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Environmental Assessment



Hunter Valley Liquid Waste

Prepared for: Enviroking
Project No: 5989
Date: December 2009



Environmental Assessment

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Certification

SUBMISSION OF ENVIRONMENTAL ASSESSMENT Prepared under Part 3A of the Environmental Planning and Assessment Act 1979

PREPARED BY Name: Address:	Don Fox Planning Pty Ltd 11 Dartford Road, Thornleigh, NSW, 2120
DEVELOPMENT APPLICATION Applicant Name: Applicant Address: Land to be developed: Proposed development:	Enviroking Pty Ltd 843 John Renshaw Drive, Black Hill Lot 931 DP 816814 Enviroking Waste Facility Project - expansion of existing liquid waste management facility
ENVIRONMENTAL ASSESSMENT	An Environmental Assessment (EA) is attached which addresses all matters listed under Part 3A of the Environmental Planning and Assessment Act 1979.
CERTIFICATE Signature: Name: Qualifications: Date: 17 August 2009	We certify that we have prepared the contents of this EA and to the best of our knowledge: <ul style="list-style-type: none">• it contains all available information that is relevant to the environmental assessment of the development to which the EA relates; and• it is true in all material particulars and does not, by its presentation or omission of information, materially mislead.  <p>Roger Gain BSC(Eng) MIEAust</p>

Executive Summary

1. Introduction

Background

Enviroking has been operating the liquid waste disposal facility on a site at John Renshaw Drive, Black Hill near Cessnock pursuant to consent DA 118/697/181, issued by Cessnock City Council in November 1998. Enviroking treats liquid food wastes, grease trap arrestor wastes and industrial oily waters providing essential services to industry not provided by public authorities.

The facility was originally designed to handle a minimum of 15,000 tonnes per annum but the consent issued by Cessnock City Council included a condition restricting the total throughput to 5,000 tonnes per annum. A further condition required that all waste water disposal be done through the Hunter Water Corporation Sewerage System.

Enviroking has a licence from the Environmental Protection Authority to treat up to 15,000 tonnes per annum.

The current proposal is to increase the permitted throughput to 20,000 tonnes per annum, including revising the licence from the Environmental Protection Authority. Re-use (disposal) of the treated waste will be by land application (irrigation and direct injection) outside the site, but is not included in this application. No re-use will occur within the subject site.

As the proposal involves treatment of a total volume of liquid waste exceeding that listed in Schedule 3 of the Environmental Planning and Assessment Regulation 2000, the proposal will be assessed under Part 3A of the Environmental Planning & Assessment Act. Accordingly, the Department of Planning has issued Director General's Requirements for the project. The key issues identified in the Director General's requirements are:

- Air quality;
- Soil and water;
- Traffic;
- Waste management;
- Noise; and
- Visual

Consultation

Information about the proposal was provided to Cessnock City Council, the NSW Department of Environment and Climate Change and the NSW Roads & Traffic Authority. The NSW Roads & Traffic Authority required that a traffic study be undertaken and this is attached as **Appendix K**. No response was received from Cessnock City Council. Consultation with the NSW Department of Environment and climate Change to date (apart from its response to the Department of Planning's request for its requirements for the Environmental Investigation) has involved issue of an amended licence.

The immediate neighbours to the subject site were advised of the proposal, but no written responses were received.

2. Location and Subject Site

The site is located on the northern side of John Renshaw Drive at Black Hill, east of the Black Hill Road intersection, approximately 20 kilometres from Cessnock.

The property is bounded by John Renshaw Drive to the south, Bloomfield Collieries to the north and Donaldson Mine to the east.

The site comprises Lot 931 DP 816814 John Renshaw Drive, Black Hill having an area of 60.21 hectares. The treatment facility is located near the centre of the northern boundary of the property within an area of about 3.5 cleared hectares. The site is otherwise covered with native vegetation.

Pursuant to Item 8, Schedule 5 of Cessnock Local Environmental Plan 1989 (Amendment No. 43) the site is zoned to permit a waste water treatment facility within the 1(a) Rural "A" zone.

A 1000 metre buffer zone has been established around the Bloomfield mine site to the north, within which dwelling houses are prohibited.

The nearest dwelling is approximately 750 metres from the waste treatment facility.

3. Description of the Proposal

The waste treatment facility accepts greasy waste waters generally from restaurants, food halls, canteens etc, food wastes from various food processing industries, and oily waters from motor vehicle workshops. The waste materials are brought to the subject site using vacuum capable enclosed tanker trucks.

The facility services businesses in the Hunter Valley and the Central Coast. The only other existing facility in the area are the Trans Pacific/Cleanaway Treatment Facility at Kooragang Island and a small land application operation licensed under the POEO Act for grease trap and food waste at Elderslie near Singleton, which is not a treatment facility.

Description of the proposal

The objectives of the proposal are to reuse and treat a volume of up to 20,000 tonnes per year (385 tonnes/week) of liquid waste.

Food and grease trap waste is treated to allow the effluent water and food sludge to be reused by means of irrigation and land application respectively on nearby mine rehabilitation and agricultural land.

Oily industrial liquids are treated separately. Where possible mineral oil will be recovered and recycled to mineral oil recyclers, sludge, soil and grit will be dried and land filled, while treated waters will be re-used. Any contaminated effluent water that cannot be further treated will be disposed of at sewerage treatment plants operated by the Hunter Water Corporation.

The proposal includes minor expansion of the existing structures on the site and upgrading of the ventilation systems within the treatment building. The extension works will result in all treatment and loading areas being covered, such that any spillages will be contained.

When completed, the operation will employ a total of 12 people including drivers, operators, office staff and a manager.

No landscaping works are considered necessary, since the treatment facility is not visible from John Renshaw Drive or other external locations, being screened by the existing native vegetation.

Treatment process

Grease trap waste is treated by settlement with thickened sludge being transferred to a storage pit and water being decanted to a water treatment tank for further clarification by addition of flocculants and/or coagulants. Floating matter is optionally combined with the settled sludge or pumped to a heating refinement tank to extract vegetable oils for industrial biodiesel recycling. Water may be discharged for use as irrigation or if no suitable sites are available, transported to a sewage treatment plant. Settled sludge may be either taken directly for land application or may be further solidified by the application of lime and solidification through a decanter (industrial centrifuge) prior to land application.

Oily wastes are pumped into a separate oily water tank, or if containing high sediment loads into an open tank and allowed to settle. Water in this treatment tank may be treated with coagulants to separate suspended sediments, with the treated water being recycled if possible or sent to a sewage

treatment plant. Dried solid material is immobilised by mixing with an oil absorbent material and disposed of at a licensed land fill.

A throughput of 20,000 kilolitres per annum corresponds to 385 kilolitres per week, or approximately 70 kilolitres per day (allowing approximately 46 kilolitres per day on Saturday morning). Of the total approximately 6 to 10 kilolitres per day is expected to be oily waters.

Plant and machinery and energy usage

The business currently operates 5 tanker trucks including a 27 tonne semi trailer. The trucks both collect waste material from client businesses and transport treated liquid and sludge for reuse on mine rehabilitation and agricultural sites.

The plant includes various tanks and small pumps housed in a building.

There are no hazardous flammable substances, nor materials which will accumulate in the environment.

The facility uses very little energy with a total power consumption of 4kW for the pumps and 37kw for a centrifuge.

Operating hours

It is proposed to operate the plant 5 full days per week between 7:00am and 5:00pm with a half day on Saturday finishing at noon.

Access and parking

The site has excellent access from John Renshaw Drive via a gravel driveway which is sealed for a distance of approximately 35 metres from the intersection. There is adequate sight distance from the driveway along John Renshaw Drive in both directions.

The existing parking arrangements are considered to be satisfactory. The site is remote and does not compete with other industries for parking spaces.

Regulations

Reuse and recycling activities are subject to regulation as follows:

- Land application of food waste "Food Waste Exemption 2008";
- Land application of treated grease trap waste including water, sludge and solids – "The Treated Grease Trap Waste Exemption 2008"; and
- Treated effluent water "The Effluent Exemption 2008".

Plant capacity

The plant is demonstrated to have capacity to treat 75,000 litres for normal running or up to 95,000 litres per day by making use of a spare tank – refer to **Table 5**.

Time	Tank 1	Tank 2	Tank3	Spare Tank
7-9 am	Transfer to Spare	Empty	Empty previous nights treatment	Filling from Primary Tank 1
9 am	Tank filling	Tank filling	Empty	Tank full, lime dose and stir
11 am	Tank full, lime dose and stir	Tank full, lime dose and stir	Tank filling	Settling

Time	Tank 1	Tank 2	Tank3	Spare Tank
2 pm	Settling	Settling	Tank full, lime dose and stir	Empty Tank
4 pm	Empty tank	Empty Tank	Settling	Empty
Overnight	Empty	Empty	Settling	Empty
Treated Volume	25,000 litres	25,000 litres	25,000 litres	20,000 litres
		Normal Running	75,000 litres	
		Total with contingency		95,000 litres

Table 5 – Typical daily tank schedule

Environmental Management Plan

An Environmental Management Plan sets out guidelines for the safe reception, treatment and disposal of grease trap waste and oily waters in accordance with the requirements of the relevant Acts and regulations. The Environmental Management Plan includes controls for the wastes to be accepted, selecting appropriate sites, pre-application and post-application soil tests, advising site owners of agricultural controls and keeping records of incoming and outgoing loads. This plan will be updated to reflect any approval or conditions established by the current application procedures.

Traffic

The proposed increase in capacity of the facility is not considered to generate an increase in traffic that would have an adverse impact on road network or intersection capacity and the existing intersection is considered to be satisfactory.

4. Assessment of Key Environmental Issues

Planning controls

The proposal was assessed against the controls provided in the Cessnock Development Control Plan 2006 and was considered to comply with all relevant provisions, except for Clause C1.4 which requires the provision of formal parking spaces. Formal car spaces are not considered necessary in this instance.

The proposal was also assessed against the provisions of Cessnock Local Environmental Plan 1989 and was considered to comply with all relevant provisions. Note that the site is zoned to permit a waste water treatment facility under Amendment 43 of Cessnock LEP 1989.

Odour and dust

Sinclair Knight Merz was engaged to assess air quality of the site, including odour and dust issues.

SKM recommended the installation of an upgraded ventilation system to remove odours from the treatment building via a new ventilation stack. SKM analysed the effectiveness of the ventilation system, both in the vicinity of the treatment plant and in the surrounding area and concluded that odour levels will be within the statutory requirements.

Pollutants and contaminants

The water and treated solids to be disposed of by irrigation or ground injection will comply with the relevant contaminant requirements of the regulating exemptions and as a result there is no potential for contamination of ground water. Additionally, the Environmental Management Plan requires that land application not occur on land where the regional ground water is within 3 metres of the surface.

Similarly for surface water, the Environmental Management Plan contains a set of guidelines setting out buffer distances from utilisation areas to surface waters, farm dams, drinking bores and other bores. The EMP will be updated to reflect the more recent exemption requirements including testing,

application rates, and other environmental controls to ensure any potential for pollution is properly managed according to the exemption requirements.

Visual, noise and other impacts

The proposal is considered to have minimal impact on the visual environment being separated from its neighbours and from public roads by bush.

The facility is not considered to be noisy with normal conversation being possible in the yard in front of the treatment building. The ventilation stack is inaudible at any of the property boundaries. The new ventilation stack will not be noisier than the existing stack. All the pumps are located within the building and in any case the pumps are not noisy.

