide advice produced by a suitably qualified and experienced consultant that assesses the proposed modified Acoustic Wall in accordance with the requirements of the EPA Industrial Noise Policy.

The consultant should include consideration as to whether the last approved Noise Impact Assessment accurately reflects the existing noise conditions at the Premises and surrounding properties. Is a new Noise Impact Assessment required to properly assess the effectiveness of the Acoustic Wall?

PO Box A290 Sydney South NSW 1232
59-61 Goulburn St Sydney NSW 2000
Tel: (02) 9995 5000 Fax: (02) 9995 5999
TTY (02) 9211 4723
ABN 43 692 285 758
www.epa.nsw.gov.au

Tree Corridor – Retroactive Approval
The Proposed Modification seeks to obtain retrospective approval for the construction of the tree corridor. The tree corridor includes an earthen mound constructed of "material that had previously been stripped from the biofilters pad, the western end of the biofilters area and material validated as excavated natural material…" The Proposed Modification also seeks to obtain approval for the addition of fill material in the bale storage area (Section 2 of the Proposed Modification).

The importation of ENM material for application to land requires consent from the relevant planning authority for that activity. The proponent should provide sufficient evidence to demonstrate that the application of these materials to land is:

- appropriate for the proposed use; and
- lawful.

No further matters for assessment.
The EPA does not have an approval role with regard to the riparian zone or the fire wall and will not be assessing these issues.

Enquiries regarding these matters
Should you have any queries regarding these matters please contact Mr Damien Rose on 9995 5586.

Yours sincerely

Trevor Wilson
Unit Head Waste Compliance
Environment Protection Authority

NSW GOVERNMENT | Department of Primary Industries

OUT17/12233

Ms Emma Barnet
Industry Assessments
NSW Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

Emma.barnet@planning.nsw.gov.au

Dear Ms Barnet

Elf Mushroom Farm (MP 08_0255 MOD 3)
Request for Secretary's Environmental Assessment Requirements (SEARs)

I refer to your email of 8 March 2017 to the Department of Primary Industries (DPI) in respect to the above matter. Comment has been sought from relevant divisions of DPI. Views were also sought from NSW Department of Industry - Lands that are now a division of the broader Department and no longer within NSW DPI.
Any further referrals to DPI can be sent by email to landuse.enquiries@dpi.nsw.gov.au.

DPI has reviewed the SEARs application and provides the following comments and recommendations:

- It is important that an adequate riparian buffer for South Creek be maintained on this site for a number of reasons, including:
    - A managed riparian area enables the capture of nutrients and stabilisation of banks to protect against sedimentation which assists to improve water quality for aquatic ecology, downstream agricultural irrigation, and stock watering.
    - There is evidence that trees can disperse odour therefore a vegetated riparian area could assist to limit any odour movement towards the South Windsor residents, an important consideration to mitigate land use conflict for this project.
    - South Creek is an important Class 1 major key fish habitat with the potential to affect the ecology of adjacent waterways.
    - The SEARs application report identifies South Creek as a second order stream. It should be noted that, at the project location, South Creek is a sixth order stream.
    - The proposed riparian buffer would be significantly inconsistent with the *DPI Water Guidelines for Controlled Activities (2012)* and *DPI Fisheries Policy and guidelines for fish habitat conservation and management (2013)*.
- In order to enable DPI to properly assess and advise on the proposed modification the Environmental Assessment should include a detailed justification for the proposed reduction to the riparian buffer zone along South Creek, including:
    - Scaled Plans which show:

    - South Creek and the top of bank
    - The riparian corridor width to be established along the creek in accordance with DPI Water guidelines;
    - the site boundary, the footprint of the proposal in relation to the creek and riparian corridor; and
    - proposed location of any asset protection zones.
- Photographs of South Creek and a map showing the point from which the photos were taken.
- A detailed description of all potential impacts on the creek/riparian land.
- A description of the design features and measures to be incorporated to mitigate potential impacts.
- Geomorphic and hydrological assessment of water courses including details of stream order (Strahler System), river style and energy regimes both in channel and on adjacent floodplains.
- A Vegetation Management Plan for the rehabilitation of riparian vegetation consistent with the DPI Water Guidelines.
- Clear analysis and comparison of the proposal with respect to the relevant DPI policies & guidelines, mentioned above.

Yours sincerely

Mitchell Isaacs
Director, Planning Policy & Assessment Advice
22 March 2017

DPI appreciates your help to improve our advice to you. Please complete this three minute survey about the advice we have provided to you, here:
https://goo.gl/o8TXWz

Emma Barnet

From: Andrew Johnston <Andrew.JOHNSTON@hawkesbury.nsw.gov.au>
Sent: Wednesday, 29 March 2017 2:56 PM
To: Emma Barnet
Subject: RE: Environmental Assessment Requirements for a modification request to Elf Mushroom and Substrate Plant Project (08_0255 MOD 3)

Categories: Objective

Dear Emma,

Reference is made to your request for comments regarding any environmental assessment requirements for the proposed modifications to the Part 3A Approval for the mushroom substrate plant at 108-112 Mulgrave Road, Mulgrave. It is understood the proposed modification seeks to:

- preserve the existing tree corridor on the southwest side of the project site;
- remove the riparian management zone requirement;
- modify the dimensions of the acoustic noise wall; and
- construct an asset fire protection wall.

The following comments are provided to assist in the development of the Secretary's Environmental Assessment Requirements (SEARs) the that would need to be addressed in the future application:

1. With respect to noise, the supplied report states:

   The dimensions of the acoustic wall are as follows; the length will run East to West for approximately 135m, the North to South return will be approximately 60m and a small return in the South-West approximately 20m in length. The approximately 20m return will step up from approximately 8m to approximately 4m along its length. The acoustic wall will be approximately 4m above current platform height and 1m in the perimeter from the boundary and current fence line.

