## A. Air

**• Combustion gases and volatile compounds**

It has been considered that the risk of fugitive emissions to air is minimal. Most of the chemicals used on site are of low volatility, meaning any potential spillages would have no significant releases to the air. While incineration is mentioned in the IPPC license, no incineration activities have ever taken place at site, this has not changed during 2022.

The gas boilers are serviced on an annual basis to identify any faults that could lead to abnormal gas releases. The most recent maintenance test in April found the external and internal conditions of the gas boilers to be satisfactory and no repairs or alterations required, CO and NOx emissions were recorded during the service. The next scheduled maintenance test is April 2023.

In early 2022 an upgrade was made to the refrigerant gas leak detection system, moving to the "Parasense" system, a series of small automatic gas leak detectors linked via the Building Management System. The equipment senses the presence of refrigerant gases and raises audible and visible alarms so leaks can be quickly dealt with. These alarms are linked to an email system which automatically inform engineers on the location and severity of a leak.

**• Odours**

There were 2 unsubstantiated odour complaints received by Natural Resources Wales (NRW) during 2022. These complaints were investigated by the site environmental manager and environmental coordinator within an hour of receipt, in both cases no odour was detected on site nor in the area the complaint had originated from. This is a substantial decrease (>80%) in complaints compared to 2021. Documented odour assessments are carried out on a weekly basis by the site environmental coordinator.

**• Odour abatement**

Some of the operations carried out on site are odorous by nature. The site was designed taking this into consideration and these operations are housed in dedicated buildings

where possible and are located in the North or West end of the site, away from nearby receptors.

The main operations that could lead to odour releases are as follows:

**(a) Waste disposal / Animal By-Products Transfers**

The main control measure to avoid odour releases is regular collections and adequate storage. Table 1 below summarises the site arrangements for the different types of potentially odorous waste or animal by-products.

| Contractor | Description of Waste | Service/Disposal Route | Transport |
|---|---|---|---|
| **Waste Contractor / Transport** | | | |
| **GP Services** | Gut content / lairage waste/ DAF sludge/ Ovine blood | Transport/AD | Bulk/Tanker |
| **Biffa** | Mixed Waste, Hazardous Waste, WEEE Waste, Waste Oil, Recycled Cardboard, Plastic Metal Wood | Transport/ Sorting, Recycling and Landfill | Various |
| **Disposal** | | | |
| **APC** | Bovine Blood | Transport/Further processing | Tanker |
| **Crest Leather Rino Mastrotto Gruppo Mastrotto** | Hides/Skins | Tanning | Lorries |
| **Sarval / Advanced Proteins** | Lambs Heads/Feet | Transport/Rendering | Bulker |
| **Saria /Advanced Proteins** | Bones/SRM Incineration | Transport/Rendering/Incineration | Bulker |

In relation to blood storage and disposal, the site has dedicated procedures and they are as follows:

• Blood tanker collections are supervised by Engineering, Security, or a Yardman.

• Blood tanker driver training records are supplied by contractors.

• Copies of relevant procedures are available inside the blood storage room for reference.

• The active carbon filters are inspected every 2 months and changed every 6 months.

• Hygiene and housekeeping standards have been maintained and the blood storage room and associated areas are cleaned daily.

• The refrigerated bovine blood storage system has run well during its eighth year of use. Collection occurs daily and the nature of the system has eliminated all odours.

**(b) Lairage**

The build-up of odours in this area is inhibited by a constant circulation of air by means of air fans and air extraction. It is also minimised by adherence to cleaning schedules and compliance with company procedures. These procedures are externally monitored by the FSA to ensure food safety and hygiene.

The lairage works on a clean-as-you-go basis and as soon as the pens are emptied, the dung is removed and pen cleaned. In addition to constant housekeeping, the lairage is cleaned on a daily basis. Notice is given to NRW of planned deep cleaning of the lairage, in order for them to be aware of any potential odour issues associated with deep cleaning.

**(c) Effluent Treatment Plant**

The Effluent Treatment Plant (ETP) is housed in a self-contained building to prevent odour issues. To further prevent odour spillages, housekeeping and maintenance measures are in place and are as follows:

• Doors are kept closed when not in use and the importance of this is reiterated to staff.

• Effluent sludge is removed either daily, or every other day, depending on levels of production.