There are not considered to be any unacceptable noise impacts resulting from the proposal.

The environmental assessment identifies a number of potential hazards associated with the proposal, together with proposed mitigation measures. Each of the identified hazards and mitigation measures are listed in the Environmental Management Plan, which is considered to adequately identify and deal with the potential hazards.

5. Justification for the Proposal

The existing operation meets a clear need in the region for environmentally safe reuse and disposal of liquid waste which would otherwise be buried or discharged to sewer. The operation makes use of the value of the waste by treating it as a resource and minimising the volume to be buried or discharged to sewer. There is an increased demand for the service and the operation needs to expand to meet that demand.

Re-use/Recycling is accorded the highest priority with water and organic wastes being reused for mine site rehabilitation and agriculture. Where suitable wastes are received vegetable and animal fats and oils will be extracted for biodiesel manufacturing at nearby facilities.

Further, transport energy costs are greatly reduced by removing the requirement to take treated water to Hunter Water facilities for disposal. Instead water is piped a short distance to a large mine site to improve revegetation results. Re-use of water in agriculture and mining is seen to be a major contribution to future sustainability in a warming climate and reduction of green house gas.

The only waste that will end up being landfilled, and which has no reuse opportunity is solidified soil and grit from industrial wash waters estimated to be 5-10 tonne per week at the most.

Alternatives considered

Various alternatives to the proposal were considered including retaining the capacity of the existing operation at 5,000 tonnes per year, limiting the capacity to the licence limit of 15,000 tonnes per year and closing the existing operation and opening a new plant at another location. None of these alternatives is considered to have any advantage over the proposal to increase the throughput to 20,000 tonnes per year since this alternative makes the most efficient use of the existing plant and improves its environmental performance by adding odour control ventilation to the existing building.

The site is considered well sited with major buffer distances and an ideal complimentary activity (coal mine rehabilitation) next door.

6. Draft Statement of Commitments

The Environmental Assessment includes a draft Statement of Commitment which will ensure that the facility is operated and managed in accordance with the findings of the Environmental Assessment.

7. Conclusions and Key Findings

The proposal is considered to have a number of benefits including making beneficial use of the waste products and reducing the demand for land fill and the need for chemical fertilisers.

The proposal is considered to have no unacceptable environmental impacts.

The existing facility has operated for many years without problems and has been demonstrated to have the physical capacity to handle the proposed volume of wastes.

1 Introduction

1.1 Commission

Don Fox Planning Pty Ltd has been engaged by Enviroking Pty Ltd (Enviroking) to prepare an Environmental Assessment (EA) for the expansion of an existing liquid waste management facility at John Renshaw Drive, Black Hill, near Cessnock.

1.2 Background

Enviroking has been operating a liquid waste disposal facility on the site for some time pursuant to a development consent from Cessnock City Council in November 1998 (DA No. 118/697/181). The facility has operated without significant problems since that time.

The consent included Condition 3(a) which required that *“the facility shall not handle more than five thousand (5,000) tonnes per annum as determined by the receipt of delivery to the Hunter Water Corporation in accordance with the required service agreement.”*

Despite this condition, the facility had originally been designed to handle a minimum of 15,000 tonnes per annum and was constructed in accordance with the original plans.

A further condition of consent required that *“all waste water disposal from the site shall be done through the Hunter Water Corporation sewer per the agreement with that organisation”*.

Although appropriate agreements have been arranged with the Hunter Water Corporation, it is proposed that effluent retrieved through the dewatering process be stored, treated and used for irrigation of the surrounding pasture lands for agricultural purposes. As discussed in more detail in the EA, the benefits of this disposal method include reduced cost, reduced truck movements and a beneficial use of the organic and nutrient material contained in the treated effluent.

Enviroking already has a licence from the Environmental Protection Authority to treat up to 15,000 tonnes of liquid waste per year. A copy of the licence is attached as **Appendix A**.

Enviroking now seeks approval to treat up to 20,000 tonnes of waste per year and considers that the existing plant, with the proposed modifications, is capable of handling this volume.

Accordingly, this EA addresses increasing the throughput of the facility to 20,000 tonnes per year. It also considers other extensions and modifications to the buildings comprising the facility to provide workshop space, a sheltered unloading bay and improved ventilation.

1.3 The proposal

The project is defined as the receipt and treatment of liquid waste, including expansion of the existing building on site and installation of new equipment but does not include re-use (disposal) of the treated waste.

The current and proposed activities of reuse of treated grease trap waste come within an existing general exemption issued by the DECCW namely: *The treated grease trap waste exemption 2008*. The proponent is currently reviewing whether the effluent reuse comes within the general exemption: *The effluent exemption 2008*. The proponent is aware of the requirements to apply for a specific exemption for this activity if required, but in any event, consent is not requested in this application. The EA includes information in relation to re-use of the treated waste for the sake of completeness.

1.4 Director General's Requirements

The Department of Planning has issued Director General's Requirements (DGRs) for the project and these are attached as **Appendix B**. The DGRs define the project as "Expansion of the existing waste management facility to increase the capacity from 5,000 to 15,000 tonnes per annum of oil products".

The project will be assessed under Part 3A of the *Environmental Planning and Assessment Act 1979* and *State Environmental Planning Policy (Major Projects) 2005*

Subsequent to the Department issuing the DGRs, DFP (at the request of Enviroking) wrote to the Department requesting that the DGRs be revised to allow treatment of 20,000 tonnes per year. The Department advised by letter dated 13 September 2007 that the increase in capacity to 20,000 tonnes per annum was acceptable and that the existing DGRs were considered to be adequate. Copies of the request from DFP and the Department's response are attached in **Appendix B**.

The key issues identified in the DGRs are:

- Air quality;
- Soil and water;
- Traffic;
- Waste Management;
- Noise; and
- Visual.

These issues are addressed in this EA, together with the other matters raised in the DGRs.

1.5 Consultations

1.5.1 Government Agencies

The following authorities have been contacted in relation to this EA:

1. Cessnock City Council
2. NSW Department of Environment and Climate Change (DECC)
3. NSW Roads and Traffic Authority

Copies of the invitations to comment and the responses resulting from these consultations are attached as **Appendix C**.

In addition, Hunter Water was invited to comment and the response is also included in **Appendix C**.

Immediate neighbours were advised of the proposal and invited to view a draft of the EA. **Appendix D** contains a list of those neighbours and copies of their responses.

No response has been received from Cessnock City Council or DECC.

Consultation with DECC to date (apart from its response to the Department of Planning's request for its requirements for the Environmental Investigation) has involved issue of an amended licence (attached as **Appendix A**).

Hunter Water responded by email advising that the proposal does not have a big impact on Hunter Water and that concerns would only arise if the waste quality was not acceptable to be discharged to Hunter Water's treatment works and if the size of the tanker is unable to be accommodated at the works. The proposal will not result in any significant change to the present operation and so neither of these issues should result in any objection from Hunter Water.

The RTA's concerns have been addressed by the traffic assessment attached as **Appendix K**, which concludes that the existing traffic and access arrangements are adequate.

1.5.2 Neighbouring properties

The proponent visited the following neighbours and advised them of the proposal:

- Shane and Jenny Priestly;
- Alan and Kerry Mackay;
- Mr & Mrs McNaughton.

Information was posted to Donaldson Mines (Mr Phillip Brown) and Bloomfield Mine (Mr Paul Taylor).

All neighbours were given a copy of the information sheet attached as **Appendix D**, together with the letter of application to increase the capacity and the building plans attached as **Appendix E**. None of the neighbours has made any written response but verbally commented that they would not oppose the increase in capacity.

Copies of responses from Bloomfield Mine are attached in **Appendix G**. No response was received from Donaldson Mine.

1.6 Key Issues

The following matters are considered to be the key issues relevant to the proposal:

- Odour emissions;
- Disposal of treated effluent;
- Disposal of treated sludge;
- Spillage control and arrangements for discharge and loading;
- Access and traffic generation;
- Soil and water quality impacts;
- Potential for contamination; and
- The provisions of State Environmental Planning Policy No. 33 – Hazardous and Offensive Development.

These matters are addressed within later sections of this report.

1.7 Project Team

In order to undertake the required assessment and to provide the relevant information, a project team comprising the following members has been formed:-

- Don Fox Planning Pty Ltd – Town Planning, Environmental Issues and Project Management;
- Sydney Environmental and Soil Laboratory – Site operation details, product and processing requirements and land disposal requirements;
- Sinclair Knight Merz – Odour control and dust assessment;
- TPK and Associates Pty Ltd – traffic assessment; and
- Advantage Building Design – Preparation of building design plans.

2 Information about the Location

2.1 Site Location

The subject site is located on the northern side of John Renshaw Drive at Black Hill, east of the Black Hill Road intersection approximately 20 kilometres from Cessnock.

The property is bounded by John Renshaw Drive to the south, Bloomfield Collieries Open Cut Mining operation to the north and Donaldson Mine to the east. Smaller rural holdings are located to the south of John Renshaw Drive. A location plan is presented in **Figure 1**.