   An Acoustic Report and specific details of the acoustic wall will need to be provided. The report will need to address what was previously approved and demonstrate that the proposed changes will satisfy the relevant noise criteria.

2. There appears to be little justification for the deletion of the required riparian corridor.

   Firstly, the supplied report states that South Creek is a 2nd order stream at the site, but provides no evidence for this claim. Based on the Strahler stream classification system, it would be classified as a minimum 3rd order or more likely 4th order stream depending on where the headwaters are taken from. This supports the requirement of a 35m wide riparian zone.

   In the report's Bibliography the author lists a USDA NRC report on 'Corridor Benefits'. This report states "*Stream/riparian corridors and attendant wetlands in floodplains provide floodwater storage, desynchronize flood flows and slow flood velocities. Downstream flooding and the potential for flood damage are diminished when floodwater volume and velocity are reduced. Stream banks stabilized by the roots of riparian vegetation reduce bank erosion, a major source of sedimentation in some streams.*" This is exactly the situation at the subject site, which again supports the requirement for a riparian corridor.

   The supplied report further references a NSW OoW Report card for South Creek however that report has no relevance as it relates to a South Creek that drains into the Nambucca River, not the South Creek that is adjacent to the site.

   Council is of the view that the requirement for a 35m wide riparian management zone should be retained and is fully justified to minimise and mitigate the potential pollution of South Creek.

It is understood that the Environment Protection Authority may have had recent dealings with Elf Farm Supplies and it is requested that any application is also referred to this Department for comment.

Regards,

Emma Barnet

From: Stephen Schreiber <Stephen.Schreiber@fire.nsw.gov.au>
Sent: Wednesday, 15 March 2017 11:26 AM
To: Emma Barnet
Subject: Re: Elf Farm Supplies - 08_0255 MOD 3

Hi Emma,

Thank you for the additional information you sent on Monday. However before any formal comment can be made in respect to your request FRNSW requires additional information.

This is in relation to -

Was there an Environmental Impact Assessment (EIA) completed in the initial application and if so could you please provide.

In the attached Modification documents Figures 1 and 3 depict an Asset Fire Protection Wall to cordon off the diesel fuel storage area and weighbridge from fire. However the Site Plans marked Drawings No 200689 and 200690 depict this wall as an acoustic wall only which conflicts. The details of this wall are non existent , i.e. Fire Resistance Levels (FRL) which would differ from acoustic to fire resistant.

In Modification to Schedule 3: Condition 21 - " In addition , an asset fire protection wall is proposed to cordon off the diesel fuel storage cell and the weighbridge of a fire". Additionally " For asset integrity and fire planning purposes , it is intended that the current platform be backfilled for the North to South return of the acoustic wall (as shown in figure 3) to allow for a hydrant line to run along the inside of the North-South return of the acoustic wall". No details for said hydrant line provided , i.e. Hydrant Standards utilised for design to provide size , dimensions , flow, pressure ,water supply, access for use by firefighters .

Regards,
Steve Schreiber

Fire Safety Branch
Fire Safety Administration Unit
Community Safety Directorate

E bfs@fire.nsw.gov.au | **T** 02 9742 7434 | **F** 02 9742 7483 | **www.fire.nsw.gov.au**
| Amarina Avenue, Greenacre NSW 2190

From:

Emma.Barnet@planning.nsw.gov.au <Emma.Barnet@planning.nsw.gov.au>
Sent: Monday, 13 March 2017 2:50:06 PM
To: Stephen Schreiber
Subject: RE: Elf Farm Supplies - 08_0255 MOD 3

