Supporting Information Report

Melton Foods

FOR: SAMWORTH BROTHERS LTD

PROJECT NUMBER: ECCS 144 001

PREPARED BY: EC CONSULTANCY SERVICES LTD

Supporting Information Report

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Supporting Information Report

ECCS 144 001 R 002 A

Project:	EPR/GP3548QT/V002 – Melton Foods
For:	Samworth Brothers Ltd
Status:	**Final**
Date:	December 2024
Author:	Lucinda Hall, Director

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1 INTRODUCTION

1.1 OVERVIEW

This report has been prepared on behalf of Samworth Brothers Ltd (hereby referred to as the 'Operator') in relation to a substantial permit variation application for the existing Melton Foods Installation Site located off Samworth Way near Melton Mowbray (Permit Number: EPR/GP3548QT).

The production facility is a long-established business and employer in the local which undertakes salad preparation, sanitization of ingredients, toasting, as well as cooking some ingredients in ovens to produce sandwiches and other bread-based products for human consumption. The production facility operates 24 hours per day, 7 days per week, operating over various shift patterns, 364 days of the year. The production facility is currently permitted to produce up to 97.6 tonnes of cold food products per day (with 26.3 tonnes consisting of animal products).

1.1.1 Regulatory Framework

The Stationary Technical Unit (STU) for the existing Melton Foods Installation Site is captured under Chapter II activities listed within Annex I within the Industrial Emissions Directive (2010/75/EU).

There are four types of variation (substantial, normal, minor and administrative) each differing by the potential significance of environmental impacts and the level of technical assessment required by the Regulator.

Within the Environment Agency's Environmental Permitting Charges Guidance, it states that:

"Substantial variation" means an application to vary a permit which the Agency considers is likely to involve significant assessment."

The type of variation is based on the level of risk. Whilst the proposed change do not represent significant changes in operating techniques across the site, the changes do introduce a new listed activity as well as other changes, thus it is considered that this application falls within the definition of substantial variation.

1.2 SCOPE AND OBJECTIVES OF REPORT

This Supporting Information Report has been prepared specifically in answer to Questions Q1a and 3d within Part C2 and Questions Q3, 3a1, 3c, 4b, 6a, 6b, 6c, 6d, 6e of Part C3 of the Environment Agency's Application Forms.

The objectives of this SI Report are to:

- Part C2 Q1a: Describe in detail all changes or additions proposed to the existing activities;
- Part C2 Q3d: Provide a Summary of the Operators existing Environmental Management Systems;
- Part C3 Q1: Provide details of all the activities listed in schedule 1 of the EPR and all directly associated activities (DAAs) that the applicant proposes to carry out at the installation;

- Part C3 Q2: Describe all point source emissions to be added to the permit;
- Part C3 Q3a: summarise the main measures proposed to control the risks or hazards associated with the proposed new activities, and provide details of any changes proposed to Operating Techniques Documentation currently referenced within Table 1.2 of the permit;
- Part C3 Q3c & 6d: Describe all types and amounts of raw materials and provide justification for their use;
- Part C3 Q4b: Describe measures proposed for monitoring of emissions associated with newly proposed activities;
- Part C3 Q6a: Describe the basic measures proposed for improving energy efficient across the site;
- Part C3 Q6b: Provide a breakdown of any changes to the energy existing activities use / create;
- Part C3 Q6e: Describe how the Operator will comply with Council Directive 2008/98/EC on waste.

As highlighted above, this report is restricted to Operational Techniques associated with the newly proposed activities only and does not describe existing Operational Techniques for activities that are already permitted and are to remain unchanged as a result of this variation. These Techniques have already undergone assessment and are authorised under current permit conditions.

1.3 RELEVANT LEGISLATION AND GUIDANCE

The existing permitted activities and proposed new DAA are subject to a number of European, domestic, statutory, and non-statutory legislation and guidance documents. Operators are required through the Environmental Permit application process, to demonstrate how they will comply with the relevant requirements of this legislation and guidance.

In relation to the new activities proposed at the Melton Foods Site, the following pieces of legislation and guidance are considered relevant for this report:

- Industrial Emissions Directive 2010/75/EU;
- Waste Framework Directive 2008/98/EC;
- Medium Combustion Plant Directive (EU) 2015/2193;
- The Environmental Permitting (England and Wales) Regulations 2016;
- The Environmental Permitting (England and Wales) (Amendment) Regulations 2018;
- The Environmental Permitting (England and Wales) (EU Exit) Regulations 2019;
- Establishing Best Available Techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for the Food, Drink and Milk Industries (2019/2031);
- Sector Guidance Note: 6.10 The Food & Drinks Sector Guidance, Environment Agency, March 2009.

1.4 THE APPLICANT / OPERATOR

Samworth Brothers Ltd (Company No. 03116767) was incorporated on 20 October 1995. The company's registered office address is: Chetwode House, 1 Samworth Way, Melton Mowbray, Leicestershire, LE13 1GA. The Company was originally founded in 1896 as a family business, with the Samworth group now employing over 9,500 people across the business Group.

1.5 SITE LOCATION AND ENVIRONMENTAL SETTING

The Melton Foods manufacturing site is located approximately 2.5km west of the centre of Melton Mowbray, in Leicestershire. The site falls within the jurisdiction of Melton Borough Council. The permitted site is in a rural setting. The Melton Foods production facility sits to the east of the Kettleby Foods Site and Chetwode House (the main headquarters of the Samworth Brothers Ltd Group).

Immediately to the north of the site is the main railway line which runs between Melton Mowbray and Leicester. The River Wreake is also just beyond the railway line to the north. Leicester Road is situated to the south of the site, with open fields to the west and the village of Kirby Bellars.