• The plant is cleaned on a daily basis and deep cleaned weekly.

• Dedicated staff monitor the functioning of the plant continuously to tackle any problems that may arise.

• Both effluent holding tanks are sealed and are fitted with active carbon filters.

To abate the odours that come with the ETP, an odour neutraliser system is fitted to the coarse screen pit and the compactor room. This expels environmentally friendly and non-hazardous perfume to counter the odour.

We have also recently invested in an automatic pH neutralising system that monitors and controls the effluent pH by chemical addition. pH serves as one of the most important parameters for measuring contamination. The pH controller has a present pH set point for the effluent and uses this measured value to determine whether the effluent is within compliance with that set point. If not, chemical pumps are operated to inject acidic or caustic solutions as required to bring the effluent in the holding tank to the correct level. This system has greatly improved the clarity of wastewater.

**(d) Drainage System**

The drainage system is served by a sequence of pumping pits fitted with dual pumps, failure alarms, high- and low- level controls, and high- and low- level alarms. The alarms will immediately notify ETP staff of any failures that could result in effluent build up, and subsequently potential spillages and bad odours, so immediate action can be taken. At present, the system is undergoing a gradual update by bypassing the pumping pits to discharge direct to sewer. This will grant more controlled and constant flow and prevent the build-up of deposits and the associated costs of cleaning of the pumping pits.

**(e) Livestock Transport Cleaning**

Livestock delivery vehicles are cleaned in a designated area before leaving the site. The solid waste collected during cleaning is stored in Dolav containers and disposed of along with dung and straw from the lairage. The liquid waste generated by the cleaning process enters the coarse screen pit and is treated by the ETP.

**(e) Slaughter Hall and Meat Processing Operations**

All areas of operation are externally supervised by the Food Safety Agency (FSA). Good adherence to hygiene standards and cleaning schedules inhibits the generation of odour in these areas. After production, all areas of operation undergo a deep clean using foam and sanitiser. Any odour issues due to poor hygiene standards would indicate food safety and quality risk and the site would not be allowed to operate.

**B. Water**

The risk of emissions from other points than those specified in the environmental permit is minimal and there are no new activities on site that will increase the risk.

Our underground structure consists of the drainage system, diesel tank, and associated pipe work. The integrity of the drainage system sumps is inspected regularly to ensure proper water flow into drainpipes. In addition to this, 6 concrete slabs identified as at risk due to cracking have been replaced around the site, further protecting soil and groundwater from accidental hydrocarbon spillages. No faults have been found that could lead to fugitive emissions.

All areas where potential contaminants are handled and stored are hard surfaced and any chemicals are stored on bunds to prevent spills from spreading, by creating a barrier to contain the liquid. Entrapping the liquids within a predetermined area allows for a fast and efficient clean-up process, and greatly reduces the risk of fugitive emissions.

Surface water from dirty production areas is collected by a separate foul drainage system which directs flow into the Effluent treatment plant where it is treated prior to releasing it to the sewer.

Readings from our $H_2S$ probe located at our treated effluent discharge point show generally low levels with some spiking noted when effluent flow is reduced to zero. Data from this probe were shared with Welsh Water in 2022 to aid with the a review of effectiveness being caried out on novel odour abating drain filters being installed in the local area.

**• Spillages**

There has been one reportable spillage reported on site during 2022:

In December, a stainless-steel lid fell off a vessel in the ETP, causing a crack to the output pipe of a neighbouring DAF tank. As a result, an estimated $5m^3$ of treated effluent waste leaked from the crack. A small amount of this treated effluent escaped to a storm drain before being blocked by our staff. The ETP output shut off to limit further spillage, and the at-risk storm drain covered using spillage kit (spillage procedure followed). The immediate area around the ETP was cleaned by hosing effluent on the roadway away from storm and into effluent drain. To prevent this happening again, the output pipe has been changed from plastic to stainless-steel, and the lid of the vessel has been welded on with chain to prevent the lid coming off in future. Staff have also been retrained in the importance of keeping the ETP doors shut at all times, both for the purposes of spillage control as well as odour abatement.

**C. Land**

It is considered that the risk of fugitive emissions to land is minimal. All factory waste is stored in appropriate containers on hard surfaces and collected and disposed of offsite by licensed contractors.