Hi Steve,

Appendix B

PLANS, ELEVATIONS AND SURVEYS FOR PROPOSED BARRIERS

MGA CO-ORDINATES
E298040
N 6277630

M.G.A. NORTH

Boundary

STORMWATER RETENTION BASIN

MGA CO-ORDINATES
E298748
N 6277524

DAM

WINDSOR

HAWKESBURY VALLEY WAY

RTA SERVICE ROAD

SYDNEY

Mulgrave Road

Boundary

Boundary - South Creek

10m FLOOD PLAIN

PHASE 2/3 BUILDING No 2

SHED 4

SHED 5

LOADING DOCK

BLOCKING SHED

TRACTOR SHED

PHASE 2/3 BUILDING

SHED

WORKSHOP MACHINERY SHED

OFFICES

existing trees

DAM

PRE-WET TUNNEL BUILDING

STABLE BEDDING

PHASE 1 TUNNELS

CARPORT

WEIGHBRIDGE

GENERAL ACCESS ROAD

EXISTING FUEL BOWSER

GATE

EXISTING HOUSE

PRE-WET SHED

BALE WETTING AREA

RAW MATERIALS ENCLOSURE

PROPOSED WALLS
existing bale storage area

GATE

FLOOD ACCESS ROAD

PLANTROOM

BIOFILTER

MATERIALS STORAGE

Boundary

Boundary

Boundary

Boundary

PROPOSED WALL TO BE APPROXIMATELY 400mm FROM BOUNDARY

BLACKTOWN TO RICHMOND RAILWAY LINE

0 100m

SITE PLAN

ISSUE	DATE	AMENDMENTS

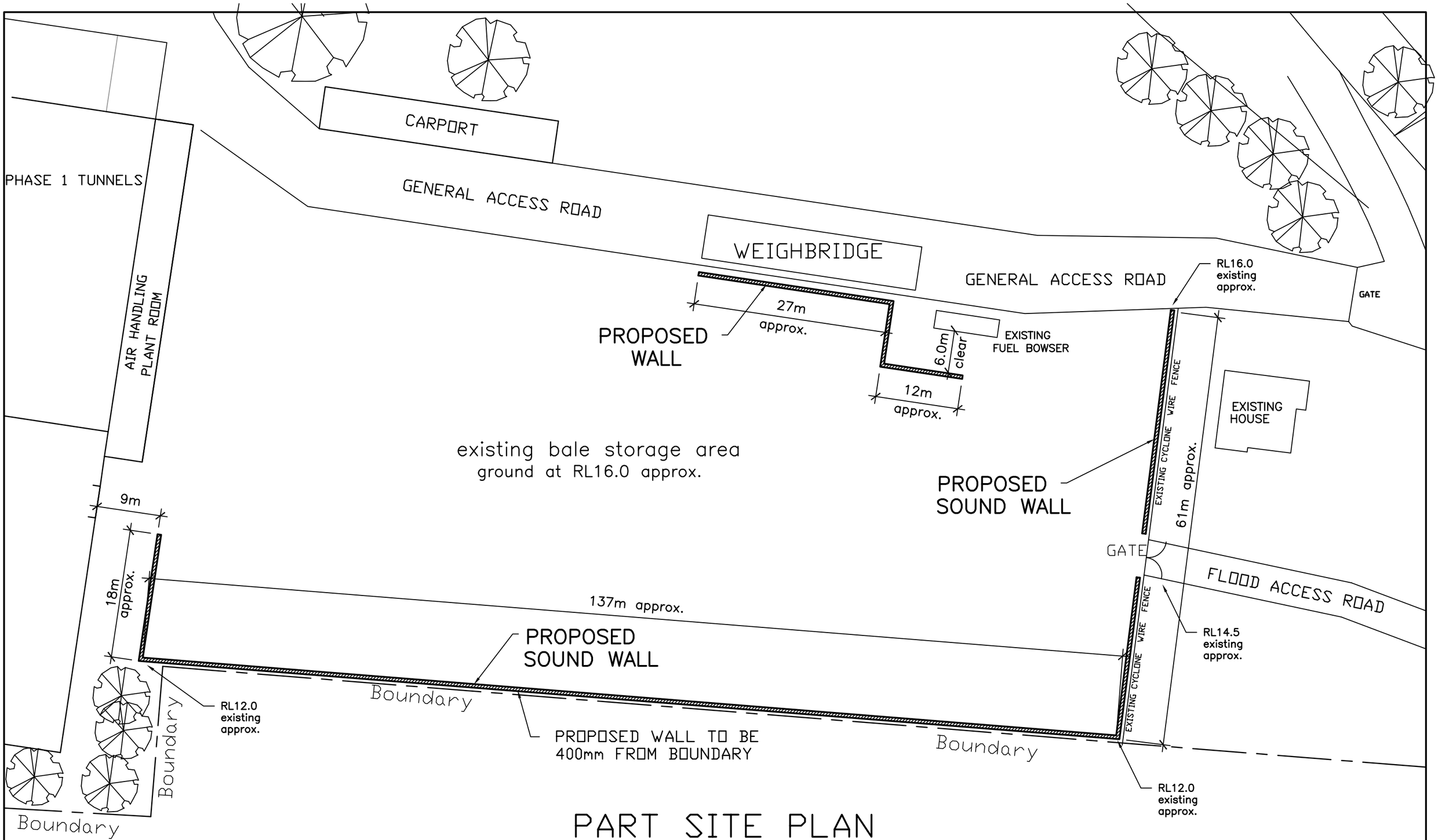
ABODE DESIGN
PO BOX 767 RICHMOND
PH. 4776 1125 0419 405006

DRAWN	DATE DRAWN	SCALE
I.S.	23.2.2017	1:2000 at A3

PROPOSED PERIMETER WALLS
SITE PLAN

ELF FARM SUPPLIES PTY LTD
P.O.BOX 615 WINDSOR NSW 2756
108 MULGRAVE ROAD MULGRAVE NSW 2756
TEL.ISD (61)02 45775000 FAX.ISD (61)0245878002

DRAWING NO.	ISSUE
200689	A



PART SITE PLAN

BLACKTOWN TO RICHMOND RAILWAY LINE

0 — 50m

ISSUE	DATE	AMENDMENTS

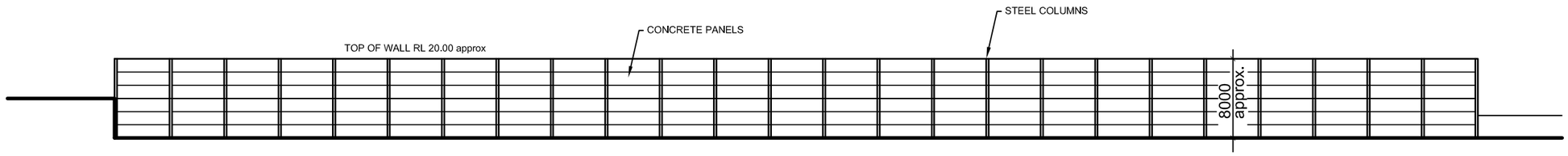
ABODE DESIGN
PO BOX 767 RICHMOND
PH. 4776 1125 0419 405006