The full site address is:

Melton Foods

Samworth Brothers Ltd

3 Samworth Way

Leicester

Melton Mowbray

LE13 1GA

Site Grid Reference: SK 73222 18048

Figure 1.5.1 Site Location

Image sourced from Google Maps ©2024

1.6 EXISTING INSTALLATION ACTIVITIES

The primary Schedule 1 installation activities as described within the Environmental Permitting (England and Wales) (Amendment) Regulations 2016 and as listed in the existing permit are as follows:

- ***A1 - Section 6.8 Part A(1)(d)(iii):*** **(Melton Foods)** Treatment and processing, other than exclusively packaging, of the following raw materials, whether previously processed or unprocessed, intended for the production of food or feed (where the weight of the finished product excludes packaging) (iii) animal and vegetable raw materials (other than milk only), both in combined and separate products, with a finished product production capacity in tonnes per day greater than (aa) 75 if A is equal to 10 or more, where 'A' is the portion of animal material in percent of weight of the finished product production capacity.

The permit also listed several Directly Associated Activities (DAAs) which are as follows:

- ***A2 – Combustion Plant*** – Operation of boilers to generate steam;
- ***A3 – Combustion Plant*** – Operation of hot water boiler;
- ***A4 – Ovens*** – Operation of ovens for the production of cooked foods;
- ***A5 – Tray Wash*** – Operation of automated tray wash processes; and
- ***A6 – Waste and by-product storage*** – Storage of waste and by-products from the production of processed foods.

Figure 1.6.1 Existing Permit Site Boundary

Image sourced from Permit EPR/GP3548QT

1.7 PROCESS DESCRIPTION

The Melton Foods Installation Site currently undertakes the following food production activities: salad preparation, sanitation of ingredients, toasting, decanting of ingredients, preparation of ingredients (chopping, slicing, dicing and mixing), filling, chilling, packaging and despatch of finished products. The site also cooks ingredients in an oven on site in preparation for sandwich making. The sites permit currently has the capacity to produce up to 97.6 tonnes of cold food products per day (with 26.3 tonnes consisting of animal product).

There are currently a number of combustion units on site with associated emissions to air, including boilers, ovens and a tray washer which use natural gas as a fuel. The main point source emissions from these combustion units are nitrogen oxides and carbon monoxide. The total thermal input for all of the existing combustion plant on site is 2.271MWth.

Effluent from each process area is fitted with catch pots to capture solids, fats and oils. Effluent is then released to foul sewer under an existing Trade Effluent Consent (TEC) from Severn Trent Water.

Clean uncontaminated surface water is discharged from the site to a lagoon located at the adjacent Kettleby Foods Site, from where it discharges to a tributary of the River Wreake.

1.8 SENSITIVE RECEPTORS

A search was carried out using the government website 'www.magic.gov.uk' as well as a nature and heritage conservation screen assessment obtained from the Environment Agency (EA). The site does not lie within a designated Area of Outstanding Natural Beauty (AONB), nor is it located within a declared Air

Quality Management Area (AQMA). There are several Local Wildlife Sites (LWS) within 2km screening distance of the site. All other internationally designated ecological sites are situated beyond the EA's screening distances. The results of these searches are as follows:

- Ashfordby Hill LWS located 1.6km North-west of the Site;
- Eye Ash LWS located 1.7km North-west of the Site;
- Leicester Road Grassland LWS located 0.5km East of the Site;
- Melton Mowbray Railway Sidings LWS located 0.6km North-east of the Site;
- Bull Field LWS located 1.1km North-east of the Site;
- River Eye Site of Special Scientific Interest (SSSI) located 3.2 km East of the Site;
- Frisby Marsh Site of Special Scientific Interest (SSSI) located 4.4 km West of the Site;
- Rutland Water Site of Special Scientific Interest (SSSI), Special Protection Area (SPA) and RAMSAR Site located 17km South-east of the Site.

