

# Omega Proteins Ltd.

Penrith

---

**Report Title:** Non Technical Summary MFO

---

**Permit:** EPR/HP3238AF

---

**Issue Date:** November 2020

---

**Report Reference:** OP-PV-RO7Cv2

---

---

**Submitted to:**

Environment Agency

---

**Authorised for issue by:**

Jane Brindle  
Group Technical Manager

---

## Contents

1	Introduction	1
1.1	Document Scope	1
2	Process Description	2
2.1	General	2
2.2	New Oxidiser	2
3	Potential Emissions and Control	3
3.1	Air Quality	3
3.2	Odour	3
3.3	Noise	3
3.4	Vibration	3
3.5	Dust	3
3.6	Water	3
3.7	Management	3

# 1 Introduction

---

## 1.1 Document Scope

This document provides information in support of the Environmental Permit variation for the Omega Proteins(Penrith) animal by-products processing facility in Penrith. The National Grid Reference for the centre of the site is NY 50021 29642 (349996 529635)

The Omega Proteins facility at Penrith is a dedicated Category 3 processing plant and the following animal by-products are processed at the facility:

1. Poultry by-products, including offal, skin, carcase and off-cuts.
2. Poultry feathers
3. Poultry blood
4. Mixed species by-products, including offal, skin, carcase and off-cuts.
5. Mixed species blood

The site is currently regulated by the Environment Agency under an A1 permit and is applying to vary this permit for the addition of the following activity:

New multi-fuel thermal oxidiser (Schedule 1 reference – 5.1 Part A(1)(a) – using waste as a regular or additional fuel)

The multi-fuel oxidiser will perform the same function as the existing oxidisers in providing odour abatement with steam production. It will have flexible fuel options and be capable of firing on solid biomass fuel (e.g. MBM) as well as liquid biomass (e.g. tallow) and natural gas. A steam turbine added to the equipment will enable electricity to be produced from surplus steam.

An amendment to this variation includes a change to the Directly Associated Activities, with the installation of one gas fuelled thermal oxidiser to replace the existing two units.

## 2 Process Description

---

### 2.1 General

The site is a rendering plant where raw materials (animal by-products – ABP) are delivered by bulk trailer and tipped into enclosed hoppers located in enclosed storage buildings. Blood is transported in tankers and discharged into dedicated tanks fitted with level alarms and inside bunds.

Raw materials are size transformed and then heated to produce the products. Fats and solids are separated to produce two main products. Some products are dried and milled to produce a specific solid product.

A key part of the process is odour abatement of the process which is carried out by thermal oxidation of the process fumes. A variation application is being submitted to upgrade the odour abatement on site.

### 2.2 New Oxidisers

Site is installing a new multi-fuel thermal oxidiser. This technology is utilised as the primary odour abatement for process fume and specific odour source abatement and the existing equipment will have a limited lifespan. In line with business objectives the new oxidiser will utilise renewable fuels and fuel derived from waste materials, in order to reduce reliance on fossil fuels and reduce carbon emissions. Steam recovery will be used to supply the processing plant with energy and there is the additional option of producing electricity for the plant by means of a steam turbine.

This oxidiser will perform the same function as the existing oxidisers in providing odour abatement with steam production, but allow the use of non-fossil fuels. The equipment is also designed to run on tallow or gas, should future stocks of renewable fuel be limited.

The new equipment has an increased requirement for combustion air, therefore room air will be used to meet this demand. This will decrease the demand on the bio filters for abatement of this air stream. This is explained more fully in the Installation Information document.

The existing plant (two recuperative thermal oxidisers fuelled by gas) is being replaced with one unit of the same type. The multifuel oxidiser will be run alongside this unit with increasing amounts of process fume being diverted to the new unit. Once the new multifuel oxidiser has been fully optimised and its actual capabilities assessed – this unit will be designated as primary odour abatement. The gas fuelled oxidiser will act as a support unit and emergency back-up. It will also be in use when the multifuel oxidiser is off line for maintenance (anticipated for 1-2 weeks per year). Steam raising support will be provided by a gas fuelled boiler.

## **3 Potential Emissions and Control**

---

### **3.1 Air Quality**

Assessment of current and projected future emissions shows that there will be no breach of regulatory (UK and EU) limits for air pollutants. This is discussed more fully in the ERA Risk Assessment Document and Dispersion Modelling Assessment reports.

### **3.2 Odour**

The installation collects and treats odours in accordance with published guidance for the industry in relation to Best Available Techniques (BAT). High intensity process odours are treated in two thermal oxidisers with a condenser and boiler back-up. This multifuel oxidiser will replace the existing set up as primary abatement, with support from the replacement gas fuelled oxidiser. Low intensity odours are currently treated in three biofilters.

The new oxidiser set up is designed to provide additional effective odour abatement under the same conditions as the existing equipment, but with more capacity. Foul air sources and room air can also be accommodated in the requirement for combustion air, which is discussed in the Installation Information Document.

### **3.3 Noise**

Noise management and assessment is in place to minimise noise impacts to below significance levels. The noise assessment carried out for the multifuel oxidiser is discussed more fully in the Risk Assessment document and the separate Noise Assessment.

### **3.4 Vibration**

The system does not use equipment that will have sufficient power to generate vibrations that could be felt beyond the installation boundary.

### **3.5 Dust**

All operations involving dusty materials are enclosed to minimise potential releases. The renewable fuel will be delivered to a designated storage area and tipped into receiving bins under cover. The ash is removed at specific points under the combustion area and stored in lidded receptacles prior to removal for disposal.

### **3.6 Water**

Incoming mains and borehole water is monitored by chemical and microbiological parameters to ensure it is fit for purpose.

Clean roof water is collected for re-use where feasible. The treated water from the effluent plant is of suitable quality to be re-used around the plant (bio filter irrigation, washing, boiler water), therefore limited mains water will be used.

Wash water and potentially contaminated yard water is directed for treatment in the effluent treatment plant via the existing drainage system.

### **3.7 Management**

Site is accredited to the international Environmental Management System standard ISO 14001:2015 and the Energy Management standard ISO 50001:2018 and has suitable management plans and procedures in place to ensure continued compliance to the standards.