DRAWN	DATE DRAWN	SCALE
I.S.	23.2.2017	1:500 at A3

PROPOSED PERIMETER WALLS
PART SITE PLAN

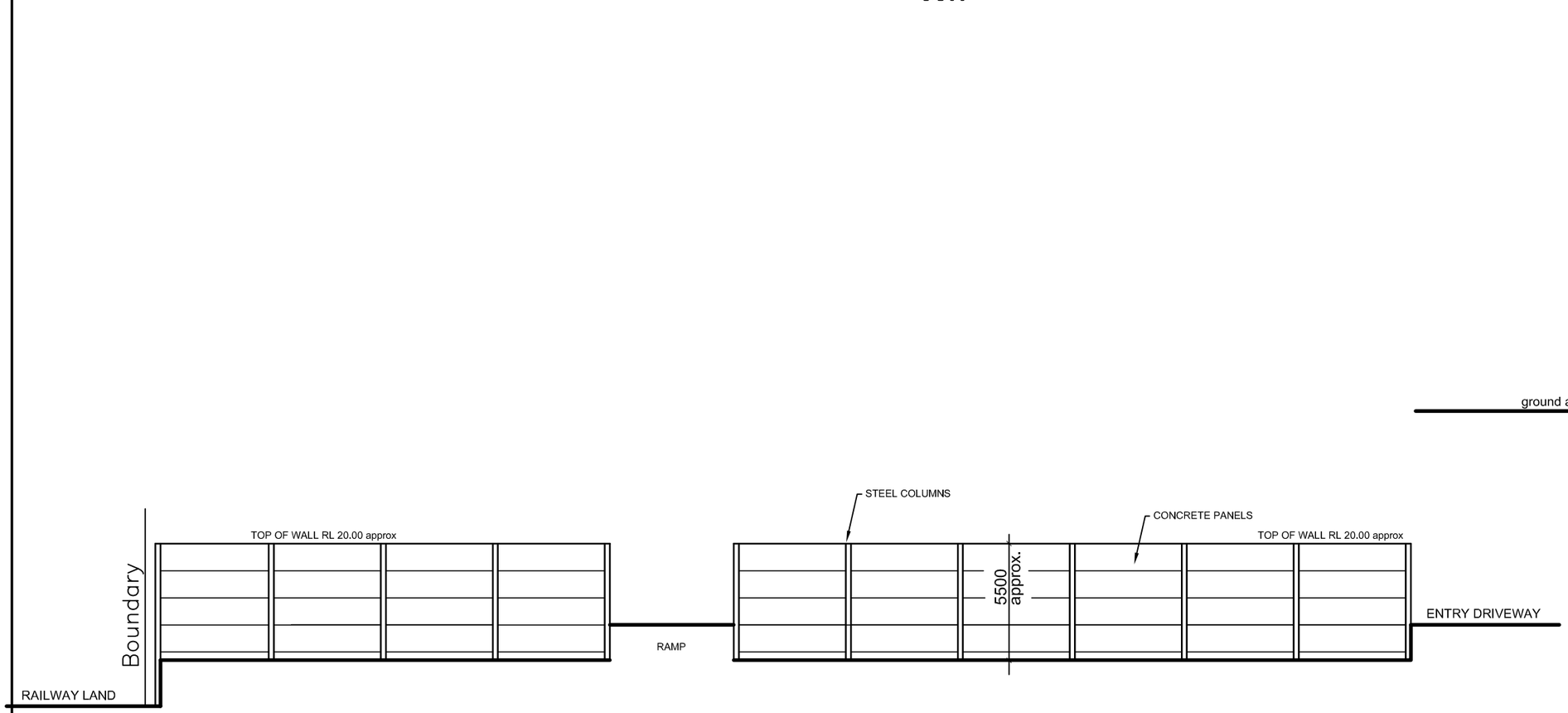
ELF FARM SUPPLIES PTY LTD
P.O.BOX 615 WINDSOR NSW 2756
108 MULGRAVE ROAD MULGRAVE NSW 2756
TEL.ISD (61)02 45775000 FAX.ISD (61)0245878002