Figure 1.8.1a Location of Ecological Sensitive Receptors

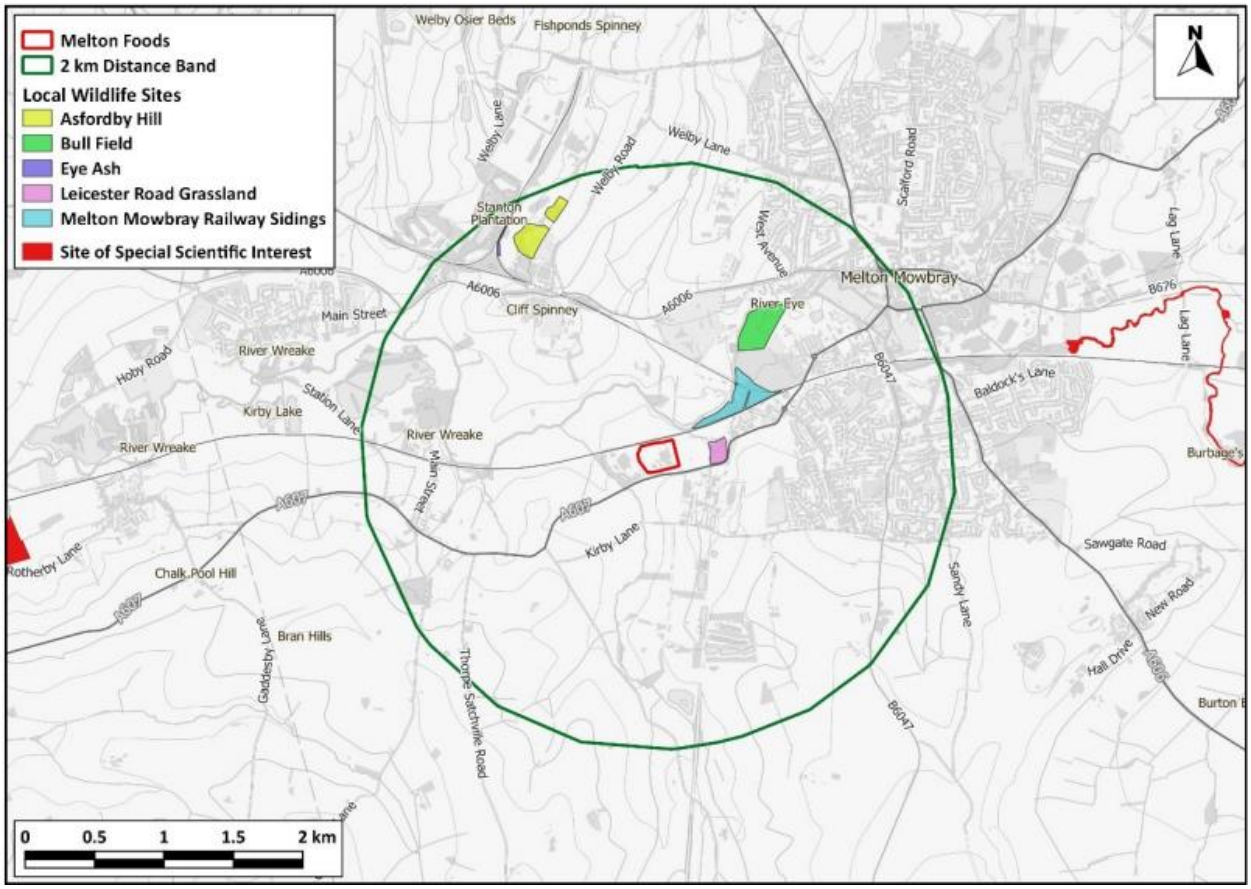

Image sourced from Air Quality Consultants Ltd AQA Report ©2024

There are also several human health sensitive receptors in close proximity to the site.

Table 1.8.1b below provides further details of all sensitive receptors considered within this permit application.

Table 1.8.1b Sensitive Receptors

No.	Receptor	Type	Distance (m)	Direction
1	2 White House Farm Cottages	Residential	430	SE
2	White House Farm	Residential	480	E
3	Leicester Road Grassland LWS	Ecological	500	E
4	Melton Mowbray Railway Sidings LWS	Ecological	600	E
5	44 Badger Avenue	Residential	620	ENE
6	40 Badger Avenue	Residential	625	ENE
7	45 Badger Avenue	Residential	770	NE
8	4 Bailey Crescent	Residential	880	E
9	8 Dobney Close	Residential	810	E
10	20 Gilbey Close	Residential	730	ESE
11	55 Main Street	Residential	810	ESE
12	42 Residential Street	Residential	900	SE
13	13 Managed Lane	Residential	970	SE
14	Bull Field LWS	Ecological	1100	NE
15	Ashfordby Hill LWS	Ecological	1600	NW
16	Eye Ash LWS	Ecological	1700	NW
17	6 Asfordby Road (Residential property within urbanized area with worst case highest baseline NOx concentrations)	Residential	2300	NE

2 PROPOSED CHANGES TO PERMIT

2.1 PROPOSED CHANGES TO PERMITTED ACTIVITIES

The site was originally permitted in July 2017, and incorporated both Melton Foods and the adjacent production facility, Kettleby Foods. In May 2023 the permit was split into two (partial transfer), with each facility operating under their own permit. The need to split the permit in two was given priority over applying to vary the permitted activities at Melton Foods. The Operator is now applying retrospectively for their standalone permit to be updated to reflect recent changes to site and to correct historical omissions from the original permit.

The changes being applied for as part of this substantial variation application are as follows:

- Add an activity to the permit.
  The Operator wishes to retrospectively add the following activity to the permit: A3 – Section 5.4 Part A(1)(a)(ii): (Effluent Treatment Plant) Disposal of non-hazardous waste with a capacity exceeding 50 tonnes per day involving one or more of the following activities, and excluding activities covered by Council Directive 91/271/EEC concerning urban wastewater treatment (a) – (ii) physico-chemical treatment.
- Increase site throughput capacity.
  Melton Foods are currently permitted with a daily throughput of 97.6 tonnes per day. This variation seeks to reflect recent expansion operations, including the introduction of a new process line and increase in total capacity throughput. Daily throughput capacity is to be increased to a maximum of 169 tonnes per day.
- Add new point source emissions to air.
  The existing emission sources associated with Melton Foods will all be retained (TP1 – 5), however, a new steam boiler (TP6), natural-gas fired tray wash and natural-gas fired oven are to be incorporated into the facility as part of this permit variation.
- Add a new ammonia treatment plant as a new Directly Associated Activity (DAA);
- Update site layout plan and emissions plan to reflect the above changes, including updating emission point reference numbering

2.2 NEW PROCESS LINE

The site has built an extension to their main process building to accommodate a new process line. The primary purpose of this process line will be to produce a porridge product. The introduction of a new process line and increase in total capacity throughput. Daily throughput capacity is to be increased to a maximum of 169 tonnes per day.

The maximum throughput capacity (based on worst case scenarios assuming both shifts had break relief and every slice was produced at top end of tolerance, with zero downtime) has been calculated against each process line as follows:

- **Bakehouse Main Line**: Fastest product run is BC929 @ 6400 per hour. Across 2 shifts (16 hours), the maximum production would be 102,400 units. Max weight is 85g per slice which equates to 8,704kg.
- **Barmarker**: Fastest product run is BC126 @ 6500 per hour @ 50g per slice (top tolerance). Maximum production would be 104,000 units, totaling 5,200kg.
- **Line 1, 2 and 9 – Platters**: Costco 32-piece platter is the most weight per min. In 16 hours of production at 4 per min and 1008g max per platter, maximum production 3,871kg of platters per line (11,613kg total).
- **Lines 3, 4, 5 & 6 - Skillet Lines**: Lidl prawn mayo at 196g per pack and 2534 per hour is fastest product run. 196g x 16 hours x 2534 per hour x 4 skillet lines = 31,786kg.
- **Lines 7, 8, 10, 11 – Low Speed Flow Wrap**: Costa Egg & spinach Bap is the highest g per min. 182g x 16 hours x 3294 collator x 4 lines = 38,369kg.
- **Line 12 – Baps**: Costa Sausage bap – 183g x 16 hours x 3610 collator = 10,570kg
- **Line 13 – High Speed Flow Wrap**: Costa Wiltshire & Cheddar Toastie – 198g x 16 hours x 5067 collator = 16,052kg.
- **Line 14 – Paninis:** Costa Tuna Melt Panini – 214g x 3667 collator x 16 hours = 12,556kg
- **Lines 15 & 16 – Med Speed Flow Wrap**: Starbucks 5 Cheese Toastie – 196g x 16 hours x 4307 collator x 2 lines = 27,014kg
- **New Porridge Line**: Porridge cooks are 450kg each. 8 cooks per shift, 16 in a day, means 7,200kg of porridge cooked per day at max.