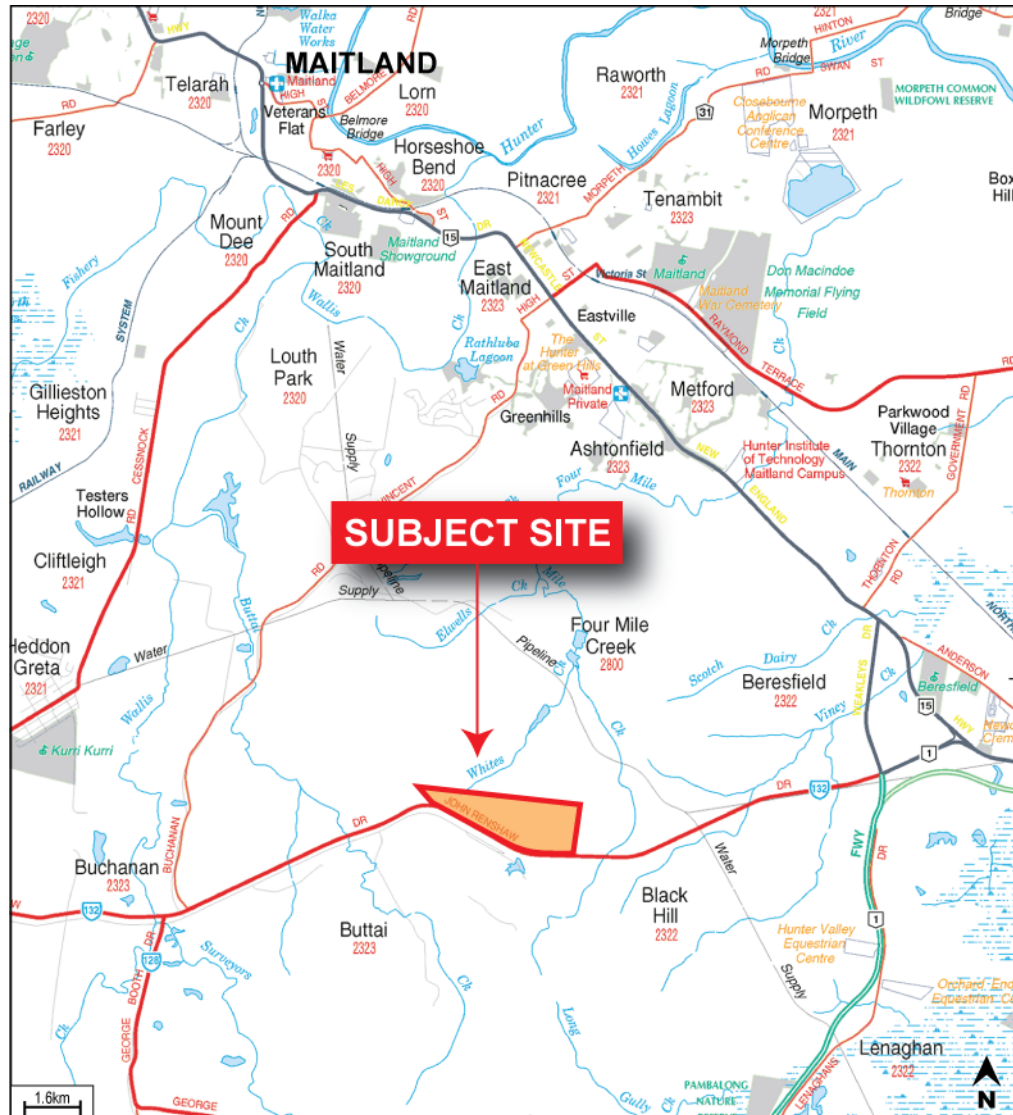


Figure 1 – Location plan of the subject site

2.2 Subject Site

The site comprises Lot 931 DP 816814, John Renshaw Drive, Black Hill having an area of 60.21 hectares. The site is gently sloping with a watercourse traversing the eastern portion of the property. The site is generally covered with native vegetation except for a cleared area near the centre of the property of about 3.5 ha where the buildings comprising the existing business are located. A cleared driveway connects the buildings to John Renshaw Drive.

Figure 2 comprises a survey plan of the subject site, while **Figure 3** is an aerial photograph showing the site and the surrounding properties.

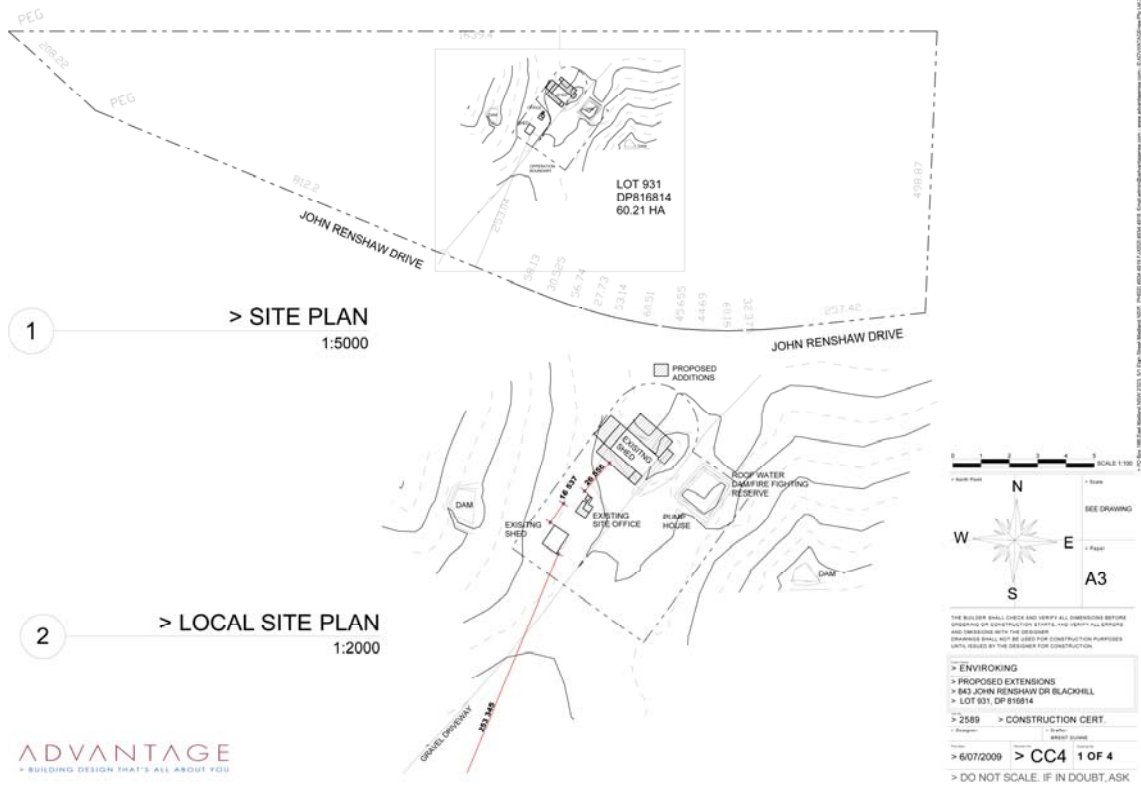


Figure 2 – Survey plan of the subject site

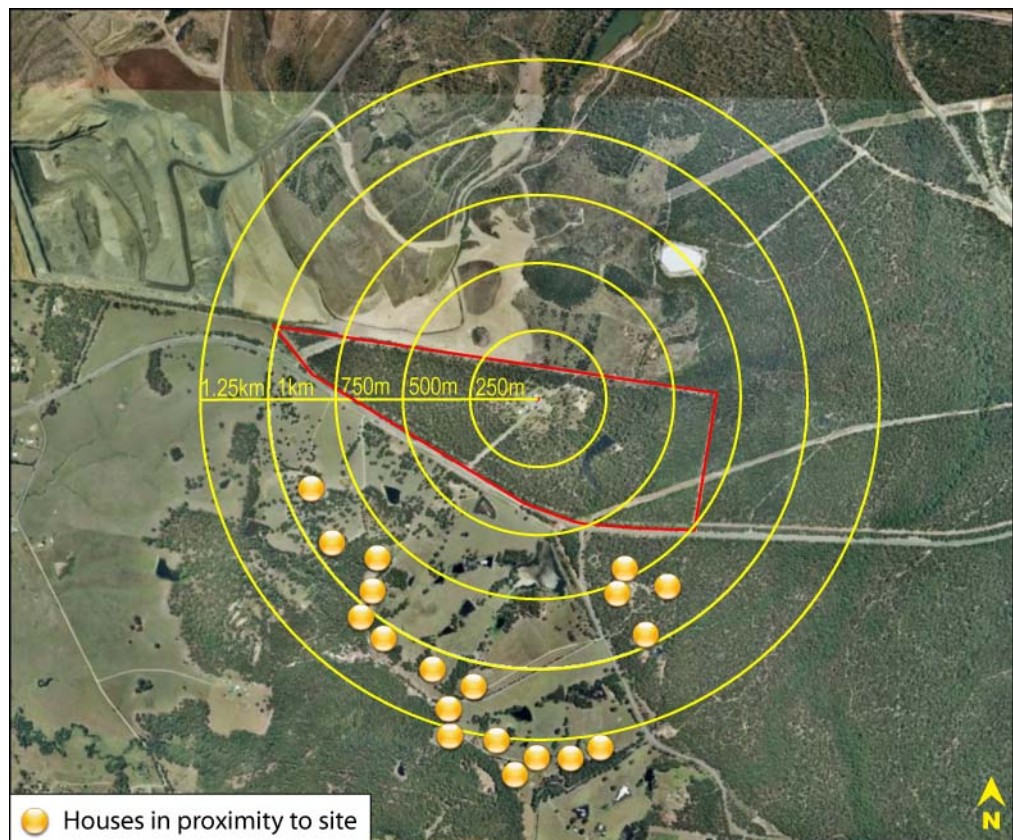


Figure 3 – Aerial photograph of the subject site and surrounding properties

Figure 4 contains photographs of the existing development and the driveway.



Photo 1 - Site shed and employee carpark.



Photo 2 - Office building and employee car park.



Photo 3 - Office building and employee car park.



Photo 4 - Driveway and plant building.



Photo 5 - Plant building and tanker trucks.

Figure 4 – Photographs of the existing development



2.3 Tenure

The site is owned by RL and MG Lodge.

2.4 Zoning

Pursuant to Item 8, Schedule 5 of Cessnock Local Environmental Plan 1989 (Amendment No 43), the site is zoned to permit a “waste water treatment facility” within the 1(a) Rural “A” Zone.

2.5 Existing and Previous Use

The site is presently used solely as a liquid waste disposal facility as described in **Section 1.2**.

2.6 Surrounding Land Uses (Existing and Proposed)

As can be seen in the aerial photograph in **Figure 3**, the site is adjoined by rural properties to the south and west. The property to the north is Bloomfield Collieries which is presently rehabilitating the area immediately adjoining the subject site. Donaldson Mine is located on the eastern boundary.

A 500 metre buffer has been established around the waste disposal buildings and a 1000 metre buffer zone around the mine. Within both buffer zones dwelling houses are prohibited.

The nearest dwelling is approximately 750 metres from the waste treatment facility and its location is shown on **Figure 3**, together with other nearby dwellings.

3 Description of the Proposal

3.1 General

3.1.1 Need for the project

The waste facility provides essential liquid waste treatment services not provided by the public utilities (sewage treatment plants or STPs). The public utilities require businesses that produce oily or greasy waste waters to install either oil interceptor traps in the case of mineral oils or grease interceptor traps in the case of fatty waters. The former will mostly be motor vehicle workshops, the latter will be restaurants, food halls, canteens and food processing facilities. The STPs cannot treat large doses of such oily or fatty matter.

The oil or grease interceptor traps are regularly pumped out using vacuum capable vehicles. Vehicles are dedicated to either grease trap and food waste or to oily waters containing motor oils. The resulting liquid waste streams are delivered separately to the facility then treated in different ways.

The current operation meets a demand for treating waste which cannot otherwise be disposed of to sewer or landfill because water authorities will simply not allow untreated liquid waste to go to sewer. The operation treats the waste as an asset and recovers liquids and solids, which are applied to agricultural and rehabilitation land.

The proposal will allow for an increase in the capacity of the operation to cope with an increasing demand and population growth in the Hunter Valley. There is a clear need for the project, which provides a service to dispose of wastes in an environmentally sustainable manner, while minimising the volume of material going to sewer and landfill.

3.1.2 Businesses serviced and other facilities

The “catchment” for the business is the Hunter Valley and Central Coast. In this area of high population growth, food and grease trap wastes are produced by the following types of businesses and facilities-

- Poultry and other meat food processors
- Grain and oilseed processors
- Fast food restaurants
- Vineyards and associated restaurants and food outlets
- General restaurant trade
- Canteens eg schools, hospitals, gaols and large businesses
- Supermarket food halls

Many commercial light industry businesses in the catchment area are required to have solids and oil arrestor traps on the sewer lines and hence produce an oily water waste. These include-

- Motor workshops, including service stations and mines (eg coal mine service workshops)
- Car, truck and bus wash stations
- Oil and fuel storage operations (tank wash outs)

These are all vital businesses in the Hunter Valley and environs and the population and growth in mining has not been matched by expansion in liquid waste service facilities. There has been no new liquid waste facility established in the area for over 10 years. Much liquid waste is consequently transferred to Sydney at significant environmental cost (fuel use). The only other existing facilities are the Transpacific/Cleanaway treatment facility at Kooragang Island and a small land application operation for grease trap and food waste at Elderslie near Singleton. The latter is not a treatment facility.