DRAWING NO.	ISSUE
200690	A



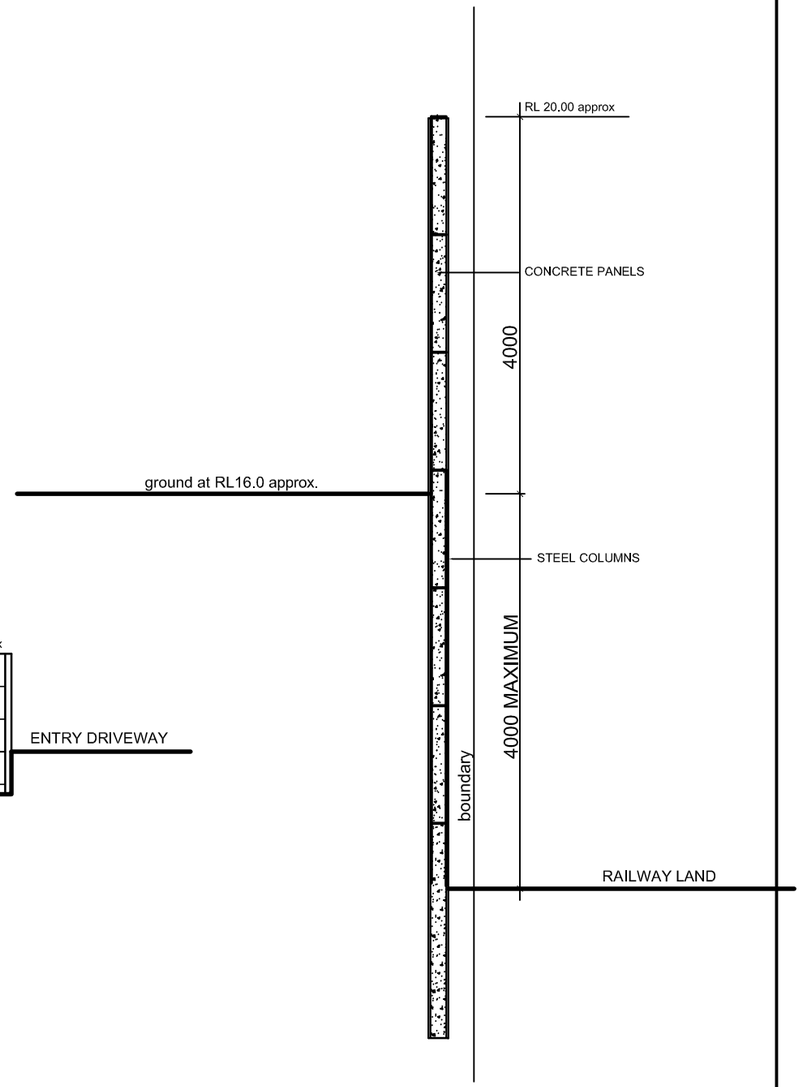
SOUTH ELEVATION

1:500



EAST ELEVATION

1:250



TYPICAL SECTION

ISSUE	DATE	AMENDMENTS

ABODE DESIGN
PO BOX 767 RICHMOND
PH. 4776 1125 0419 405006

DRAWN	DATE DRAWN	SCALE
I.S.	23.2.2017	as shown at A3

PROPOSED SOUND WALL
ELEVATIONS AND SECTION

ELF FARM SUPPLIES PTY LTD
P.O.BOX 615 WINDSOR NSW 2756
108 MULGRAVE ROAD MULGRAVE NSW 2756
TEL.ISD (61)02 45775000 FAX.ISD (61)0245878002

DRAWING NO.	ISSUE
200691	

PART LOT 13 DP 1138749

LOT 19 DP 1138749

DP 1138749

LOT 20

LOT 14

DP 1138749

BLACKTOWN RICHMOND RAILWAY

PROJECT DETAIL SURVEY OF PART OF ELF FARM PTY LTD 108 MULGRAVE ROAD MULGRAVE	Scale 1:400	Designed	WARREN F.COLE Registered Surveyor 95 CALABASH ROAD ARCADIA N.S.W. 2159 Ph. 9655 1111 B.Surv M.I.S. N.S.W.	PRINCIPAL ELF FARM PTY LTD	Sheet no. 1 of 1 sheets
	Datum A.H.D.	Drawn W.F.C			Our Ref.
	Date 12-05-2017	Checked			
	COUNCIL	Council Ref.			

PART LOT 13 DP 1138749

DRIVEWAY

CONCRETE

DP 1138749 LOT 20

WEIGHBRIDGE

AREA TO BE FILLED
TO RL 16.0

VOLUME OF FILL 2250 CUBIC METRES

LOT 14
DP 1138749

BLACKTOWN

RICHMOND

RAILWAY

N

PROJECT PLAN OF AREA TO BE FILLEDAT ELF FARM PTY LTD 108 MULGRAVE ROAD MULGRAVE	Scale 1:400	Designed	WARREN F.COLE Registered Surveyor 95 CALABASH ROAD ARCADIA N.S.W. 2159 Ph. 9655 1111 B.Surv M.I.S. N.S.W.	PRINCIPAL ELF FARM PTY LTD	Sheet no. 1 of 1 sheets
	Datum A.H.D.	Drawn W.F.C			
	Date 12-05-2017	Checked			Our Ref. 309SBF
	COUNCIL	Council Ref.			

Appendix C

FLOOD ASSESSMENT

Mr Rob Tolson
ELF Farm Supplies Pty Ltd
108 Mulgrave Road
MULGRAVE NSW 2050

22 January 2018

Dear Mr Tolson,

Re: Earthworks at 108 Mulgrave Road NSW 2050

This letter provides comment on the flood impact of earthworks at the above referenced site.

Figure 1 attached shows the location of:

- Filling associated with a tree corridor that has been implemented. The quantity of fill is estimated at 4,100 m^3; and
- Filing associated with a bale storage area/noise wall that is proposed at the front of the premises. The quantity of fill is estimated at 2,250 m^3.

BACKGROUND

The site and the general vicinity is flood liable, with peak flood levels caused by events that combine Hawkesbury River and South Creek flooding. Due to the flood liability, a previous development proposal was required to be assessed for potential flood impact. A previous report documenting this assessment was provided by WMAwater in 2009. This formed part of a 2010 Environmental Assessment. The extent and volume of fill examined in the 2009 modelling study was 1.6 ha and 58,000 m^3 respectively. The impact of these works on 1% AEP flood levels was found, by detailed hydraulic modelling analysis, to be 0.00 m.

Subsequently the proponent has slightly modified the overall earthworks plans. These modifications were addressed in a letter from WMAwater dated 21 January 2016. This letter indicated that overall fill extent and volume was less than that approved, and not being placed in an area of flow, impact would be as per indicated by the 2009 study, that is, no impact.

A further amendment to site plans is now proposed with the enlargement of a bale storage area at the front of the plant with some fill also to facilitate a noise wall. The Department of Planning has asked for

> "…an assessment of the offsite flood impacts of filling in the flood plain (include both the fill associated with the landscaped mound and fill that would be placed to accommodate the noise wall)."

Stephen Gray
Director
gray@grchydro.com.au
0413 631 447

Zac Richards
Director
richards@grchydro.com.au
0432 477 036

GRC Hydro
ABN: 71 617 368 331
www.grchydro.com.au

Further the Department of Planning indicated that approval should be sought for the fill placed for the tree corridor, although comment was provided on these works in WMAwater's letter of January 21th 2016.

This letter provides advice on the flood impact of:

- Filling associated with a tree corridor that has been implemented. The quantity of fill is estimated at 4,100 m^3; and
- Filling associated with a bale storage area/noise wall that is proposed at the front of the premises. The quantity of fill is estimated at 2,250 m^3.