The maximum daily throughput capacity the Melton Foods Facility could thus process in total is: 169,064kg per production day (169 tonnes per day).

2.3 EFFLUENT TREATMENT PLANT (ETP)

There is an existing single discharge point from the Melton Foods site to sewer. Process effluent captured from the sites processes is currently sent to an onsite Effluent Treatment Plant (ETP) for treatment prior to discharging to sewer, under an existing Trade Effluent Consent (TEC). The ETP has been operation for a number of years and appears not to have been previously included within the permit as an oversight.

The effluent plant consists of a number of treatment phases. In order these are:

- First – Screening;
- Second – Chemical;
- Third – pH Correction; and
- Fourth – Fat Skimmer.

The ETP consists of an effluent pit, sulphuric acid tanks used for chemical treatment and pH correction, and fat collection tank.

The ETP is designed to ensure that effluent entering the sewerage network meets the effluent standards/limits as set within the Trade Effluent Consent (TEC).

2.4 AMMONIA PLANT

Melton Foods are applying to retrospectively add a new ammonia-based refrigeration system into their permit as a Directly Associated Activity (DAA). The Ammonia Plant will primarily service the new process line but will also replace some discreet refrigeration systems which have since been decommissioned. The new Ammonia Plant is a closed loop system which will consist of the following infrastructure:

- 1 x surge drum / compressor package (consisting of multiple compressors, surge drum separator, ammonia liquid pumps, oil recover vessel; glycol cooler; and control valves;
- 2 x coolers servicing a new freezer store;
- 1 x impingement freezer; and
- 1 x adiabatic condenser with oil cooling coil circuit.

3 ENVIRONMENTAL RISK ASSESSMENT

3.1 OVERVIEW AND SCOPE OF ASSESSMENTS COMPLETED

A number of assessments have been considered to determine the environmental risks posed by changes to the Melton Foods Site and to identify whether the level of risk is considered acceptable with appropriate mitigation or if further measures are required.

The objectives of this Environmental Risk Assessment (ERA) are to:

- Identify potential sources of risk and hazards that the new changes proposed may present to the environment;
- Identify nearby sensitive receptors;
- Screen out those risks that are insignificant and don't require detailed assessment;
- Where appropriate identify potentially significant risks and undertake detailed assessment;
- Where appropriate choose the right control measures; and
- Report the findings of the assessment.

It was established early on in the project conception phase, that the following bespoke quantitative modelling assessments would be required:

- **Air Quality**. An Air Quality (AQ) Assessment would be required to establish if emissions from the proposed new point source emissions to air will result in exceedances of either human-health or ecological-health related air quality standards (AQSs); and
- **Noise.** A detailed Noise Impact Assessment (NIA) has also been carried out to assess the environmental impact from noise sources introduced from the new process line, effluent treatment plant and ammonia plant. The results of this assessment are also described in detail below.

All other hazards identified have been considered and either assessed qualitatively or screened out as requiring no further technical assessment. The qualitative risk assessment is provided within Appendix C to this report.

3.2 AMENITY IMPACTS

The proposed new activities and changes to the site will not introduce new hazards or risks of amenity impacts from site operations.

In consideration of the above, the potential for the proposed new activities to generate dust, litter or mud during normal operations or during routine maintenance is considered to be negligible thus the sites existing management systems and procedures for managing amenity impacts are considered to remain fit for purpose.

Amenity risks are considered within the qualitative risk assessment provided within Appendix C to this report.

3.3 ODOUR

The likelihood and risk of odour emissions causing annoyance or disturbance to any sensitive receptors from the changes proposed including emissions from the new exhaust stacks is considered to be negligible.

The sites existing management systems and procedures for managing amenity impacts are considered to remain fit for purpose.

Risks of odour are considered within the qualitative risk assessment provided within Appendix C to this report.

3.4 POINT SOURCE EMISSIONS TO ATMOSPHERE

The existing emission sources associated with Melton Foods will all be retained (TP1 – TP5), however, a new steam boiler (TP6), natural-gas fired tray wash (TP7) and natural-gas fired oven (TP7) are to be incorporated into the facility as part of this permit variation.

In consideration of the sites proximity to the adjacent production facility (sister site – Kettleby Foods), and in consideration of existing emissions, it was decided early on in the project conception phase that detailed air quality modelling would be required to fully assess the impact of the new point source emissions to air, in combination with the existing sites emissions, as well as other emissions in close proximity.

The assessment completed used the ADMS model (version 6.0) and focused on nitrogen dioxide (NO2) impacts on human health, and on nitrogen oxides (NOx) and nutrient and acid nitrogen deposition for ecological impacts. These are the principal pollutants of concern with respect to emissions from natural gas fuelled plant.

In consideration that the fuel (natural gas) is characterised by low emissions of Sulphur dioxide (SO_2) and particulate matter, these parameters were screened out early on as not significant. CO_2 generation is minimised by controlling combustion conditions, whilst the engine provides complete destruction to an efficiency of >99% of any VOCs within the gas, thus these parameters were also screened out as not requiring any further assessment.

Emissions of carbon monoxide (CO) from the new plant is also considered will likely have only a small impact, compared to the environmental standards, however for completeness an assessment of CO of the new plant, in combination with existing plant has been carried out.

The assessment initially considered the predicted process contributions (PCs) using the following criteria used by the Environment Agency:

- is the long-term (annual mean) PC less than 1% of the long-term Emission Standards for Air (ESA); and

- is the short-term (24-hour mean or shorter) PC of the assessed percentile less than 10% of the short-term ESA?

These screening criteria are initially applied to the maximum predicted value across the study area regardless of the presence of relevant receptors. Where both of these criteria are met, then the impacts can be screened out as being insignificant. Where impacts are not screened out, the area of potential impact is considered with regard to receptors relevant for the averaging periods of the ESAs. Where the above criteria are exceeded at relevant locations, then a more detailed assessment, considering total concentrations incorporating local baseline conditions (Predicted Environmental Concentrations (PECs), is provided.

