

**WASTE WATER MANAGEMENT PLAN
FOR
SPF DIANA AUSTRALIA PTY LTD
91 GARDINER STREET, RUTHERFORD NSW**

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Benbow
ENVIRONMENTAL

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1. INTRODUCTION

Benbow Environmental has been engaged to prepare a Waste Water Management Plan for the proposed development located at Lot 206, 91 Gardiner Street, Rutherford. The proposed development would manufacture a liquid palatability enhancer which is a liquid petfood ingredient supplied to petfood manufacturers.

1.1 SITE LOCATION

The proposed facility will be located at Lot 206, 91 Gardiner Street, Rutherford. Figure 1-1 presents the location of the site. Figure 1-2 shows the location of the entire property to be subdivided subject to a separate development application. Figure 1-3 shows the land zoning, this site is in an IN1 general industrial zone.

Figure 1-1: Site Location (Aerial View)

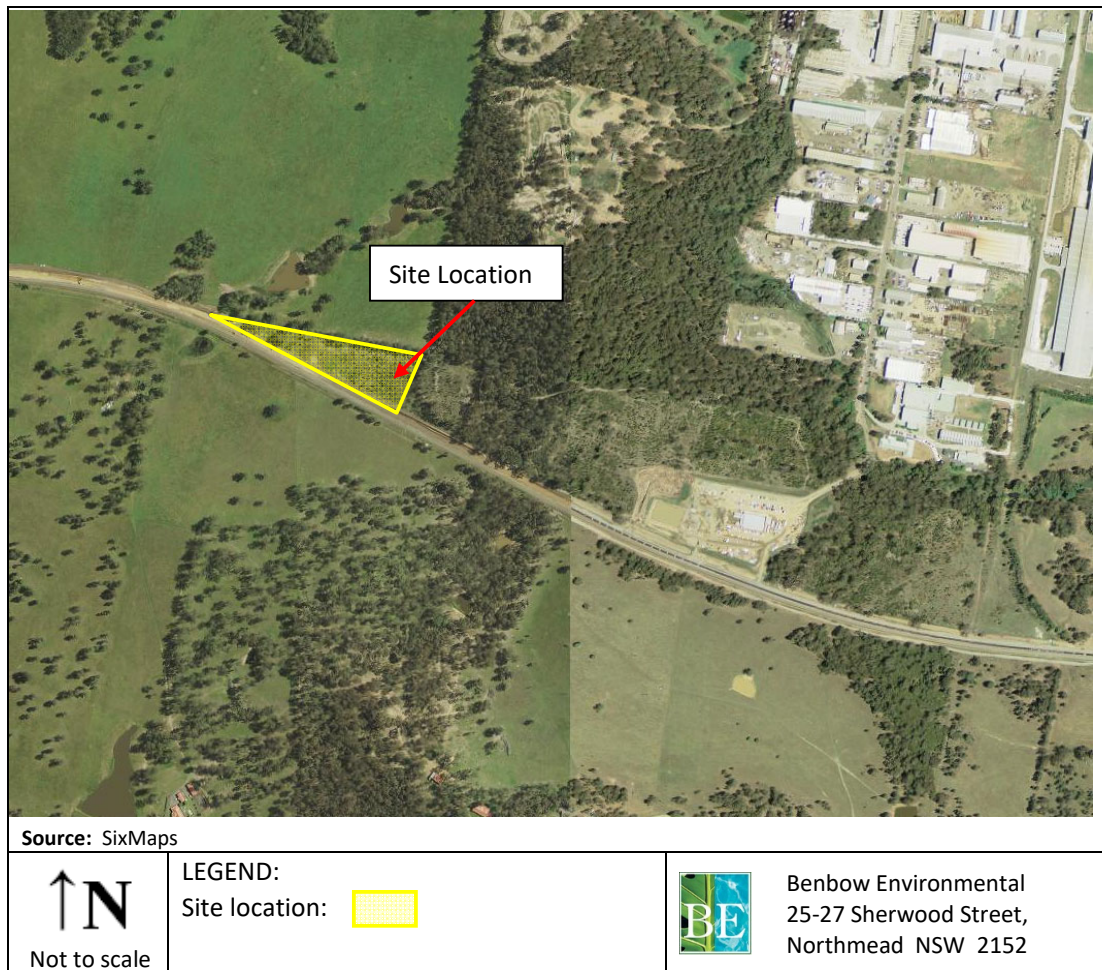


Figure 1-2: Aerial Photograph of the Site and Surrounds



Source:



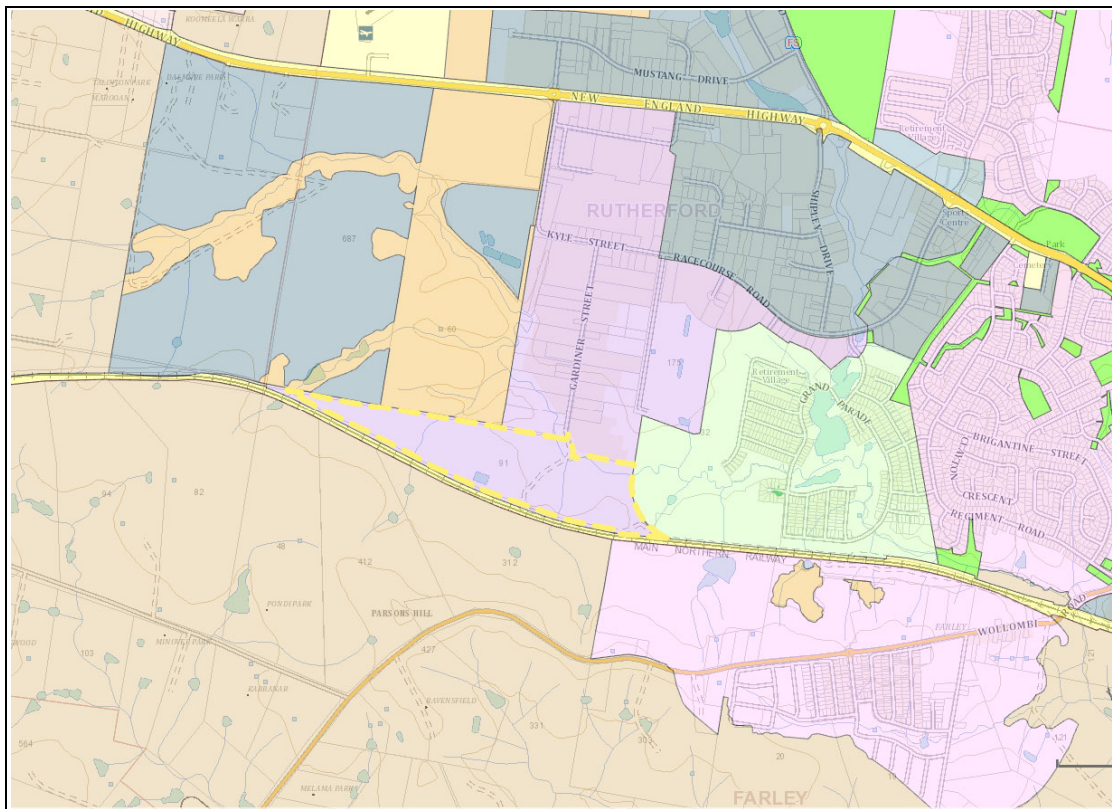
Not to scale

LEGEND:



Benbow Environmental
25-27 Sherwood Street,
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Figure 1-3: Land Use Zoning Map



Source: NSW ePlanning Spatial Viewer 2021

 Not to scale	LEGEND: Site Boundaries		 Benbow Environmental 25-27 Sherwood Street, Northmead NSW 2152
	Zone B1 Neighbourhood Centre B2 Local Centre B3 Commercial Core B4 Mixed Use B5 Business Development B6 Enterprise Corridor E2 Environmental Conservation E3 Environmental Management E4 Environmental Living IN1 General Industrial	R1 General Residential R5 Large Lot Residential RE1 Public Recreation RE2 Private Recreation RU1 Primary Production RU2 Rural Landscape SP1 Special Activities SP2 Infrastructure SP3 Tourist	



2. PROPOSED SITE OPERATIONS

The proposed development will manufacture a liquid palatability enhancer which is a liquid petfood ingredient supplied to petfood manufacturers.

2.1 PROCESS DESCRIPTION

The process consists of:

- Receiving

Trucks arrive at the facility to drop off pallets of raw materials including:

- Beef Livers
- Chicken Livers
- Chicken Guts
- Chicken MDM (Mechanically deboned meat)
- Salmon
- Kangaroo

The packaging of the incoming material is manually removed and the raw material is transferred into plastic lined crates.

- Unfreezing (if required)

Most of the incoming material is delivered frozen. Frozen raw materials crates get moved into a tempering room (unfreezing room) which is heated with steam from the boiler.

- Grinding

Other material and frozen material once thawed gets tipped into a grinder and the resultant slurry gets transferred into a mixing tank.

- Cooking and adding ingredients

The mixing tank receives flavour additives before being transferred to the heated processing tank (reactor) where the pH and temperature is controlled (pH with dosing phosphoric acid and caustic soda) and temperature from the steam from the boiler. Strict control of these parameters is necessary for the efficacy of the enzymes which are added as a powder manually via a hatch at the top of the tank. The enzymes and temperature liquify the slurry. Typical temperature of the liquid is 100°C, and max is 130°C.

- Sifting

This liquid is then sifted (screened using a vibrating screen) which removes solids such as bits of bone etc (material that the enzymes cannot break down) which is transferred directly into a bin as solid waste which is removed offsite by a licensed waste contractor.

- Transfer to storage tanks

The product is cooled to 40°C transferred to bulk storage tanks where it is either decanted into IBCs BIBs Pallecons or Drums (mostly IBCs) or it is unloaded directly from the bulk storage via a tanker truck.

- Quarantine (if required)

Some of the products are quarantined for a designated period within the facility.



2.2 HOURS OF OPERATION

The proposed development will operate 24/7.