3.1.3 Objectives of the Proposal

The proposal seeks approval for the expansion of the capacity of the existing liquid waste treatment plant. Specifically, the proposal includes:-

- Receiving and treating a volume of up to 20,000 tonnes per year of liquid food and grease trap waste from domestic and commercial food outlets and industrial oily waters;
- Re-using treated effluent water by means of irrigation on adjoining and nearby mine rehabilitation and agricultural land;
- Re-using treated food sludge (not containing any contaminants) by land application on adjoining and nearby mine rehabilitation and agricultural land;
- Recycling floating oil (from industrial oily waters) to mineral oil recyclers;
- Disposing of contaminated effluent water from industrial oily waters to sewage treatment plants operated by Hunter Water Corporation; and
- Disposing of non-contaminated grit, sand and solids to land fill.

The valuable plant nutrients these biological wastes contain are returned to the soil as fertiliser under long standing exemptions issued by the NSW DECC. Valuable water, containing some remaining nutrient content, is also reused as irrigation water for either mine rehabilitation or agriculture.

The proposal includes expansion of the existing structures on the site, mainly in the form of ancillary structures, and upgrading of the ventilation systems within the treatment building. The proposal also includes provision for bunding to contain accidental spillage of waste material.

3.1.4 Disposal methods

The waste hierarchy established under the Waste Avoidance and Resource Recovery Act 2001 recommends in order of preference:

- Avoidance
- Waste Recovery
- Disposal

Avoidance is not a relevant option since the facility is a waste treatment business for end-of-line wastes. Importantly, the facility treats wastes which are not otherwise treated by any public water treatment facility. Indeed these public facilities require that businesses install interceptor traps to keep oil and grease and high strength food waste out of the sewerage system. Using the treatment processes detailed above the only waste that is actually disposed of is oily water and oily soil and grit from car washes that are immobilised on an oil absorbent medium. The remainder is recycled or used beneficially for irrigation.

Disposal methods for the various output products are discussed in **Section 3.3.4**.

3.1.5 Drainage and Water Pollution Controls

All tanks and loading/unloading areas are bunded, so that spills and leaks will be contained. All waste liquids are stored in covered tanks. No effluent is disposed on site.

Roof water is collected and stored in tanks and in an earth dam for fire fighting purposes. Excess roof water is allowed to run off.

3.1.6 Construction Programme

It is envisaged that building construction will commence immediately upon receipt of necessary approvals and would be completed within 6 months of commencement.

It is noted that the building works will be confined to the area around the existing developed part of the site, which are not close to any of the site boundaries and accordingly it is considered that construction activities will have minimal impact.

3.1.7 Number of Persons to be Employed

When completed, the operation will employ a total of 12 people, comprising:

- 6 drivers;
- 2 operators;
- 3 office staff; and
- 1 manager.

Of the 12 employees, 8 will be full time, 2 will be permanent part time and 2 will be casual.

3.2 Development Plans – (Site Works, Building and Plant)

Advantage Designers has prepared plans showing the proposed building works, which are attached as **Appendix E**. These works comprise:

- An extension of the existing building to house the proposed treated effluent tanks, including bunding;

- An extension of the existing building to house a truck wash bay and workshop;
- An awning and extension to the existing building to cover the main access to the building and to enclose the existing sludge pit;
- An awning attached to the existing building to provide cover over the existing truck receival pit; and
- An additional ventilation system, as recommended by SKM.

In response to comments from DECCW to the draft EA, it is confirmed that the banded drying/storage area shown on the plans will be covered with an open sided roof to prevent rainwater ingress, but to allow air circulation to assist drying. It is confirmed that the surface of the unloading and loading areas will be sealed.

No other works are required or proposed.

3.2.1 Landscaping

No landscaping works are considered necessary. The subject property around the development site comprises bushland which provides more than adequate screening, as well as a pleasant background. **Figure 4** shows the bushland separated from the buildings by grassland which is regularly maintained. **Figure 7** illustrates that the existing facility is well screened by vegetation from John Renshaw Drive. The proposed works will have no significant impact on the visibility of the facility.

3.3 Operations

3.3.1 Description of Process

Food and grease trap wastes

A process diagram for the treatment system is shown as **Figure 5**.

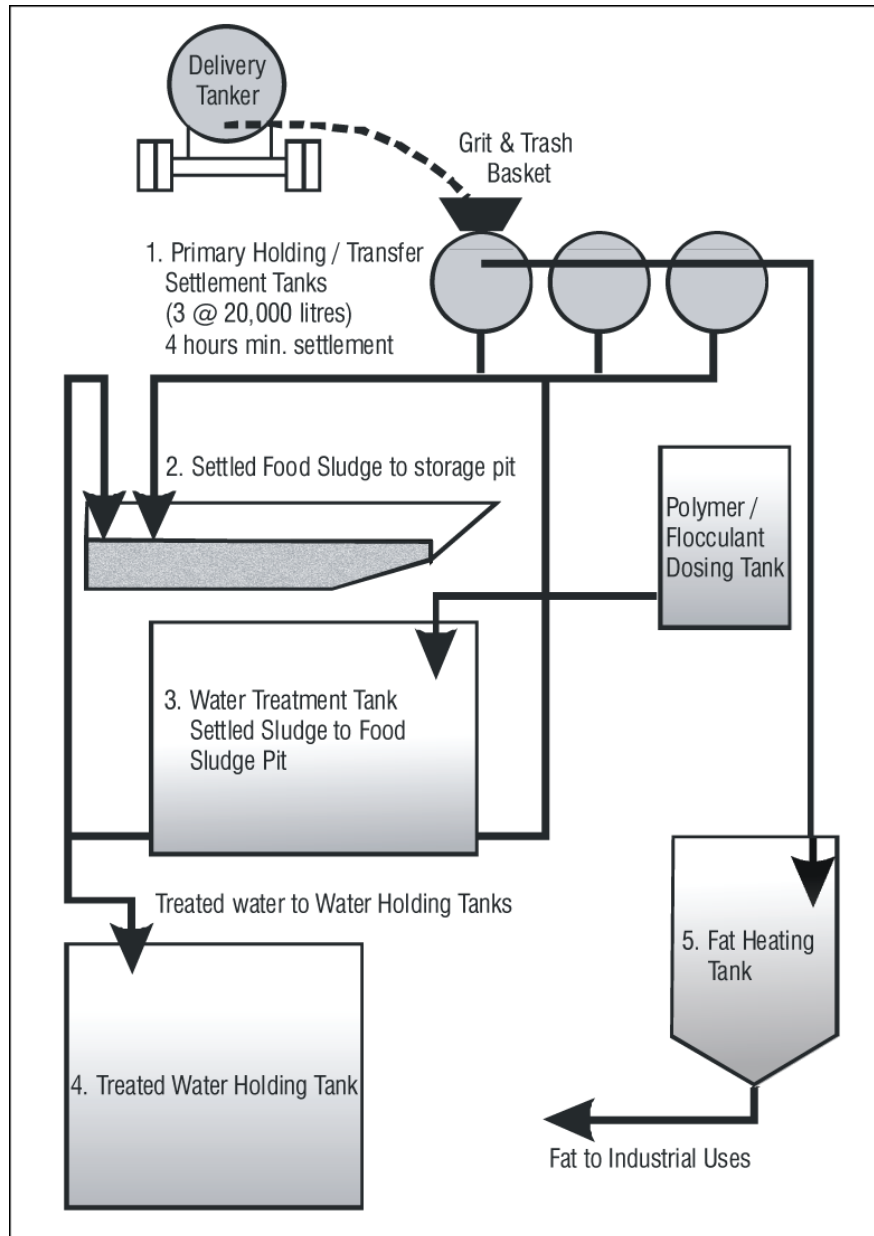


Figure 5 – Process diagram for Grease Trap Waste

Food and grease trap waste is delivered to the facility by truck and discharged into the Grease Trap Waste (GTW) primary holding tanks. In these tanks heavier than water sludge (food particles etc) are allowed to settle out. After a minimum 4 hours this thickened sludge is transferred to a storage pit. The water is pumped off to the water treatment tank for further clarification. Any floating matter (grease, fat) is optionally combined with the settled sludge in the storage pit or pumped to a heating/refinement tank for industrial recycling.

In the water treatment tank the water is further clarified by the addition of water treatment agents called flocculants and coagulants. Once added these cause any remaining suspended solids to settle to the bottom to form a sludge layer which is then pumped to the storage pit. Water may then be discharged for use as irrigation water or transported to a Sewage Treatment Plant (STP).

The floating fat layer can optionally be pumped to a refining tank which heats the fat/water emulsion allowing water to be separated and then filtered. This crude tallow is sold to tallow recyclers or to biodiesel manufacturers.

3.3.2 Plant Type, Capacity and Expected Life

The existing plant consists of the following storage and treatment tanks –

Purpose	Tank Capacity	Number of tanks	Total Capacity
Steel GTW Primary Receipt Tanks	25,000	3	75,000
Plastic “spare” receival tank	20,000	1	20,000
Steel and plastic water treatment Tanks	22,000	4	88,000
Concrete Treated water tank	150,000	1	150,000
Oily water receipt tanks	22,000	2	44,000
Oily sludge drying bin	10,000	1	10,000

Table 1 – Storage tanks and capacity

The truck fleet changes with time and is licensed separately to the plant. The currently available truck fleet is shown in **Table 2**.

Vehicle	Capacity tonnes
ISUZU Tanker	10.0
Ford CARGO Tanker	11.5
IVECO Tanker	11.5
ACCO Tanker	12
Semi trailer tanker	27

Table 2 – Truck fleet

The truck fleet can be increased or adapted to cope with increased volumes as required and does not form part of this approval process, being separately licensed under the POEO Act. Other carriers may also bring liquid wastes to the facility within its capacity limits. All such vehicles would require the appropriate POEO Act transport licenses.

Various associated pumps, valves and plumbing both installed and mobile are associated with the tankage and are listed in **Section 3.3.5**.

The facility is capable of managing 20,000 kilolitres of liquid waste per annum from all sources. The expected breakdown will be-

Grease Trap waste and Food waste	-	18,000 kilolitres per annum
Oily waters	-	2,000 kilolitres per annum

3.3.3 Other Input Materials

Only three agents are used in the treatment of GTW and oily waters. Material Safety Data Sheets (MSDS) are attached as **Appendix F**.

- Blue Circle Hydrated lime
- Nalco HI-TEX 82230 anionic water treatment polymer water based solution.
- Nalco Ultrion® 8588 Aluminium hydroxychloride coagulant water based solution.

None of these inputs is considered hazardous (apart from irritant), flammable or accumulative in the environment.

3.3.4 Output Materials and disposal methods

Waste Types produced by the facility and reuse/disposal options are set out in **Table 3**.