The locations where impacts cannot be described as insignificant are not always closest to the emission source. Consideration was therefore given to whether the baseline concentration is elevated such that a small PC could result in a risk of an exceedance of the ESA.

Following a conservative methodology, based on continuous operations of all plant, detailed air quality modelling concluded that the impacts associated new plant at Melton Foods Site achieves the following outcomes:

- There is negligible risk that the annual mean NO_2 AQS will be exceeded as a result of the new plant;
- There is negligible risk that the 1-hour short-term NO_2 AQS will be exceeded as a result of the new plant;
- the PCs at relevant designated ecological sites are predicted to be less than 100% of the AQS. Based on the EA's guidance, the PCs are thus considered insignificant.

A copy of the full Air Quality Assessment Report is provided within Appendix E of this report.

3.5 NOISE

As above, it was decided early on in the project conception phase that a detailed noise impact assessment would be required to fully assess the impact of the new sources of noise, in combination with existing noise sources from the Melton Foods Site. A noise impact assessment was undertaken in 2024. The existing and new noise sources considered within the assessment are as follows:

Identified noise sources from the proposed new plant and equipment include the following infrastructure:

- HV Compound (Existing Source);
- Rooftop Plant (Existing Source);
- Noise Break-out (Existing and New Sources);
- Good Out Dispatch Yard (Existing Source);
- Intake Unloading Packaging Area (Existing Source);

- Good In Intake Service Yard (Existing Source);
- Ammonia Plant (New Source); and
- Effluent Treatment Plant (New Source).

A baseline survey was undertaken in early 2024 at representative sensitive receptor locations. The results of the survey have been analysed to determine typical background noise levels have subsequently been used on the assessment.

The assessment concluded that some of the identified sources would be at a level likely to be audible at Nearby Sensitive Receptors (NSRs), however that this would be at a 'low impact' level at all NSRs in the daytime. At night, the levels were also assessed as 'low impact' at all NSRs with the exception of one receptor (the closest dwellings). When considering contextual factors into the assessment, all levels at all NSRs have been concluded as 'low impact'.

The assessment has thus concluded that noise sources from new plant and equipment, in consideration with existing noise sources, would not result in adverse impact on nearby receptors.

A copy of the full Noise Impact Assessment Report is provided within Appendix F of this report.

3.6 EMISSIONS TO SEWER

There is an existing single discharge point from the Melton Foods site to sewer. The emission point to sewer is therefore not new, however the effluent treatment process is. Effluent captured from the sites process lines is sent to the onsite Effluent Treatment Plant (ETP) for treatment prior to discharging to sewer, under an existing Trade Effluent Consent (TEC). The ETP has been operation for a number of years and appears to have not been previously included within the permit as an oversight.

As the throughput capacity of the ETP will exceed 50 tonnes per day, the process falls within Section 5.4 Part A(1)(a)(ii) as a standalone listed activity.

The ETP infrastructure consists of an effluent pit, sulphuric acid tanks used for chemical treatment and pH correction, and fat collection tank. The ETP's process consists of four treatment phases. In order these are:

- First – Screening;
- Second – Chemical;
- Third – pH Correction; and
- Fourth – Fat Skimmer.

The treatment plant is designed to ensure that effluent entering the sewerage network meets the effluent standards/limits as set within the Trade Effluent Consent (TEC). These limits are as follows:

- The total of Sulphides in the trade effluent shall not exceed 1 milligram per litre expressed as S.
- The total of non-volatile matter in the trade effluent shall not exceed 500 milligrams per litre.
- The temperature of the trade effluent shall not exceed 43 degrees C (110 degrees F).

- The pH value of the trade effluent shall not be less than 6 nor greater than 10 in the recognised scale.
- The total of Suspended Solids in the trade effluent shall not exceed 1000 milligrams per litre.
- The total of Phosphorus in the trade effluent shall not exceed 25 milligrams per litre expressed as Phosphorus (P).
- The Chemical Oxygen Demand from acidified dichromate (C.O.D.) of the trade effluent shall not exceed 4000 milligrams per litre expressed as O.
- The trade effluent shall be free from physically separable oil.
- The trade effluent shall not contain material capable of retention on a square mesh screen of a grid size 6 millimetres or above.

The site stores a number of hygiene chemicals, including sulphuric Acid used within the effluent treatment plant. Other hygiene chemicals include:

- Aggress (caustic detergent);
- Maxifoam Acid;
- Sodium Hypochlorite;
- Perbac;
- Caustak 25;
- Nipac;
- Deptal CMC;
- Crystal;
- Terminol;
- Ultra Secure Liquid.

The weekly maximum capacity of the combined chemical storage is 7788kg.

Suphuric Acid is stored within 2 x IBCs which are stored within suitable secondary containment (on drip trays). The total ETP bund capacity is 3,300 litres.

Thus, the primary potential hazards identified would be under abnormal operations, from oils or chemicals due to accidental release from spillages during transferring of substances to and from site. Spillages could also occur from overfilling of vessels.

Spill kits will be available with materials suitable for absorbing and containing minor spills and site staff will be trained in their use and in the spill clean-up procedures. Deliveries of chemicals will be supervised by the Operator's personnel or the O&M Contractor personnel.

Based on the above proposed control measures and the output of the risk assessment in Appendix C of this report, the potential risk to the environment from point source emissions to sewer is considered to be low.

3.7 FUGITIVE EMISSIONS

Fugitive emissions can be from either intentional (i.e. vented) or unintentional (i.e. leaked) sources. The design of the new plant has considered the need for emergency vents or pressure relief valves to be built into the systems as part of the integral safety procedures for equipment on site. There are steam traps / air vents build into the design, in order to release steam in the event of overpressure. These vents will be

located at height and away from potential access from Operational Staff or pedestrian access ways. As steam will not contain any harmful substances this can be screened out as requiring further assessment.

There is potential for harmful unintentional or uncontrolled fugitive releases to the environment from the new plant. These may arise from the new combustion units, or any chemicals stored on site. However, the likelihood of a release is very low, and any emissions would be localised to the site.

The key sensitive receptors identified as at risk to any fugitive emissions include the adjacent Kettleby Foods Site.