PROPOSED WORKS

Figure 1 indicates the area where 4,100 m^3 of fill has been placed to facilitate tree planting. To be clear this is fill that is currently in-situ.

Figure 1 also indicates the area to the east, at the front of the plant, where a noise wall is to be built and where enlargement of the bale storage area is proposed. In total the fill volume associated with these planned works is estimated at 2,250 m^3.

FLOOD IMPACT

As noted earlier, previous impact modelling work in 2009 via a detailed (and calibrated) hydraulic model, showed that flood levels are relatively insensitive to filling works at the plant area. To some degree this is likely due to the fact that proposed fill is in the lee of the upstream railway embankment and not in proximity to the creek.

On the basis that; the proposed works do not exceed the modelled fill volume (WMAwater, 2009) it is concluded that the proposed works will not result in an impact on design flood behaviour at the site or elsewhere.

Yours Sincerely

GRC Hydro

Steve Gray
Director

Figure 1 – Overall Site and Areas of Fill

Aerial Photograph (July 2017)

Mr Rob Tolson
ELF Farm Supplies Pty Ltd
108 Mulgrave Road
MULGRAVE NSW 2050

L_160121_108_Mulgrave_Rd_flooding.docx

January 21st 2016

Attention: Mr R Tolson

Dear Mr Tolson,

Re: Earthworks at 108 Mulgrave Road Mulgrave NSW 2050

This letter provides comment on the flood impact of earthworks carried out at the above referenced subject site. The location of the earthworks is toward the western side of the existing plant. Figure 1 attached shows the earthworks in question (hatched).

BACKGROUND

Development in addition to existing facilities on the site has previously been approved and this relates primarily to an upgrade of the existing plant and surrounding facilities. The proponent has subsequently slightly modified the detail of the proposed development by filling in areas not previously specified, but well within overall approved fill area restrictions. This letter makes comment on the flood impact of the altered earthworks layout. Note additional filling works are still to occur, although no net increase is envisaged relative to the approved fill area.

The site and the general vicinity is flood liable, with peak flood levels caused by events that combine Hawkesbury River and South Creek flooding. Due to the flood liability the proposed development was required to be assessed for potential flood impact. WMAwater previously produced a report (WMAwater, 2009) that documents work done to assess the flood impact of the proposed works. This formed part of a 2010 Environmental Assessment. WMAwater's modelling work looked at 1.6 hectares of filling (equating to an estimated fill volume of approximately 58,000 m^3).

Webb, McKeown & Associates Pty Ltd (trading as WMAwater)

ABN 50 366 075 980

DIRECTORS
M K Babister BE(Hons), MEngSc GradDipMgt, FIEAust
R W Dewar BSc(Hons), MEngSc, MAIG, MIEAust
E J Askew BE(Hons), MIEAust
S D Gray BE, MEng

ASSOCIATES
R Hardwick Jones BE(Hons), MEngSc, MIEAust
M E Retallick BE(Hons), BSc, MIEAust

Level 2, 160 Clarence St, SYDNEY NSW 2000
Phone: 02 9299 2855 Fax: 02 9262 6208
Email: enquiry@wmawater.com.au
Website: wmawater.com.au

SITE VISIT

Modified earthworks (as noted by the hatched area in Figure 1) were inspected on December 3rd 2015. The following observations were made:

- An area proposed for a bio-filter has been filled to a height of ~ 7 m above natural surface. This area is located in the lee of the railway embankment and so does not in any way impede South Creek flows as they move toward the Hawkesbury River. Impact is limited to a minor loss of floodplain storage; and
- Another area west of the higher fill area and downstream of the dam, that links planted areas on the downstream face of the railway embankment with remnant vegetation on the site, has been filled to a minor extent in order to facilitate the planting of native trees. This will link existing site vegetation and aid screening of the plant equipment.

DISCUSSION

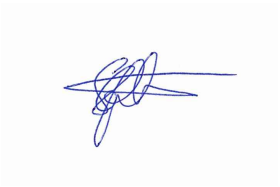
WMAwater's work of 2009 examined the impact of filling works with a total area of approximately 1.6 ha and an estimated volume of 58,000 m^3. The impact of these works on peak flood level was found to be 0.00 m.

Whilst works considered herein vary from those specifically approved, the overall area of floodplain filling carried out, which is the key issue here in regard to flood level affectation, is less than that approved. An estimate of the total area filled to date is approximately 1.1 ha. Note much of the filling has also occurred in areas where less fill depth is required to reach the required level, and as such the actual volume of fill put in place to date will be substantially less than that approved.

As such WMAwater's work of 2009 remains pertinent. The filling earthworks carried out are less than as assessed in 2009 and as such do not impact on peak 1% AEP flood levels.

Should you have any queries or require further clarification please do not hesitate to contact me on 9299 2855 or varga@wmawater.com.au

Yours Sincerely,
WMAwater



Stephen Gray
Director

FIGURE 1

NORTH

Appendix D

NOISE ASSESSMENT

Acoustic Consulting Engineers
Sound and Vibration Consulting Engineers
ABN 44 133 737 443

www.AcousticConsulting.com.au

Acoustic Consulting Engineers Pty Ltd
PO Box 3450
PUTNEY NSW 2112
Telephone: +61 (0) 2 8006 5560
Facsimile: +61 (0) 2 8006 5559
info@AcousticConsulting.com.au

Thursday 12 January 2017

Elf Farm Supplies Pty Ltd
108 Mulgrave Road
MULGRAVE NSW 2756

Our Reference 160787-01-01L-CF

For the attention of Neil Cockerell

Acoustic Review and Assessment
Southern Acoustic Barrier
Mulgrave Substrate Plant, Mulgrave

1.0 INTRODUCTION

Acoustic Consulting Engineers Pty Ltd were engaged by Elf Farm Supplies Pty Ltd to review the acoustic requirements for the southern acoustic wall encompassing the bale storage area to the east of the Mulgrave substrate plant.