Waste Being Treated	Wastes Produced	Reuse/Disposal Options
1. Grease Trap and food Waste from domestic and commercial food outlets	1. Floating Fatty Matter	
	2. Treated Effluent Water	Beneficial reuse by irrigation or Disposal to Hunter Water STP.
	3. Organic Sludge (or dried solids)	Exempted Land Application for agricultural benefit
2. Industrial oily waters, car and truck wash waters	1. Floating oil (if present)	Mineral oil recyclers
	2. Treated Effluent Water	Beneficial reuse by irrigation or Disposal to Hunter Water STP.
	3. Grit, sand and solids	Drying and landfill

Table 3 – Reuse and disposal options

The five treated waste streams are produced in the following approximate amounts per annum:

Waste Type	Approximate volume	Reuse/Disposal option
1. Treated effluent water	14-18,000 kilolitres/annum	Beneficial reuse by exempted irrigation or disposal to Hunter Water STP.
2. Organic sludge from GTW and food waste either in slurry or solidified form.	4-6,000kilolitres/ annum as sludge or 2-3,000 t/annum in solid form.	Exempted land application for agricultural benefit
3. Solidified oily sludge from oily water and car wash treatment suitable only for landfill.	50-100t/annum	Solidification and immobilisation for landfill
4. Dewatered and filtered tallow	50-200t/annum	Heating and refinement for sale as tallow or biodiesel conversion
5. Recovered mineral oil	<20t/annum	Sale to oil recyclers

Table 4 – Treated waste volumes

In practice, most treated effluent water is re-used and very little is taken to Hunter Water STPs, since there is a significant charge for this method of disposal.

The regulations governing exemptions for re-use and recycling activities are discussed in **Section 3.3.13**.

3.3.5 Type of Machinery and Equipment to be Used

The plant includes a variety of pumps to move the raw and treated liquids between the tanks. There will also be a range of maintenance equipment within the workshop, including a high pressure wash down hose.

Most of the equipment will be fixed in place, but some of the maintenance equipment will be portable.

All pumps are relatively small, with the largest having a power of approximately 1 kW.

Waste is brought to the site in tanker trucks similar to the one shown in **Figure 6**. The trucks are fitted with vacuum pumps.



Figure 6: Typical tanker truck

3.3.6 Centrifuge

Enviroking has recently been trialling the use of an industrial centrifuge to reduce the moisture content of the sludge. The drier sludge has a number of advantages, including:

- Reduced volume of sludge;
- Reduced odour from the dried sludge;
- Quicker sludge production; and
- Reduced costs in sludge disposal.

Use of the centrifuge does not alter the basic process diagram shown in Figure 5, however it does alter the method of disposal, with the dried sludge applied to the ground surface, rather than by ground injection. DECC has advised that surface application of solids will require a separate exemption as the current exemption pertains only to subsurface application of liquids. An application for this exemption is being compiled and does not require separate planning approval under this application.

3.3.7 Incidental Materials, Fuel, etc Stored On-Site

Diesel fuel and lubricating oils will be stored inside the operations building. Not more than 1000 litres of fuel or oil will be kept.

No hazardous chemicals are used in the process and none will be stored on site.

3.3.8 Energy Requirements

The total installed pump capacity will be approximately 4 kW including the air treatment systems. The centrifuge will consume approximately 37Kw when operating.

3.3.9 Hours of Operation

It is proposed to operate the plant 5 full days per week between 7am and 5pm, with a half day on Saturday, finishing at noon.

Construction hours will be the same as the operational hours.

3.3.10 Access

The site has excellent access from John Renshaw Drive via a gravel driveway, which is sealed for a distance of approximately 35m from the intersection. There is adequate sight distance from the driveway along John Renshaw Drive in both directions – refer to the photographs in **Figure 7**.

The driveway was upgraded pursuant to Development Consent 118/697/181. A copy of the approved plans for the intersection upgrade is presented in **Appendix J**.



Photo 1 - View west across driveway entrance.



Photo 2 - View down driveway towards John Renshaw Drive.



Photo 3 - View down driveway into site.



Photo 4 - View down driveway into site.



Photo 5 - View looking east across driveway.
Figure 7 – Photographs of site entry



3.3.11 Vehicular Parking

There is more than adequate parking available on site for the 12 employee's private vehicles, plus the tanker trucks. No additional employees are required to deal with the proposed increase in capacity of the facility. The site is remote and does not compete with other industries for parking spaces.

Figure 4 shows the existing employee parking and access arrangements which are considered to be satisfactory.

3.3.12 Relationship with Other Businesses On-Site or on Adjoining Land

There are no relationships with businesses on the site or adjoining land.

There has been an exchange of letters between the proponents and the operators of the adjoining mine site (Bloomfield Collieries Pty Ltd) to the effect that the proponents are invited to enter into an arrangement to dispose of water on land being rehabilitated by the mine. A copy of the letter is presented in **Appendix G**.

3.3.13 Compliance with regulations

The range of reuse/recycling activities subject to regulation are covered by the following regulations –

- Land application of Food Waste: “The Food Waste Exemption 2008”.
- Land application of treated Grease Trap Waste including water, sludge and solids. “The Treated Grease Trap Waste Exemption 2008”
- Treated Effluent water: “The Effluent Exemption 2008”.

These exemption regulations and the conditions attached to them can be viewed at:

<http://www.environment.nsw.gov.au/waste/RRecoveryExemptions.htm>

3.3.14 Site Management

The following outlines the staff employed and their responsibilities:

- Managing Director (oversees everything listed)
- Foreman/Safety Officer/First Aid Officer
 - Foreman
 - Delegates Work
 - Oversees all work in Plant
 - Purchases materials and supplies (Plant related)
 - Safety Officer
 - Checks condition of site
 - Responsible for major spillages on site and plant
 - Checks driver conformance to OH & S issues
 - First Aid Officer
 - Administers First aid to employee injuries
 - Checks first aid supplies
- All Drivers
 - Responsible for checking trucks each morning (oil, tyres, lights etc.)
 - Must wear clothing provided (reflective and protective)
 - Responsible for minor spillages on site (major referred to Safety officer)
 - Must adhere to all speed limits on roadway and sites
 - Must adhere to all OH & S guidelines
- Administrative Duties
 - Reporting of all incoming and outgoing liquid waste

- Data entry of all completed pump outs
- Accounts payable and receivable
- Payroll
- Customer service
- General office duties

3.3.15 Daily Operational Plan and Procedures

Receival of wastes occurs mainly in the mornings. Vehicles will start arriving at 7 am and allowing that treatment might not start until the first say 4 loads are received, typically treatment of the first tank commences at about 9 am, with the second at 11 am, the third by about 2pm when all receival has finished. After lime addition, treatment will take a minimum of four hours, but say 5 hours to include dosing, stirring and pumping time. The following table provides an outline of a typical daily schedule when operating at maximum capacity.

Time	Tank 1	Tank 2	Tank3	Spare Tank
7-9 am	Transfer to Spare	Empty	Empty previous nights treatment	Filling from Primary Tank 1
9 am	Tank filling	Tank filling	Empty	Tank full, lime dose and stir
11 am	Tank full, lime dose and stir	Tank full, lime dose and stir	Tank filling	Settling
2 pm	Settling	Settling	Tank full, lime dose and stir	Empty Tank
4 pm	Empty tank	Empty Tank	Settling	Empty
Overnight	Empty	Empty	Settling	Empty
Treated Volume	25,000 litres	25,000 litres	25,000 litres	20,000 litres
		Normal Running	75,000 litres	
Total with contingency				95,000 litres

Table 5 – Typical daily tank schedule

On Saturday mornings the 45,000 litre average volume would be received into the first two primary tanks only and would settle overnight.

Secondary Treatment

For disposal to irrigation or sewer, a secondary “polishing” treatment of the water using lime and flocculent is sometimes needed. When sludge is separated this water component represents about 70% of the incoming volume, with the other 30% being sludge or a partitioning of around 52,500 litres of water and 22,500 litres of sludge.

Water treatment again takes about 5 hours and occurs in the 4 water treatment tanks each of 22,000 litre capacity, total 88,000 litres. This will easily cope with the anticipated 60,000

litres per day (18,000 tonnes per year over 52 weeks, with a half day Saturday) again allowing for contingency.

Waste Water

Treated waste water is transferred to the 150,000 litre waste water holding tanks at around 270,000 litres in an average week. Thus, with a combined holding capacity of 150,000 litres plus the 88,000 litres of treatment tanks there is a total water holding capacity of 238,000 litres or 5 days capacity. In the event of prolonged wet weather or other disturbance to the disposal routine, the contingency position is to haul water to Hunter Water STP.

In practice this water will be moved daily to irrigation using the 27,000 litre semi trailer tanker. If occupied carrying one load of sludge it has the capacity to move 2 loads of water or 54,000 litres of water.

Sludge

Treated sludge is transferred straight to the "Sludge Pit" at a rate of about 21,000 litres per day. With a capacity of 45,000 litres this will need emptying every second day using the semi trailer tanker and/or ACCO Tanker. This would average about 1 load a day or two vehicle in-out movements.

3.3.16 Reception, Segregation and Control of Incoming Materials

Oily waters and car wash waters are handled separately to GTW and food wastes. Specifically-

- Any vehicle carrying oily water is washed out prior to then carrying GTW.
- All GTW is received in the GTW bay on the right hand side of the building into dedicated primary GTW receipt tanks.
- All oily waters are received at the right hand side of the building into dedicated tankage.
- No cross connected plumbing occurs in primary treatment tanks
- Only final treated water tanks have any cross connection allowing highly treated waters to be combined.

3.3.17 Waste By-Products

There are no waste by-products not described elsewhere in this EA.

3.3.18 Safeguards, Health and Operational Safety, Fire Fighting, Security and Counter Disaster Provisions

3.3.18.1 Safeguards

The Environmental Management Plan (EMP) attached as **Appendix H** sets out guidelines for the safe reception, treatment and disposal of GTW and oily wastes in accordance with the requirements of the relevant Acts and regulations.

In summary, the EMP addresses:

- Controlling the wastes to be accepted for treatment (EMP Section 3.2.2);
- Selecting appropriate sites taking account of buffer distances, slope, flooding and soil type;
- Pre-application and post-application soil tests on utilisation areas;
- Testing wastes for contaminants;

- Managing nutrient loading on utilisation sites;
- Avoiding land application when soil conditions are not suitable (eg too wet);
- Providing copies of the EMP to owners of utilisation sites;
- Providing a summary of land applications to utilisation sites together with soil and waste analysis to site owners;
- Keeping records of incoming and outgoing loads;
- Excluding cattle and root vegetable growing for minimum periods after land applications.

The EMP can be updated to incorporate and additional conditions of this approval or exemptions issued by the DECC for surface application of solidified organic wastes.

3.3.18.2 Health and Operational Safety

The EMP attached as **Appendix H** includes a Safety Risk Assessment Register in Section 4 which sets out identified hazards and a range of control measures.

3.3.18.3 Fire Fighting

There is no formal fire fighting plan, however the area around the buildings is kept free of undergrowth, thus providing an adequate asset protection zone from the surrounding bush.

3.3.18.4 Counter Disaster Provisions

Section 4.2 of the EMP contains an Environmental Risk Management Register, which identifies a wide range of environmental risks and the associated control measures.

3.3.18.5 Security

There are no relevant security concerns with the existing or proposed operation.

3.3.19 Traffic Generation and Truck Routes

Truck movements Monday to Friday using the maximum capacity of all current vehicles can be estimated as follows.

Vehicle	Capacity tonnes	Task	Loads per day	Movements	Tonnes in/out
ISUZU Tanker	10.0	GTW or oily water in	2	4	20
Ford CARGO Tanker	11.5	GTW in	2	4	23
IVECO Tanker	11.5	GTW in	2	4	23
ACCO Tanker	12	GTW in	2	4	24
TOTAL IN					90
Semi trailer tanker	27	Sludge out	1	2	
Semi trailer tanker	27	Treated water out	2	4	
TOTAL OUT					81
		Totals	11	22	

Table 6 – truck movements

Note that 1 tonne is equivalent to approximately 1 kilolitre of either waste in, or effluent out. Accordingly, the “in” capacity is greater than the average requirement of 75,000 litres per day. The “out” capacity also exceeds the anticipated 75,000 litres (75 tonnes) average.