Any rainfall run-off from the extension building, ammonia plant or Effluent Treatment Plan compound area will be captured and discharged via a single drainage point. This drainage point will connect with the Melton Foods Site's existing drainage system which will ultimately discharge off site to a lagoon, prior to discharge to a local water feature (tributary of the River Wreake).

Whilst extremely unlikely, the nature of any fugitive emissions to air would comprise either of natural gas in the event of a leak; VOCs released following loss of containment and a spillage on site or uncontrolled emissions from damaged or loosened pipework. The likelihood of loss of containment of hazardous liquids is also considered to be extremely unlikely.

The assessment in Appendix C concludes that these potential hazards from fugitive emissions to air or surface waters are considered to be low following application of appropriate control measures.

3.8 Wastes Generated On Site

The new activities will result in an increase volumes of waste generated on site, however the nature / type of wastes generated will not change.

All Hazardous wastes will be removed from site by an appropriately permitted waste contractor and will be recovered at a suitably authorised and permitted facility. As a waste producer, the Operator will receive consignee returns every quarter from their consignee dealing with their hazardous wastes.

Records of all non-hazardous and hazardous wastes removed from site will be recorded, held securely, and made available for inspection by the Environment Agency upon request. Should any new waste streams be generated during either normal or abnormal operations, the Operator will apply the principles of the Waste Hierarchy prior to removal off site.

3.9 Abnormal Operations Or Accidents

A review has been undertaken of the sites existing Accident and Emergency Response measures. The changes proposed to the existing permit do not introduce any new accident risks or hazards to the site. As a result, it has been determined that the site existing mitigation measures to manage accidents on site remain fit for purpose. A copy of the site's existing Accident Management Plan is provided within Appendix K to this report.

4 OPERATING TECHNIQUES AND BAT ASSESSMENT

4.1 ENVIRONMENTAL MANAGEMENT SYSTEM (EMS)

The Operator currently implements their own comprehensive Environmental Management System (EMS). The existing EMS provides a framework through which the Melton Foods Site's environmental performance can be monitored, controlled and improved upon. The EMS sets out supporting information on plant technology and the appropriate level of information to provide:

- a mechanism for defining environmental responsibilities for all staff, helping them to understand the environmental impact of their activities and individual actions;
- ensures that all operations have procedures that minimise their impacts and strive towards high standards of environmental protection by preventing or minimising emissions;
- records environmental performance against set targets;
- can be audited; and
- will help the company identify opportunities to reduce waste and improve raw material consumption and energy efficiency.

The existing EMS will be updated to include the Operating Techniques and Maintenance Manuals associated with all new plant and equipment.

Existing Operating Techniques as referenced within Table S1.2 of the permit will not be replaced but will remain fit for purpose. Additional techniques proposed for the new activities as described within this report are to be included as additional techniques within Table S1.2.

4.2 STAFF TRAINING

Staff employed at the Melton Foods Installation Site will benefit from a training programme to improve their professional and technical knowledge. The Operator ensures that any person performing tasks for it, or on its behalf, are competent based on appropriate education, training or experience, and retains all associated records. The training programme seeks to maintain staff awareness of the site Permit and EMS. New employees will be given full induction training by managerial staff or other appropriately qualified personnel. Records will be kept of all staff qualifications and training in relation to operation of the processes at the site, emergency protocols and the content and requirements of the environmental permit and its management plans.

Where works are contracted out, the successful contractor will have undergone an assessment during the procurement process to determine technical competency and to satisfy training standards required by the company.

4.3 RAW MATERIAL & WATER CONSUMPTION

The Melton Foods site uses a multitude of different raw materials (primary food ingredients) as well as fuel input (natural gas) and mains water supply, at the site. The introduction of the new porridge process line and overall increase in throughput capacity at the site will ultimately increase use of raw materials. A spreadsheet listed all of the primary raw materials used on site as well as hazardous materials (COSHH List) is provided within Appendix J to this report.

Monthly water consumption is monitored across the site. Table 4.3.1 below summarises the water consumption figures for 2022 and 2023. At the time of submission of this application 2024 figures were not yet available. The new porridge process line was operational in 2023.

Table 4.3.1 Annual Water Consumption Data 2022-2023

Year	Water Consumption Value	Units
2022	49,392	m^3
2023	86,105	m^3

All raw materials will be stored in suitable above ground tanks or containers and will benefit from the following pollution prevention techniques:

- Impermeable bunds with a capacity of 110% of the largest volume;
- Fill points provided with secondary containment (as appropriate);
- Be subject to regular visual inspection;
- Spill kits – materials suitable for absorbing and containing minor spillages will be readily available on site;
- Any spills or leaks will be handled in accordance with the company's Emergency procedures for Spillages; and
- In the unlikely event that contaminants enter the drainage system, this will be directed to the onsite effluent treatment plant prior to discharge to sewer, rather than any surface water drains.

The Operator will continue to:

- take appropriate measures to ensure that raw materials and water are used efficiently in the activities;
- maintain records of raw materials and water used in the activities;
- review and record at least every 4 years whether there are suitable alternative materials that could reduce environmental impact or opportunities to improve the efficiency of raw material and water use; and
- take any further appropriate measures identified by a review.

In summary, it can be concluded that the proposed changes to the permit continue to meet indicative BAT requirements for raw material use, as laid out in Environment Agency Guidance.

4.3.1 Avoidance, Recovery and Disposal of Wastes

The nature of wastes produced at the site will not fundamentally change as a result of this permit variation. The volumes of wastes produced will increase, however existing waste minimisation measures will continue to be implemented across the site.

Waste oil or any other hazardous wastes will be removed by an appropriately permitted waste contractor and will be recovered at a suitably authorised facility. As a waste producer, the Operator will receive consignee returns every quarter from their consignee handling the removal of hazardous wastes. If returns are not automatically provided, the Operator write to the consignee requesting copies.

The Operator recognises the need to implement the principles of the Waste Hierarchy wherever possible. Environmental Targets set within the Operators existing EMS will include auditing of wastes generated in order to identify opportunities for improvement.

4.3.2 Energy Efficiency

Melton Foods implements a number of existing energy efficient measures which remain fit for purpose and will be rolled out across all new plant at the site.