In order to review the requirements of the wall, Acoustic Consulting Engineers Pty Ltd has reviewed previous documentation, drawings, noise modelling and reporting to provide the context and background to the original acoustic wall specification and to inform an alternative design. Additional site attended noise measurements and calculations have been prepared by Acoustic Consulting Engineers Pty Ltd to support changes to the recommendations for the southern acoustic wall.

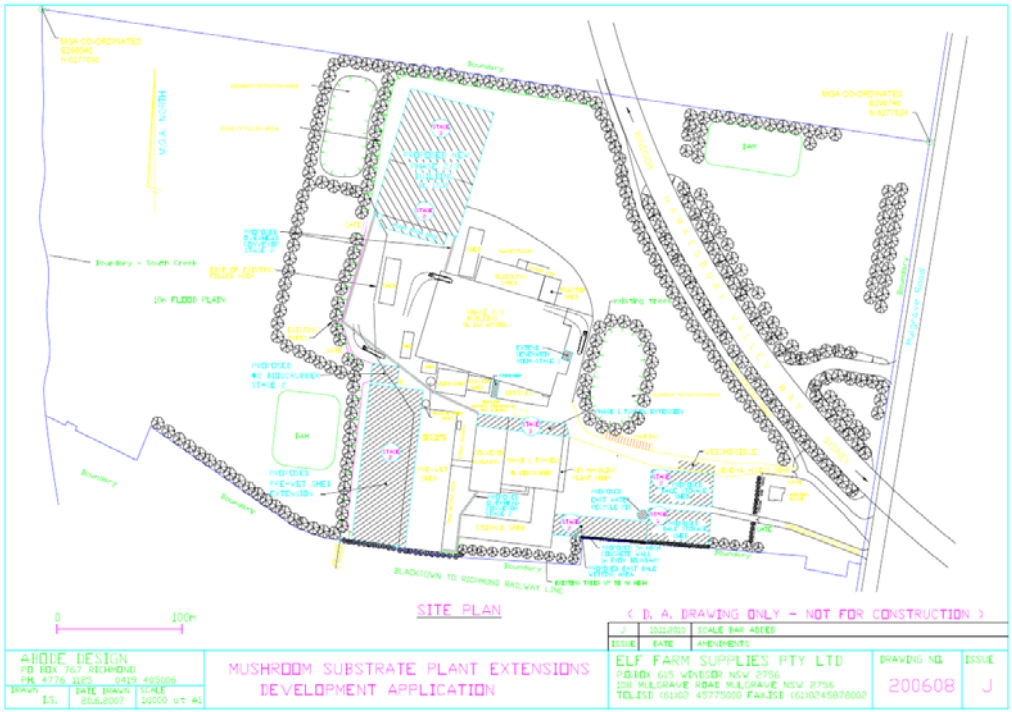
2.0 BACKGROUND

2.1 Expanded Operations - 2010

Elf Farm Supplies Pty Ltd submitted an application to the Department of Planning for the expansion of the Mulgrave Substrate Plant in 2010. Atkins Acoustics (Carl Fokkema) prepared an *'Operation and Construction. Noise Impact Assessment. Mushroom Substrate Plant. Mulgrave'* Report No. 40.6411.R1:CFCD4 Rev03 dated June 2010 to accompany the application.

The 2010 noise modelling and assessment relied on information provided by Elf Farm Supplies Pty Ltd, Perram and Partners and Abode Design (Drawing No.: 200608 Issue J). A review of the concept drawing identified a seven (7) metre high wall extending from the bale storage sheds west towards the raw materials storage area. The purpose of this wall was to provide structural support for a boom watering system for pre-wetting of the straw bales prior to processing. The acoustic assessment adopted this acoustic wall for the noise modelling, rather than the acoustic assessment recommending a specific wall height.

Figure 1: Site Layout (Drawing No. 200608 Issue J)



A review of the 2010 noise modelling confirmed that a six (6) metre high acoustic wall was incorporated into the noise model to provide a conservative approach and adopted the continuous use of a Komatsu WA320 front end loader with a measured operating sound power level of Lw 104dB(A) for day, evening and night use.

The development was approved Department of Planning and Infrastructure (11 January 2012) under Application No. 08_0255.

2.2 Amended Operations - 2014

In 2014, following ongoing development and review of best available technologies including odour control, Elf Farm Supplies Pty Ltd proposed to modify the approved development in order to increase efficiencies in site operations and provide improved odour control facilities.

The changes are principally constrained to the western portion of the site and occupy the area that was to accommodate the approved pre-wet shed expansion. In line with current best available technology for the production of mushroom substrate, it is proposed to modify the method of production from an open mixing shed to enclosed processing within tunnels. This process would allow for the existing Blender, previously identified and ranked as a significant noise source to overall site noise emissions to be de-commissioned.

The existing bio-scrubber system and approved second bio-scrubber would be replaced with a new emissions plant including ammonia scrubbers and bio-filter. Additional ancillary components of the development include enclosure of the

existing raw material yard, a bale breaking line, enclosed conveyer systems and ducted ventilation systems.

No changes to the bale storage area or equipment utilised in this area were proposed, accordingly the assessment adopted the 2010 recommendations with respect to this area. The results and findings of the assessment prepared by Atkins Acoustics (Carl Fokkema) were presented in the *'Preliminary Acoustic Review. Amended Operations. Mushroom Substrate Plant. Mulgrave'* Report No. 45.6932.L2:CFCD7 dated 17 February 2015.