It is important to note that vehicles are mobile equipment not associated with the waste facility licence. They can and are subject to turnover or upgrade and capacity can be increased as required. The small amount of solidified waste going to landfill is not mentioned here. It is anticipated to occur as a 5-10 tonne load once a month.

Trucks and passenger vehicles have no choice but to use John Renshaw Drive or Black Hill Rd. Trucks exclusively use John Renshaw Drive.

TPK and Associates was engaged to advise on:

- Review of traffic management and road safety requirements;
- Establish potential traffic volume increases; and
- Assess potential impacts related to road safety and traffic management.

A copy of the TPK report is attached as **Appendix K**.

Staff vehicles and other light vehicles account for 20 of the 46 total daily movements. Staff will arrive during the shoulder peak period of the typical business peak on John Renshaw Drive when acceptable gaps and pavement tapers are presented to complete their movements into the site. The staff departure traffic will be in between the trades and business peaks for this section of the network and acceptable gaps are again anticipated. The 26 heavy vehicle trips will be spread over the typical day; random arrival/departure of such low demands determines that there is a minimal to nil likelihood of more than one right turn, entry heavy vehicle arrival at any time.

The traffic assessment concludes that:

- The proposed increase in capacity of the land use business operation will not generate an increase in traffic that would have an adverse impact on the road network or intersection capacity; and
- The current channelisation at the intersection of the site access with John Renshaw Drive will continue to manage the road safety in terms of road environment requirements including safe intersection sight distance.

3.3.20 Ongoing Monitoring

The EMP identifies a range of monitoring measures, including:

- Periodical analysis of incoming waste;
- Pre- and post-application analysis of utilisation sites; and
- Recording details of incoming and outgoing loads.

Relevant records are provided to owners of utilisation sites to ensure that appropriate management practices are followed.

The EMP is considered to provide adequate monitoring of the processes.

4 Assessment of Key Environmental Issues, Description of Relevant Environment and Analysis of Environmental Impacts

4.1 Planning Context

4.1.1 Development Control Plans

Cessnock Development Control Plan 2006 (CDCP) applies to the site. Relevant provisions of CDCP include:

Control	Comment	Compliance
C1.4 - A requirement of one car parking space per 2 employees. Compliance with Australian and Council Standards in relation to design and construction of car parking	Employees now park informally as shown on Fig 4 . There is more than sufficient room on site for employee and for truck parking. Refer to Section 3.3.11 - formal parking spaces are not necessary in this instance.	Compliance not considered necessary in this instance.
C1.4.1- Driveway type 6 or 7	Existing driveway is adequate – refer to intersection drawing (Appendix J) & TPK traffic assessment (Appendix K)	Complies
1.4.7 - Landscaping	There is already adequate landscaping	Considered to comply
D3 Industrial Development		
3.1.3 - Aims & Objectives No environmental problems, or adversely affect existing services Adequate environmental safeguards	The proposal will not cause any environmental problems or affect existing services	Considered to comply
3.2.1 - Landscaping Front & side setback areas to landscaped	The buildings are set back far more than 6 metres from all boundaries and the setback areas comprise dense bush	Considered to comply
3.2.3 - Vehicular movement & parking	Provision for access and traffic is considered to be adequate – refer to TPK traffic assessment (Appendix K)	Considered to comply
3.2.4 - Building design External walls of colour treated cladding or masonry	The external walls are of Colorbond sheeting.	Considered to comply
3.2.8 - Drainage Dispose of stormwater in natural drainage course	Stormwater is collected and stored in rainwater tanks, Excess is directed to an existing watercourse	Considered to comply

4.1.2 Local Environmental Planning Instruments

The site is zoned to permit a “waste water treatment facility” under Cessnock LEP 1989 (Amendment No 43). The underlying zone is 1(a) Rural “A”.

Relevant provisions of Cessnock LEP 1989 include:

Control	Comment	Compliance
9 Aims & Objectives 1(a) Rural “A” zone (d) to enable other forms of development; (e) type and density of development is appropriate	The proposal meets the relevant zone objectives and comprises “other forms of development” which require an isolated location. The type and density of the proposal is considered to be appropriate for the site and locality.	Considered to comply
Permitted uses	The existing and proposed use is permitted under Item 8 Schedule 5 of CLEP.	Considered to comply
18 Building lines	The existing buildings are set back approximately 250 metres from the road. The proposed works will not significantly change the setback.	Considered to comply
20 Clearing	No clearing will be required	Complies

4.1.3 Regional Environmental Plans

The Hunter Regional Environmental Plan 1989 covers the subject site, but contains no provisions specifically relevant to the proposal.

4.1.4 State Environmental Planning Policies

State Environmental Planning Policy No 33 – Hazardous and Offensive Development

For the purposes of SEPP 33, it is considered that the proposed development may be considered to be “a potentially offensive industry”. SEPP 33 defines potentially offensive industry as follows:

“Potentially offensive industry means a development for the purposes of an industry which, if the development were to operate without employing any measures (including, for example, isolation from existing or likely future development on other land) to reduce or minimise its impact in the locality or on the existing or likely future development on other land, would emit a polluting discharge (including, for example, noise) in a manner which would have a significant adverse impact on the locality or on the existing or likely future development on other land, and includes an offensive industry and an offensive storage establishment.”

The proposal may be considered to be a potentially offensive industry to the extent that ameliorative measures would be appropriate to control the emission of odour, and to a lesser extent, noise, to prevent any significant adverse impact on the locality or on adjoining development. Clause 13 of SEPP 33 requires that the consent authority take into consideration the following matters with respect to potentially offensive development.

- a) *Current circulars or guidelines published by the Department of Planning relating to hazardous or offensive development; and*
- b) *whether any public authority should be consulted concerning any environmental and land use safety requirements with which the development should comply; and*
- d) *any feasible alternatives to the carrying out of the development and the reasons for choosing the development, the subject of the application (including any feasible alternatives for the location of the development and the reason for choosing the location, the subject of the application); and*
- e) *any likely future use of the land surrounding the development.”*

Items (b), (d) and (e) are matters referred to elsewhere within this Statement. Relevantly, this would include the requirement to hold a licence under the POEO Act that would, as a matter of course, include licence requirements to ameliorate and mitigate the potential for offensive odour. The Department of Planning has issued various hazardous industry planning advisory papers which have been taken into account in development of the management and operation procedures of the plant, notwithstanding that these guidelines primarily relate to hazardous industry.

4.1.5 Local Planning Strategies and Context

The Lower Hunter Regional Strategy identifies Future Freight Hub and Employment Lands lying to the north of John Renshaw Drive, as shown on **Figure 8**. The freight hub is within proximity to the port and in the vicinity of the junction of the New England and Pacific Highways at Beresfield. The freight hub is intended as a facility for distribution, coordination of containerised freight, storage of empty containers and coordination of trucking and rail movements.



Figure 8: Extract from Lower Hunter REP

The subject site is within the south western edge of the land shown on **Figure 8**.

The proposed use of the site for liquid waste treatment is not incompatible with the Regional Strategy, and although the proposed use is not freight related, it is an employment generator.

The site is already used for liquid waste treatment and is located on the edge of the employment lands. The proposal is not regarded as being in conflict with the Strategy.

4.1.6 Waste Avoidance and Recovery Act 2001

There are no relevant licensing requirements of the Waste Avoidance and Recovery Act - simply a requirement to consider the objectives of the Act namely:

*“(a) to encourage the most efficient use of resources and to reduce environmental harm in accordance with the principles of ecologically sustainable development,
(b) to ensure that resource management options are considered against a hierarchy of the following order:
(i) avoidance of unnecessary resource consumption,
(ii) resource recovery (including reuse, reprocessing, recycling and energy recovery),
(iii) disposal,
(c) to provide for the continual reduction in waste generation,
(d) to minimise the consumption of natural resources and the final disposal of waste by encouraging the avoidance of waste and the reuse and recycling of waste.”*

As demonstrated in this EA, these objectives have been followed in the development of the systems used in the Enviroking liquid waste facility.

4.1.7 Heritage, Conservation Agreements, Internal Treaties

The subject site is not identified as a heritage item within the Cessnock LEP. We are not aware of any conservation agreements or international treaties which apply to the site.

There is no evidence of significant heritage values applying to the site.

4.2 Air Quality

Sinclair Knight Merz (SKM) was engaged to assess air quality at the site, including odour and dust issues and to advise of any control facilities which might be required. SKM's report is summarised in the following sections of this EA and the full copy of the report is presented in **Appendix I**.

4.2.1 Existing Situation

Within the existing Enviroking building, odours are collected via a ducted ventilation system from the storage and treatment tanks and are discharged from a stack located in the middle of the north-eastern or rear wall of the building. Fugitive odour releases also occur from the open primary holding tanks during tanker discharge. These fugitive odour releases are not currently collected or discharged.

SKM assessed the odour concentration from the facility under the existing odour management regime to be 12 Odour Units/m³ (OU/m³) on site and less than 0.5 OU/m³ at the most affected receptors being the residences located south of the facility.

The Bloomfield open cut mine located immediately north of the subject site is the main source of airborne particular matter and there are no other major sources of air pollution or odour in the area. The only potential source of dust within the site is from vehicles using the access road.

Meteorological data was obtained from the Department of Environment & Conservation recorder at Beresford, approximately 8km north-east of the subject site.

The mean 9am temperatures in January and July are 23.1°C and 9.8 °C respectively, while the mean 3pm temperatures in January and July are 28.8 °C and 16.4 °C respectively.

The number of rain days per month is generally evenly distributed throughout the year, ranging from approximately 7 days in July up to 10 days in November through to March. However, higher mean monthly rainfall was experienced during the spring, summer and autumn, with lower rainfall during winter.

There is a clear seasonal pattern in wind direction with summertime south-easterly winds generally from November to April, and wintertime north-westerly generally from May to October. Maximum monthly wind speeds may reach 30km per hour by 9am and increase to over 30km an hour by 3pm.

4.2.2 Dust Impacts and Controls

SKM report that the main source of dust at the Enviroking site is from vehicles, mainly road tankers, accessing the site on the unsealed driveway.

SKM advise that the dust from this source is adequately managed at the moment, with the road being watered to minimise dust emissions.

4.2.3 Odour Impacts

Odour emission rates were determined from odour emissions of oil and grease trap waste made from facilities serviced by the proposed BMG waste management facility at Kelso, a facility similar to Enviroking. Table 5.1 of SKM’s report summarises the odour concentration/intensity results and is reproduced below.

Source	Date Sample	Odour Concentration (OU/m ³)	Distinct Odour Concentration (OU/m ³)
Greasetrap	23 June 2005	1835	9.9
Greasetrap (agitated)	24 June 2005	2464	-
Oil bund	24 June 2005	414	-

SKM modelled a worst case dumping scenario of 23 tonnes of waste per hour for every hour of the year. In addition, the model scenario had been formulated only as a worst case odour concentrations for the waste material, based on laboratory testing of odours from the BMG Kelso operation. The worst case concentrations are 2,000 OU/m³ for undisturbed material and 10,000 OU/m³ for agitated material.