Monthly electricity and gas consumption is monitored across the site. Table 4.3.2 below summarises the monthly electricity and gas consumption figures for 2022 and 2023. At the time of permit application submission, the 2024 figures were available. The new porridge process line was operational in 2023.

Table 4.3.2 Annual Energy Consumption Data 2022-2023

Year	Energy Source	Value	Units
2022	Electricity	7,209,874	kWh
	Natural Gas	8,589,318	m^3
2023	Electricity	7,195,005	kWh
	Natural Gas	6,025,448	m^3

Monitoring and planned preventative maintenance will be used to ensure that the plant will run at optimum performance thereby maximising the energy efficiency of all new plant and equipment.

In summary, it can be concluded that the proposed changes to the permit continue to meet indicative BAT requirements for energy efficiency as laid out in Environment Agency Guidance.

4.3.3 Accident Prevention and Emergency Protocols

An assessment of potential new accidents and abnormal scenarios, along with measures to reduce the risk of them occurring has been undertaken and is included within the Environmental Risk Assessment (ERA) within Appendix C of this report. The ERA identifies the potential hazards posed by the changes to the permit under both normal and abnormal operating conditions. An assessment of each hazard identified has been evaluated and the potential risk and prevention measures described. Control measures are essential unchanged from the measures currently implemented at the site for existing plant and processes. The site implements and Accident Management Plan (AMP), a copy of which is provided within Appendix K to this report.

4.3.4 Site Security

Access to the Melton Foods Site is restricted with access controlled via a central gatehouse and vehicle check points. This includes security fencing, gates and CCTV cameras.

Full details of site security have been included as a control measure within the Environmental Risk Assessment provided within Appendix C.

4.3.5 BAT Assessment

A BAT Assessment has been completed for the site against relevant technical standards applicable to the primary installation activity (BAT Conclusions Document for the Food, Drink and Milk Industries, published November 2019).

The BAT assessment does not assess existing permitted activities that remain unchanged, as these have already undergone assessment and are authorised under current permit conditions.

It is acknowledged that the Effluent Treatment Plant – as listed as a standalone listed activity also falls under the published Commission Implementing Decision (EU) 2018/1147 of 10 August 2018 establishing best available techniques (BAT) conclusions for waste treatment, under Directive 2010/75/EU of the European Parliament and of the Council, published on 10 August 2018 (the 'Waste Treatment BAT Conclusions'). It is noted that there is significant overlap between the two BREFs, in particular the generic BAT Conclusions applicable to all industrial sectors. (BAT 1-15). Where additional BAT conclusions within the Waste Treatment BAT Conclusions specifically relate to treatment of liquid wastes, the Effluent Treatment Plant complies with these standards.

A copy of the sites BAT assessment is provided within Appendix D to this report.

5 EMISSIONS AND MONITORING

5.1 EXISTING AND NEW POINT SOURCE EMISSIONS TO ATMOSPHERE

As detailed within Section 2.1 above, there will be several new point source emissions to atmosphere from the new process line, including a new steam boiler, tray wash and oven.

Emission limits and monitoring requirements for all existing point source emissions to air from the site as well as the new emission points are summarised within Table 5.1.1 below. All new point source emissions to be added are referenced in blue.

Table 5.1.1 Existing & new point source emissions to air – emission limits and monitoring requirements

Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
TP1	Natural Gas Hot Water Boiler	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	250 mg/m^3	Periodic	Every 3 Years	MCERTS BS EN 14792
		Carbon Monoxide (CO)	No limit set	--	--	--
TP2	Natural Gas Hot Water Boiler No.3	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	250 mg/m^3	Periodic	Every 3 Years	MCERTS BS EN 14792
		Carbon Monoxide (CO)	No limit set	--	--	--
TP3	Natural Gas Oven	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	No limit set	--	--	--
		Carbon Monoxide (CO)	No limit set	--	--	--
		Volatile Organic Compounds (VOCs)	No limit set	--	--	--
TP4	Natural Gas Bar Maker					
TP5	Natural Gas Tray Wash					
TP6	*New Natural Gas Steam Boiler*	*Oxides of Nitrogen (NO and NO_2 expressed as NO_2)*	*250 mg/m^3*	*Periodic*	*Every 3 Years*	*MCERTS BS EN 14792*
		Carbon Monoxide (CO)	*No limit set*	*--*	*--*	*--*
TP7	*New Natural Gas Tray Wash*	*Oxides of Nitrogen (NO and NO_2 expressed as NO_2)*	*No limit set*	*--*	*--*	*--*
		Carbon Monoxide (CO)	*No limit set*	*--*	*--*	*--*
TP8	*New Natural Gas Oven*	*Oxides of Nitrogen (NO and NO_2 expressed as NO_2)*	*No limit set*	*--*	*--*	*--*
		Carbon Monoxide	*No limit set*	*--*	*--*	*--*

Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
		(CO)				

Point source emissions to air will be subject to a programme of monitoring as detailed in the above table. All sampling location points are designed to meet BS EN 15259 standards, with all emissions testing undertaken in accordance with relevant Environment Agency guidance including:

- Guidance: Control and monitor emissions for your environmental permit, published in February 2016 and last updated November 2022;
- Guidance: Monitoring stack emissions: measurement locations, published in June 2022 and last updated December 2022;
- Guidance: Monitoring stack emissions: maximum uncertainty values for periodic monitoring, published in September 2021; and
- Guidance: Monitoring stack emissions: techniques and standards for periodic monitoring, published December 2019 and last updated November 2022.

5.2 Existing Point Source Emissions to Sewer

The Melton Food permit already has a point source emission to sewer referenced within the permit (currently referenced as TP6). As part of this variation the Operator wishes to update the emission point reference number to ensure all emission points are referenced in order. TP6 with thus become TP9.

The permit currently does not specify any emission limits or monitoring requirements for the discharge to sewer. To avoid duplicate regulation, it is understood that this will remain as existing, as the quality of effluent emissions to sewer will improve as a result of the on-site ETP. The parameters as set out within the site existing Trade Effluent Consent are however listed within Table 5.2.1 below.