2.3 WASTEWATER OPERATIONS

Wastewater is generated from the following activities:

- Washdown of equipment (grinder and screening);
- Cleaning processing and storage tanks; Cleaning operations for tanks occur once every 2-3 weeks and descaling with nitric acid occurs approximately every 3 months;
- Washdown of processing areas including floors, bins, tables etc; and
- Condensation from the tempering (unfreezing) rooms.

Processing areas that require washdown and the tempering rooms have sealed floors that are graded to collection pits which are piped directly to underground holding tanks at the wastewater treatment plant located at the rear of the site. Tank pipe outlets are designed to divert wastewater from cleaning operations directly to lines which connect to the same underground treatment holding tank.

The wastewater is pumped through a filtration plant for gross pollutants, this separates the solids using a screen which fall into a bin. The solid waste is then transferred to an enclosed bin in the waste storage area.

After the gross solids are removed the liquid is transferred to a dosing tank where the liquid is dosed with an acid or base to bring the pH into an acceptable range.

From the dosing tank the liquid is transferred to a dissolved air floatation water treatment device (DAF). This involves dissolving air in the water under pressure and then releasing the air in a flotation tank where the tiny bubbles cause the suspended matter to float to the surface where it can be removed. The DAF also removes sludge that falls to the bottom. The surface sludge is removed to a storage tank to be removed offsite by a licenced waste contractor.

Water from the DAF is then transferred to a bioreactor. Bioreactor's typically involve combining a filtration process with biological treatment where microorganisms breakdown the nutrients typically using aeration to stimulate aerobic bacteria. This effectively polishes the water before being discharged to the sewer under a trade wastewater agreement. Sludge is also generated in the bioreactor and will be removed offsite by a licenced waste contractor.

An average of 30,000 L of wastewater will be discharged to sewer each day.

2.3.1 Equipment

The wastewater treatment equipment consists of:

- Filtration Plant for Gross Pollutants;§
- Dosing Plant;
- DAF Plant; and
- Bio-reactor.



3. WASTEWATER MANAGEMENT

This section presents the wastewater management requirements:

3.1 TRADE WASTEWATER AGREEMENT

A trade wastewater agreement will be made with Hunter Water. This will provide the following requirements:

- Maximum and average daily (kL/day) and instantaneous (L/s) discharges;
- Allowable concentration limits of pollutants of concern;
- Frequency and testing regimes.

3.2 WASTE MANAGEMENT

The following table presents the wastewater management for the proposed development.

Table 3-1: Wastewater management

Waste Type	Estimated Maximum Quantity	EPA Waste Classification ¹	Management
WWTP DAF Sludge	1,500 tpa	Liquid waste	Picked up by licenced waste contractor. The licenced waste contractor would test and classify the waste for the purposes of reuse and take the waste to a resource recovery facility licenced to accept the waste where the waste would be reused, likely composting.
WWTP Bioreactor Sludge	6 tpa	Liquid waste	Picked up by licenced waste contractor. The licenced waste contractor would test and classify the waste for the purposes of reuse and take the waste to a resource recovery facility licenced to accept the waste where the waste would be reused, likely composting.
WWTP Wastewater	11,000 tpa	Liquid waste	Discharged as trade wastewater to Hunter Water Sewer system under a trade wastewater agreement.
WWTP Solids	11 tpa	General soil waste (putrescible)	Picked up by licenced waste contractor. The licenced waste contractor would test and classify the waste for the purposes of reuse and take the waste to a resource recovery facility licenced to accept the waste where the waste would be reused, likely composting.

1. Waste classification as per the EPAs Waste Classification Guidelines

3.3 ODOUR CONTROL

The wastewater treatment plant will be enclosed with automatic closing roller doors.

The diffuse emission sources from the bin storage area and the WWTP gross pollutant filtration plant will be serviced by extraction registers. This WWTP/bin storage ventilation system is expected to extract approximately 0.14 m³/s and exhaust this through a vertical stack located 3m above the apex of the WWTP roofline.

All enclosed vessels will be vented to the WWTP/bin storage ventilation system.

Sample ports in the exhaust stack are to be installed in accordance with AS4323.1 with accessible platform should compliance monitoring be required.

3.4 SPILL CONTROL

All aboveground storage is required to be bunded. Bunding will contain a minimum capacity of 110% of the largest storage vessel.

3.5 EQUIPMENT MAINTENANCE

All equipment must be maintained in accordance with manufacturers specification. The bioreactor efficacy relies on the maintenance of a healthy population of microorganisms, routine inspections to ensure the equipment is operating effectively will be undertaken in consultation with the supplier.

This concludes the report.



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4. LIMITATIONS

Our services for this project are carried out in accordance with our current professional standards for site assessment investigations. No guarantees are either expressed or implied.

This report has been prepared solely for the use of SPF Diana Australia Pty Ltd, as per our agreement for providing environmental services. Only SPF Diana Australia Pty Ltd is entitled to rely upon the findings in the report within the scope of work described in this report. Otherwise, no responsibility is accepted for the use of any part of the report by another in any other context or for any other purpose.

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