Three worst case hourly odour emission sources to outside air were identified:

- Source 1: Being odour emissions caused by filling of the enclosed settlement and tanks at a rate of 23 times per hour. These odour emissions are assumed to be 100% controlled and discharged from the existing stack via an air pump.
- Source 2: Odour emissions caused by the dumping of 23 tonnes per hour of waste material into the primary holding tanks from delivery tankers. This material is assumed to be agitated.
- Source 3: Fugitive odour emissions from the open to air pits within the existing building. This source is considered to be undisturbed material.

SKM conclude that the addition of the new ventilation system will improve odour levels in the immediate vicinity of the Enviroking facility (ie for the employees) from 7OU/m³ to 0.6OU/m³, while the odour levels at the nearest residences will remain at approximately 0.2OU/m³.

SKM advises that there are no other industries located in close proximity to the Enviroking site, and therefore there is no potential of expansion of the Enviroking to impact cumulatively with any other local odour sources, such that the amenity of the surrounding sensitive receivers would decrease.

4.2.3.1 Surrounding Area

As noted above, the Bloomfield open cut mine occupies the land to the north of the subject site and produces airborne particulate matter. Otherwise the site is surrounded by rural uses, with the nearest residence located approximately 750 metres from the Enviroking building. There are no other major sources of air pollution or odour in the area.

4.2.3.2 EPA Air Quality Criteria

The results discussed in **Section 4.2.3.3** compare to the odour criteria of 7 OU/m³ for the 99th percentile concentration at single residences and 2 OU/m³ in urban areas.

4.2.3.3 Ameliorative Measures

SKM propose that a new ventilation system comprising a hood over the primary discharge point from the delivery tankers and 1.03 m diameter stack be installed to control odours from Sources 1 and 3.

Based on the predicted worst case emission, SKM used AUSPLUME to analyse dispersion of the odours. The maximum odour concentration on site is predicted to be 2 OU/m³ and at the most affected external receptors, being the nearby residences located south of the facility less than 0.3 OU/m³.

No other works are required to ameliorate impacts from dust.

4.3 Water Issues

4.3.1 Ground Water Impacts

None of the water and solids to be disposed of by irrigation and ground injection contains pollutants or contaminants. As a result, there is no potential for contamination of groundwater. The EMP attached as **Appendix H** required that land application not occur on land where the regional groundwater is within 3 metres of the surface.

4.3.2 Surface Water Impacts

As with groundwater, there is no potential for contamination of surface water, since the irrigation water contains no pollutants.

As a precaution, the EMP attached as **Appendix H** contains a set of guidelines setting out buffer distances from utilisation areas to surface waters (100 metres), farm dams (30 metres), drinking water bores (250 metres) and other bores (50 metres).

4.3.3 Flooding

The Enviroking liquid waste facility is not subject to flooding.

4.3.4 Water Supply and Sewerage Requirements

Domestic water is provided by roof water tanks and sewage is treated and disposed of by way of septic tanks.

4.4 Health Issues

4.4.1 Chemically Treated Input Materials

The EMP attached as **Appendix H** obliges client companies to control the input materials. Regular testing is undertaken to ensure that there are no contaminants in either the input or output materials. None of the materials used in the treatment process are considered harmful – refer to the MSDS attached as **Appendix F**.

4.4.2 Potential Impact on Nearby Residents, Pedestrians, Workers, etc

The only potential impact on workers within the plant or on other nearby persons is odour. SKM were requested to assess potential impacts and to advise on any required ameliorative measures. SKM advised that with the existing ventilation system employees could be exposed to unacceptable odour levels, although as noted in **Appendix D** in practice there are currently no perceived problems. Installation of the proposed ventilation system will reduce odour impacts on site to the standard set by EPA for single residences, without significantly affecting nearby residents.

4.4.3 Ameliorative Management Measures

SKM's report attached as **Appendix I** recommended installation of new ventilation equipment which will reduce impacts on both employees and nearby residents to acceptable levels. Details of the new equipment are shown in the development plans attached as **Appendix E**.

4.5 Visual Considerations

4.5.1 Existing Visual Environment

The site is isolated and separated from its neighbours by bush. The operations area is not visible from the neighbouring properties or from any public road.

The existing buildings are not prominent, with the main building having a ridge line approximately 6 metres above the adjoining natural surface level.

4.5.2 Potential Impact

The proposed extensions to the building are all lower than the current building, except for the new vent stack which will be approximately 10 metres above ground level.

The proposal will have minimal impact on the visual environment.

4.5.3 Ameliorative Measures

No ameliorative measures are considered necessary.

4.6 Traffic

4.6.1 Traffic Routes

As described in **Section 3.3.19**, all trucks use John Renshaw Drive. 77% of all vehicles (74% of trucks) enter and leave the site and travel east towards the New England Highway.

4.6.2 Adequacy of Road Network and Associated Implications

The traffic assessment prepared by TPK Associates Pty Ltd and attached as **Appendix K** concludes that the increase in capacity of the land use business operation will not generate an increase in traffic that would have an adverse impact on the road network or intersection capacity.

4.6.3 Proposed Access and Parking Arrangements

The traffic assessment attached as **Appendix K** concludes that the existing intersection with John Renshaw Drive will continue to manage the road safety in terms of road environment requirements including safe intersection sight distance.

It is proposed that private vehicles will be parked around the operations and office buildings, as they are at present – refer to **Figure 4**. Tanker trucks will be parked on the hardstand area outside the operations building.

There is more than sufficient room on site to accommodate these vehicles.

4.6.4 Mitigation Measures Required

No mitigation measures are required.

4.7 Noise

4.7.1 General

Potential sources of noise have been identified as construction, operation and traffic.

The level of operational and traffic noise is not expected to change significantly from the existing situation, since the number and type of equipment will not change.

4.7.2 Existing Situation

The subject property is relatively isolated, with the nearest neighbour located approximately 750 metres distant from the operations building. The closest site boundary is approximately 80 metres from the operations building.

The existing stack vents are to the atmosphere, but is not considered to be noisy, either within the building or in the yard outside the building – normal conversation is possible in the yard in front of the treatment building. The ventilation stack is inaudible at any of the property boundaries.

All the pumps are located within the building and in any case the pumps are not noisy.

The driveway used by all traffic entering and leaving the site is located centrally along the frontage to John Renshaw Drive and does not pass close to any neighbours.

4.7.3 Potential Noise Sources and Impacts

Noise levels from mechanical equipment will be similar to the existing levels, since as noted above, no changes to the number or types of equipment are proposed.

Similarly traffic noise is not expected to increase significantly, since although the tanker trucks will perform more trips to deliver the additional capacity, the trucks will be similar to those used at present.

The proposed air extraction system will vent to the atmosphere but has been sized to provide for an exit velocity of the exhaust air of 10 m/s, similar to the existing stack. It is expected to create a similar noise level as the existing stack, which as described above, does not present a noise problem.

In summary, there are not expected to be any unacceptable noise impacts resulting from the proposal.

4.7.4 Mitigation Measures Required

No mitigation measures are considered necessary.

4.8 Soil and Water

4.9 General

The treatment systems as described in **Section 3.3** will not alter as a result of the increased throughput of the plant, except that the building will be more enclosed and the unloading area will be covered. Some effluent will be trucked away, as it is at present, while the remainder will be pumped to nearby properties.

4.10 Existing Situation

Presently waste material is trucked to the site in sealed tanker trucks and discharged directly into the primary tanks located within the building. All treatment is done within the building, with treated effluent stored in an external dam prior to loading back onto trucks for transport to disposal.

4.11 Proposed Treatment and Disposal Methods

Waste will be trucked to the site as it is at present and the treatment process will also be similar to the existing arrangements. The unloading area will be covered to reduce any possibility that spillages will be washed onto the surrounding ground by runoff. Additional tanks are proposed to store treated effluent (refer to the drawings in **Appendix E**) and these will be bunded to ensure that any spills are contained. No waste or treated effluent will be stored outside the building.

After treatment, the effluent and other products are considered to be harmless and suitable for ground application – refer to the test results in **Appendix H**. As described in **Section 3.3.4**, treated effluent water, food sludge (not containing any contaminants) and non-contaminated food waste will be pumped or trucked to nearby properties for land application. Because of the harmless and inert nature of these treated materials, no pollution or contamination will occur.

Non-contaminated grit, sand and solids will be transported to land fill.

Other products will be disposed as described in **Section 3.3.4** - floating oil (from industrial oily waters) to mineral oil recyclers and contaminated effluent water from industrial oily waters to sewage treatment plants operated by Hunter Water Corporation.

4.12 Potential Sources of Pollution or Contamination

The potential sources of contamination or pollution are limited to spillages of waste material being transported to the site, oil or contaminated effluent water being transported from the site to disposal, spillages during unloading, or to non-treated waste being pumped to ground application.

All waste material and treated wastes are transported in sealed tankers, so the risk of spillages during transport is considered to be acceptably low.

The unloading areas are covered and bunded to contain any spillages during unloading.

Once within the treatment building, all wastes are contained within sealed tanks. Once treated, the effluent does not present a risk.

The risk of untreated or partly treated waste being pumped to disposal is considered to be low because of the arrangement of the pumps and pipework within the building. As shown in the flow diagram in **Figure 5**, all waste must pass through the system, receiving treatment at each stage and it is generally not possible to bypass any stage. The EMP attached as **Appendix H** provides for regular testing of output materials to check for

contamination and also provides control measures for a range of identified environmental risks.

4.13 Mitigation Measures Required

No further mitigation measures, apart from those already included in the proposed works as described above, are considered necessary.

4.14 Hazards

4.14.1 Potential Hazards and mitigation measures

There are a number of potential hazards associated with the proposal. These hazards, together with the associated mitigation measures are identified in **Table 7**.

Potential hazard	Mitigation measure
Contaminated input GTW material	Undertake testing of new waste sources. Undertakings from clients as to sources of waste
Spillages of raw GTW or oily waste material	Unloading areas and tanks are bunded to ensure spillages are contained
Extended wet weather	Treatment plant has capacity to store 5 days treated waste, after which waste will be transported to Hunter Water STP, or divert liquids to alternative treatment facilities. Some waste producers have alternative means of disposing of waste.
Excessive application of treated waste	Soil nutrient and potential contamination levels are checked before and after utilisation. Operations are not conducted in excessively wet soils.
Long term accumulation of contaminants or other chemicals, including nutrients	Soil nutrient and potential contamination levels are checked before and after utilisation.
Groundwater or surface water contamination	Treated wastes are not applied unless the regional groundwater level is below 3 metres from the surface and not within specified buffer distances from water bodies (see EMP Section 3.5).
Odour transmission to neighbouring properties	SKM Odour report confirms that odours will be within acceptable levels.
Risks to human and animal health	The wastes are not considered harmful, but animals and root vegetables are restricted for specified periods after application (see EMP Section 3.6.3).

Table 7 – Potential hazards

The EMP attached as **Appendix H** identifies each of these potential hazards and the corresponding mitigation measure. The EMP is considered to adequately identify and deal with the potential hazards.

4.15 Cumulative Impacts

There is some limited potential for long term disposal of the treated products on a confined area to result in accumulation of some elements or compounds in the soil or water of the disposal sites.

In practice, this will not occur, since the disposal site will be moved on a regular basis, if only to spread the benefits of the disposal products over a wider area.

The EMP attached as **Appendix H** provides for testing of utilisation sites to identify build up of contaminants and nutrients after application.