Table 5.2.1 Amended point source emissions to sewer – emission limits and monitoring requirements

Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
TP9	Discharge from Site Effluent Treatment Plant	Total of Sulphides	No limit set	--	--	--
		Total of non-volatile matter	No limit set	--	--	--
		Temperature	No limit set	--	--	--
		pH	No limit set	--	--	--
		Suspended Solids	No limit set	--	--	--
		Total of Phosphorus	No limit set	--	--	--
		COD	No limit set	--	--	--
		Oils	No limit set	--	--	--

5.3 EXISTING POINT SOURCE EMISSIONS TO SURFACE WATERS

The site is predominately serviced with an impermeable concrete base providing a physical barrier between the plant and the land and groundwater below. Chemicals are stored within a locked containers and are serviced with appropriate secondary containment.

The surface water discharge from site will not change in nature or location of emission point as a result of this variation. The emission point however is to be re-numbered to align with all other point source emissions. The surface water discharge point is to be re-numbered as TP10, as illustrated within Table 5.3.1 below.

Table 5.3.1 Amended point source emissions to surface water – emission limits and monitoring requirements

Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
TP10	Uncontaminated surface water run-off	Visible oils, fats and grease	None visible	Instantaneously	Monthly	Visual Inspection

No process effluent will discharge into surface water drains. Only clean uncontaminated surface water run-off will discharge via the surface water discharge point.

Spill kits are available on site and appropriate staff receive internal training on their use.

Copies of sites Drainage Plans are provided within the Drawings section to this report.

5.4 PROCESS MONITORING

The Operator will have a computer-based system in place to monitor all key aspects of operating the proposed new plant to optimise efficiency and identify system failures. All of the key components of the new plant will have their own dedicated control panels that will send signals to the Main Control Panel, which in turn will control and monitor the overall operation of the units. SCADA software will operate continuously gathering and analysing real time data.

Data is downloaded continuously thus allowing the operator to generate monitoring data reports for all key elements of operational plant.

All of the above parameters will be recorded and maintained for inspection by the EA upon request.

DRAWINGS

APPENDICES

APPENDIX A – ENVIRONMENTAL PERMIT

APPENDIX B – EMS DOCUMENTATION

APPENDIX C – ENVIRONMENTAL RISK ASSESSMENT

Table A: Risk Assessment and Risk Management Techniques

Hazard	Receptor	Pathway	Risk Management Techniques	Probability of Exposure	Consequence	Overall Risk
Noise						
Noise generated from additional combustion unit stacks**;** Ammonia Plant; Effluent Treatment Plant; new factory process line; vehicle movements	Local Workforce at Site; Nearby Human Receptors	Noise through the air	The risks of adverse impact on nearby sensitive receptors from new and existing noise sources has been fully assessed under a comprehensive Noise Impact Assessment Report undertaken in 2024. All new processes will be located inside buildings which will provide noise attenuation. Equipment will be fitted with housing itself that has noise attenuation. The Operator will continue to implement a planned preventative maintenance regime to ensure equipment remains fit for purpose and equipment operates within optimum conditions and minimises generation of noise and/or vibration. The Operational procedures are in place to investigate and respond to any complaints about noise. Records will be maintained on site.	Low	Low	Low
Odour						
Malodors from generated from additional combustion unit stacks; Ammonia Plant; Effluent Treatment Plant; new factory process line; vehicle movements	Local Workforce at Site; Nearby Human Receptors	Transportation through the air	The likelihood and risk of odour emissions causing annoyance or disturbance to any sensitive receptors from the newly processes is also considered to be negligible. The Operator will continue to implement a planned preventative maintenance regime to ensure equipment remains fit for purpose and equipment operates within optimum conditions and minimises generation of odours. The Operational procedures are in place to investigate and respond to any complaints about odours. Records will be maintained on site.	Low	Low	Low
Discharges to Sewer						
Breach of Trade Effluent Consent Limits	Local Workforce at Site; Wastewater Treatment Works Downstream	Transportation through sewer network	Effluent is treated at the on-site Effluent Treatment Plant (ETP) prior to discharge to sewer. Effluent and the ETP process will be monitored to ensure that emissions to sewer remain within limits set within Trade Effluent Consent issued by Severn Trent Water Ltd. The Operator will continue to implement a planned preventative maintenance regime to ensure equipment remains fit for purpose and equipment operates within optimum conditions Records will be maintained on site.	Low	Low	Low

Hazard	Receptor	Pathway	Risk Management Techniques	Probability of Exposure	Consequence	Overall Risk
Fugitive or Abnormal Emissions						
Loss of Containment	Local Workforce at Site; Nearby Human Receptors; Water Feature	Transportation across the ground and into site surface water drainage	All hazardous liquids or potentially polluting liquids will be stored within appropriate containers, and will be provided with secondary containment which meets secondary containment CIRIA 736 standards. The Operator will implement planned preventative maintenance programme that will include regular inspections of the tank to ensure integrity of containment remains fit for purpose.	Low	Medium	Low
Gas Leak	Local Workforce at Site; Nearby Human Receptors; global warming potential (GWP)	Transportation through the air	The Operator will undertake routine checks across to site to identify any gas leaks. In the event a leak is detected emergency procedures will be followed.	Low	Low	Low
Abnormal exhaust gases			The Operator will continue to implement a planned preventative maintenance programme that will include regular checks on the boilers to ensure they are operating within optimum conditions. Appointed professional, registered & qualified contractors for inspecting, servicing & maintaining refrigeration equipment and repairing any leaks without delay.			

APPENDIX D – BAT ASSESSMENT

APPENDIX E – AIR QUALITY ASSESSMENT

APPENDIX F – NOISE IMPACT ASSESSMENT & NOISE MANAGEMENT PLAN

APPENDIX G – PROCESS FLOW DIAGRAMS

APPENDIX H – EFFLUENT TREATMENT PLANT P&ID

APPENDIX I – AMMONIA PLANT P&ID

APPENDIX J – RAW MATERIALS & COSHH LISTS

APPENDIX K – ACCIDENT MANAGEMENT PLAN

APPENDIX L – SEVERN TRENT TRADE EFFLUENT CONSENT