2.3 Current Operations – 2014-2017

Elf Farm Supplies Pty Ltd (Neil Cockerell) negotiated with the Department of Planning to delay the construction of the southern acoustic wall adjacent the bale storage area and proposed that a 'temporary acoustic barrier' be constructed around the perimeter of the bale storage area to the south and east comprising of stacked straw bales to a nominal height of 3.6m (RL19.6) above finished ground level (RL16) in storage area. Elf Farm Supplies Pty Ltd has also advised that the construction of the bale storage sheds would not proceed at this time.

Acoustic Consulting Engineers Pty Ltd was advised by Elf Farm Supplies Pty Ltd (Neil Cockerell) that the site has generally operated with a stacked straw bale wall to a nominal height of 3.6m around the perimeter (south and east) of the bale storage area for the last six (6) years without a noise complaint. In addition site attended operational and construction noise audits have been conducted and identified no exceedances of noise limits.

3.0 PROPOSAL

Elf Farm Supplies Pty Ltd is seeking to clarify and modify the southern acoustic wall requirements and reduce the wall height from the seven (7) metres, which was proposed for structural reasons to support the bale pre-wet boom system. The 2012 approved eastern external bale wetting area as identified in Dwg 200608 J is no longer required (as noted in the 2015 Mod 1 EA).

Acoustic Consulting Engineers Pty Ld has provided a review and assessment of the requirements of the southern acoustic wall in order to satisfy project noise goals and operational noise criteria as outlined in Condition 19 of Application No. 08_0255 approved by Department of Planning and Infrastructure, specifically:

Operational Noise Criteria

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

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

Receiver / Location	***Day/Evening*** $L_{Aeq\ (15\ minute)}$	***Night*** $L_{Aeq\ (15\ minute)}$
R1 – 46 Mulgrave Road, Mulgrave	*42*	*42*
R2 – Mulgrave Industrial Area		
R3 – 2 Railway Road, Mulgrave		
R4 – 126 Mulgrave Road, Mulgrave	*44*	*39*
R5 – Chisholm Place, South Windsor		

Notes:

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

We were also advised that the Komatsu WA320 no longer operates on this site, and bale unloading and transfer to buildings now utilises a Hyundai HL757-9 or Liebherr 550 front end loader.

4.0 NOISE ASSESSMENT

Acoustic Consulting Engineers Pty Ltd attended the Mulgrave Substrate Plant to conduct site audit measurements during normal bale unloading and stacking operations utilising the Hyundai HL757-9 and Liebherr 500 front end loaders. The results of the measurements confirmed normal operational L_{Aeq} sound power levels of Lw 98dB(A) and 97dB(A) respectively, including reversing beepers.

The current front end loaders operating noise levels are 7-8dB lower that the Komatsu WA320 loader previously operating in this area and considered in the 2010 and 2014 noise assessments. A review of the attenuation provided by a four (4) metre barrier compared to a seven (7) metre barrier for the closest receivers confirmed a difference of 4dB. The lower attenuation provided by the reduced barrier height is more than compensated by the lower source noise levels from the front end loaders operating in this area.

In light of the loader source noise levels, Acoustic Consulting Engineers Pty Ltd has considered a nominal acoustic barrier height of four (4) metres above finished bale storage level (RL16) resulting in an acoustic barrier along the southern and eastern sides of the bale storage area with a nominal RL20.

Considering distance separation (FEL at closest and farthest positions in storage area) and shielding by proposed acoustic barrier, noise level contributions predicted to the closest receivers are:

R3 – 2 Railway Road, Mulgrave	$L_{Aeq,15min}$	30-33dB(A)
R4 – 126 Mulgrave Road, Mulgrave	$L_{Aeq,15min}$	33-37dB(A)

For comparison purposes the predicted noise level contributions for use of the Komatsu WA320 with a seven (7) metre barrier are in order of 34dB(A) at R3 and 37dB(A) at R4 respectively.

5.0 FINDINGS and RECOMMENDATIONS

The results of the site attended noise audits and noise level contribution predictions confirm that the noise limits (Condition 19 - Application No. 08_0255) can be readily be achieved at the closest receiver locations identified as R3 – 2 Railway Road, Mulgrave and R4 – 126 Mulgrave Road, Mulgrave.

The predicted noise contributions are also lower than the equivalent noise levels for the operation of the Komatsu WA320 with a seven (7) metre high acoustic barrier.

The original seven (7) metre high barrier as documented on Abode Design Drawing No.: 200608 Issue J was intended to provide structural support to the bale wetting boom equipment. The height of this wall was not driven by acoustic requirements, and the concept wall height was simply adopted in the 2010 and 2014 noise assessments. As the eastern external bale wetting area as identified in Dwg 200608 J is no longer required, accordingly the height of the acoustic wall to the south and east of the bale storage area could be amended.

Based on the findings of this acoustic review and assessment, we recommend the following:

- Bale unloading, storage and transfer of bales within the bale storage area utilise the existing Hyundai HL757-9 and Liebherr 550 front end loaders, or equivalent loaders with an operating sound power level of not more than L_{Aeq} Lw98dB(A);
- Existing reversing beepers on loaders be replaced with broad band level varying ‘quacker’ reversing alarms; and
- Acoustic wall (Hebel, precast concrete or equivalent) be constructed to the south (adjacent southern boundary) and east edge of the bale storage area not less than four (4) metres above finished ground level of area (nominally RL16) resulting in a nominal barrier height of RL20.

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

Yours sincerely,

Carl Fokkema
Senior Acoustic Engineer
Acoustic Consulting Engineers Pty Ltd