5 Justification for the Proposal

5.1 Need and Justification of Proposal

The existing operation meets a clear need in the region for environmentally safe disposal of liquid waste, which would otherwise be buried or discharged to sewer. The operation makes use of the value of the waste, by treating it as a resource and minimising the volume to be buried or discharged to sewer.

There is an increased demand for the service and the operation needs to expand to meet that demand.

The expansion will largely comprise increased throughput of the existing plant, with only peripheral works, such as the workshops and new ventilation system, required.

5.2 ESD Principles

Schedule 2 of the Environmental Planning and Assessment Regulation 1994, which deals with matters for inclusion within the Environmental Impact Statement states that for the purpose of the Schedule “the principles of ecologically sustainable development” are as follows:

- “(a) the precautionary principle – namely that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.”*
- “(b) Inter-generational equity – namely that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.*
- “(c) Conservation of biological diversity and ecological integrity.*
- “(d) Improved valuation and pricing of environmental resources.”*

As outlined previously within this report, the proposed development involves the expansion of an existing liquid waste facility involving minimal construction, the containment of all potentially dirty water and reuse in the recycling process, no potential for groundwater contamination and accordingly negligible ecological impacts. The proposal does involve the reuse and recycling of food waste from the food production industry which otherwise would have been diverted to land fill. This does recognise the value of the material which is returned to the environment as a usable agricultural soil conditioner and fertiliser while at the same time reducing land fill demands.

Accordingly, it is considered that the proposal is consistent with the principles of ecologically sustainable development.

5.3 Availability of Waste Inputs and Demand for Products

All processors and retailers of food are required by public water authorities to install grease interceptor traps to prevent grease and high organic content wastes getting into the sewerage treatment system. These wastes are slow and difficult to treat through conventional sewage treatment. Therefore a continual demand for pumping out these traps occurs. They are preferably pumped out monthly.

Currently these wastes are treated for land application but this proposal includes the commissioning of equipment to separate the fats and oils for recycling to industry or for biodiesel production at other facilities.

Water for irrigation is a diminishing resource nationally and a major purpose of this application is to facilitate its reuse under existing regulatory provisions and eliminate the current requirement to dispose of it at sewage treatment facilities where it is wasted.

5.4 Alternatives Considered

The alternatives are:

1. Retain the capacity of the existing operation to the limit imposed by the current consent (5000 tonnes per year);
2. Allow the capacity to increase to the limit imposed by the EPA licence (15,000 tonnes per year);
3. Increase the capacity of the plant as proposed to 20,000 tonnes per year to permit the full and efficient use of the facility;
4. Close the existing operation on the subject site;
5. Meet any shortfall in treatment capacity as a result of 1, 2 or 4 by opening a new plant at another location, or by disposing of waste to landfill and sewer.

There appears to be no benefit in restricting the capacity of the plant to the arbitrarily imposed limit of 5,000 tonnes per year. This EA has demonstrated that the plant can operate efficiently at the proposed limit of 20,000 tonnes per year, with minimal expenditure, despite the original licence being for a capacity of 15,000 tonnes per year. It is proposed to increase the licensed capacity to 20,000 tonnes per year.

There is no reason to close the existing operation, which has operated for many years in its current location.

Opening a new plant would have no environmental advantages over the existing plant and would be significantly more expensive.

The proposed increase in capacity is considered to make the most efficient use of the existing plant and improves the environmental performance of it by adding odour control ventilation to the existing building.

5.4.1 Alternative Locations

No other sites have been actively considered. The current operation is more than satisfactory and there has been no indication that another site would have any benefits.

Moving to a new site would place significant financial burdens on the Company and it is not proposed to further consider alternative sites (ie Alternative 3.) for the current operation.

No advantages can be identified in establishing a new plant at another location to meet any shortfall in capacity if Alternatives 1. or 2. are pursued. The existing operation has the physical capacity to treat up to 20,000 tonnes per year and dispose of the products locally in an environmentally safe manner. Accordingly, it is not proposed to further consider providing additional capacity at an alternative location.

5.4.1.1 Subject Site

The subject site is suited to the proposal, being in a rural area and with no close neighbours. Disposal sites are readily available in the immediate vicinity.

There are no adverse impacts identified in this EA which would result from maintaining the existing operation or increasing its capacity to 20,000 tonnes per year.

5.4.2 Alternative Operator

There has been no new liquid waste facility established in the area for over 10 years. Much liquid waste is consequently transferred to Sydney at significant environmental cost (fuel use). The only other existing facilities are the Transpacific/Cleanaway treatment facility at Kooragang Island and a small land application operation for grease trap and food waste at Elderslie near Singleton. The latter is not a treatment facility.

5.4.3 Treatment Options

The existing treatment process is considered to be satisfactory and no changes are proposed.

5.5 Ability to Meet Performance Requirements

Enviroking has been operating the existing plant since 2000 and has a licence from the EPA. The increased throughput will not significantly change the management or operational requirements of the business, which can be expected to continue to perform in a satisfactory manner.

6 Draft Statement of Commitments

The following table sets out potential impacts and the relevant ameliorative measures and or environmental safeguards.

Impact	Nature of Impact	Ameliorative measures /environmental safeguards
Licensing	Regulatory	Enviroking will obtain and maintain the necessary licences from EPA and other relevant authorities
Bunded Drying Storage Area	Rainwater ingress	The bunded drying storage area will be covered with an open sided roof.
Hardstand area	Risk of pollution	The hardstand loading and unloading areas will be sealed.
Contamination	Oily wastes contaminating grease trap wastes	Enviroking will ensure oily waters are delivered into the appropriate tanks
		Enviroking will wash out vehicles carrying oily wastes prior to carrying grease trap wastes
		Enviroking will ensure no cross connection of oily waters and grease trap waste systems until all waters have received final treatment

Impact	Nature of Impact	Ameliorative measures /environmental safeguards
	Contaminated input GTW material	Enviroking will undertake testing of new waste sources. Undertakings from clients as to sources of waste will be obtained
	Treated waste analysis	Enviroking will test samples of treated waste for specified contaminants
Spillages	Potential spills from unloading or treatment operations	Enviroking will ensure unloading areas and tanks are bunded to ensure spillages are contained
Wet weather	Inability to apply treated waste products to disposal areas	Enviroking will ensure that the treatment plant has capacity to store 5 days treated waste, after which waste will be transported to Hunter Water STP, or will divert liquids to alternative treatment facilities.
Application rates	Excessive application of treated waste	Enviroking will ensure that soil nutrient and potential contamination levels are checked before and after utilisation and will not conduct operations on excessively wet soils.
	Management of nutrient loading	Enviroking will calculate the application rate using the methods set out in the EMP Section 3.3
Cumulative impacts	Long term accumulation of contaminants or other chemicals, including nutrients	Enviroking will ensure that soil nutrient and potential contamination levels are checked before and after utilisation.
Water bodies	Groundwater or surface water contamination	Enviroking will ensure that treated wastes are not applied unless the regional groundwater level is below 3 metres from the surface and not within specified buffer distances from water bodies (see EMP Section 3.5).
		Enviroking will select farms where odour impact is likely to be minimal having regard for proximity to roads and dwellings
Health	Risks to human and animal health	Enviroking will advise farmers of restricted periods after application for animals and root vegetables (see EMP Section 3.6.3).

Impact	Nature of Impact	Ameliorative measures /environmental safeguards
Farming practice	Use of suitable crops	Enviroking will work with farmers to ensure suitable crops which are responsive to fertilisers
	Application methods	Enviroking will use sub-soil injection to apply liquid wastes and will arrange for the farmer to undertake ploughing on the same day
Administration	Environmental Management Plan	Enviroking will ensure that the EMP is kept up to date with relevant information and distributed to registered holders
Record keeping	Transport certificates	Enviroking will maintain records of all incoming wastes transported as required under licence conditions
		Enviroking will also maintain records of outgoing loads listing: Date and time Truck and driver Property name and paddock
	Application records	Enviroking will provide copies records of applications to farmers
Suitability of farms and soils	Soil testing	Enviroking will undertake pre-and post-application agronomic testing to ensure soils are suitable and to prevent over-application
	Contamination	Enviroking will undertake pre-and post-application contamination testing to ensure soils are suitable and to prevent over-application
	Selection of properties	Enviroking will select properties based on criteria set out in the EMP Section 3.6.1

7 Conclusions and Key Findings

7.1 Benefits of the Proposal

The benefits of the proposal include:

- Nutrients are returned to the soil to the benefit of agriculture;
- Landfill is eliminated, or at worst greatly reduced;
- Reduced need for chemical fertilisers;
- Improvement in soil organic matter and resulting improvements in soil fertility and crop yield;
- Reducing loads on sewage treatment plants and reticulation systems;

- Assisting with regeneration of land devastated by mining;

7.2 Potential Environmental Impacts

This EA has considered the potential environmental impacts of the proposal, and in particular the matters identified in the DGRs. These were:

7.2.1 Air quality

Air quality, both within the treatment building and in the surrounding area will be improved by the installation of a new ventilation system – refer to SKM's Odour Report attached as **Appendix I**

7.2.2 Soil and water

Land application of the treated GTW and use of effluent for irrigation will have a beneficial impact on agricultural production and mining rehabilitation and will be conducted in accordance with any requirement issued for exemptions under the Protection of the Environment Operations Amendment (Scheduled Activities and Waste) Regulation 2008.

7.2.3 Traffic

The proposal has been demonstrated to have no adverse impacts and will not require any intersection or road upgrades.

7.2.4 Waste Management

The proposal provides a solution to a waste management issue and does not itself create any new concerns.

7.2.5 Noise

The treatment plant is remote from dwellings (the nearest is approximately 750 metres distant) and in any case does not create significant noise.

7.2.6 Visual

The proposal to increase the capacity of the treatment facility will not require any significant construction, with the most visible feature being the new ventilation stack. In any case, the facility is located more than 250 metres from, and is not visible from, the nearest public road (John Renshaw Drive).

7.3 Compilation of Ameliorative Measures

The following is a summary of the ameliorative measures incorporated into the proposal:

- All tanks and truck unloading areas are bunded to contain spills;
- There are no cross-connections between the oily water and GTW treatment systems;
- The sources of wastes are controlled to ensure no unsuitable materials are brought to the plant;
- Sites for disposal of treated wastes are selected based on criteria such as buffer distances, slope, flooding and soil type to control nutrient levels;
- Pre-application and post-application tests are undertaken on all sites;
- Wastes are tested for contamination;
- Installation of a new ventilation system to improve air quality within the treatment building and in the surrounding area;

- Provide capacity to store up to 5 days production of treated waste to cope with extended periods of wet weather;

7.4 Approvals and Licences to be Obtained

Variations to POEO Act license No L11180 specifically to reflect new volumes.

Exemption for surface application of solidified treated grease trap and food waste.

Note that if the application for exemption for surface application is not approved then the plant will operate under the existing exemption for land application of liquid treated grease trap waste. This application is not dependant on the approval for surface land application of solid treated GTW.

7.5 Conclusion

The proposal is to expand the licensed capacity of an existing liquid waste treatment facility on a site at Lot 931 DP816814, John Renshaw Drive Black Hill which has operated for many years without problem. The plant has been demonstrated to have the physical capacity to handle the proposed volume of wastes.

The proposal includes minor extensions to the building and installation of a new ventilation system.

The liquid waste facility provides for a treatment and disposal process which makes beneficial use of waste products. These products would otherwise be transported to sewage treatment plants.

There are no unacceptable environmental hazards associated with the proposal.