APPLICATION FOR AN ENVIRONMENTAL PERMIT VARIATION UNDER THE ENVIRONMENTAL PERMITTING (ENGLAND AND WALES) REGULATIONS 2016 (AS AMENDED)

ODOUR MANGEMENT PLAN

DANISH CROWN UK LIMITED,
EBENEZER, BUGLE, ST AUSTELL, CORNWALL

ECL Ref: DCUK.01.01/OMP
Version: Issue 1
November 2024

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ACRONYMS/TERMS USED IN THE TEXT

CCTV	Closed Circuit Television
EA	Environment Agency
ECL	Environmental Compliance Limited
ERA	Environmental Risk Assessment
FRA	Fire Risk Assessment
LNR	Local Nature Reserve
MAGIC	Multi-Agency Geographic Information for the Countryside
MCERTS	Monitoring Certification Scheme
NGR	National Gid Reference
NNR	National Nature Reserve
OMP	Odour Management Plan
OS	Ordnance Survey
PPMR	Planned Preventative Maintenance Regime
RAMSAR	Ramsar Convention on Wetlands of International Importance
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
The Installation	Danish Crown Bulge Pork Manufacturing Site

1. INTRODUCTION

1.1. Overview

1.1.1. Environmental Compliance Limited ("ECL") have been commissioned by Danish Crown UK Limited ("DCUK") to prepare an Odour Management Plan ("OMP") to form part of the Environmental Permit ("EP") variation application at their pork manufacturing site, hereafter referred to as "the Installation", located in Ebenezer, Bugle, St Austell, Cornwall, PL26 8RR.

1.1.2. The Permit variation application proposes the following:

- addition of a new Schedule 1 Activity to capture the biological treatment as part of the on-site effluent treatment prior to discharge to S1;
- the correction and amendment of Point Source Emission Points to Air to reflect the current arrangements at the Installation and relevant associated Directly Associated Activities.

1.2. Purpose

1.2.1. This OMP has been written to meet the Environment Agency's ("EA") general requirements for OMPs as described within their Horizontal Guidance Note H4 Odour Management – How to comply with your environmental permit (March 2011), EA's specific guidance 'Odour Management Plans for Waste Handling Facilities' (November 2010). Version 2 of the EA's Odour Management Plan Template (May 2021) was also considered in the production of this OMP.

1.2.2. The OMP is a working document with the specific aim of ensuring that all appropriate measures are taken to prevent or, where that is not reasonably practicable, to reduce odorous emissions to air from the installation that may be considered offensive at locations outside of the installation boundary. These measures include to ensure that:

- odour assessment is considered as part of routine inspections;
- odour is primarily controlled by:
  - location of operation - treatment will occur within the designated building only;
  - storage of pre-treated wastes and floc will be within building;
  - location of equipment – autoclave is an enclosed equipment, located within the designated building;
  - low quantity of wastes undergoing treatment per day;
  - compliance with maximum storage periods of waste pre-treatment and post treatment;
  - good operational/ housekeeping practices;
  - correct use and maintenance of the equipment/ autoclave; and
  - staff training.

1.3. Roles and Responsibilities

1.3.1. The EHS manager is responsible for ensuring that the OMP is followed and that nuisances and hazards arising from the Installation, when encountered, are minimised and that odour complaints are investigated, and records are kept.

1.3.2. The EHS manager is also responsible for ensuring that in the event of a formal odour complaint, the investigation and findings are recorded in accordance with this plan. Regular meetings shall be held for site management to discuss current and planned operations with respect to their potential for generating odorous site emissions.

1.4. Training

1.4.1. All site personnel receive information and instruction on a range of activities. This information and instruction will start at the staff induction stage and will include their responsibility to be aware of the OMP including the need to keep odour to a minimum, and to report any potential issues or areas of improvement to their line manager.

1.5. Records and Framework

1.5.1. This OMP provides information on the potential odour impacts from the Installation and the mitigation measures to be implemented. These measures are linked to the Installation's Environmental Management System ("EMS") and will include operational and control measures for normal, as well as abnormal conditions.

1.5.2. This OMP also provides a management framework comprising of proactive and reactive measures to manage and control potentially odorous releases from the Installation. This proactive approach will facilitate the ongoing development of operational procedures and controls as part of an on-going commitment to improving environmental performance. Reactive procedures will also be established within the OMP for the logging, evaluation and implementation of corrective actions in the unlikely event of any odour related complaints being received.

2. DESCRIPTION OF THE SITE AND POTENTIAL RECPTORS

2.1. Site Location and Setting

2.1.1. The Installation is located in Ebenezer, Bugle, St Austell, Cornwall, PL26 8RR. The Installation covers an area of approximately 2.2 hectares.

2.1.2. The Site Location Plan (DCUK.01.01-01) details the Environmental Permit Boundary (outlined in green) and is provided in Section 3 of this variation application submission.

2.1.3. Figure 1 provides the indicative location of the Installation (red outline) within the context of the surrounding environment.

Figure 1: Indicative Site Location

2.1.4. The Installation's site setting is predominately rural with open space and agricultural land use. Solar panel farms are located to the north-west and south-east.

2.1.5. Small residential hamlets of Bodwen, Lockengate and Tredinnick Pits are located approximately 255m north west, 0.88km north east and 1.1km south east respectively. The village of Bilberry is located approximately 1.04km west of the Installation.

2.2. Potentially Sensitive Receptors

2.2.1. Potential sensitive human receptors within 1km of the boundary have been identified and are displayed in Figure 2 with nearest distances to the Installation boundary and direction given in Table 1.

Figure 2: Potentially Sensitive Human Receptors within 1km of the Installation Boundary

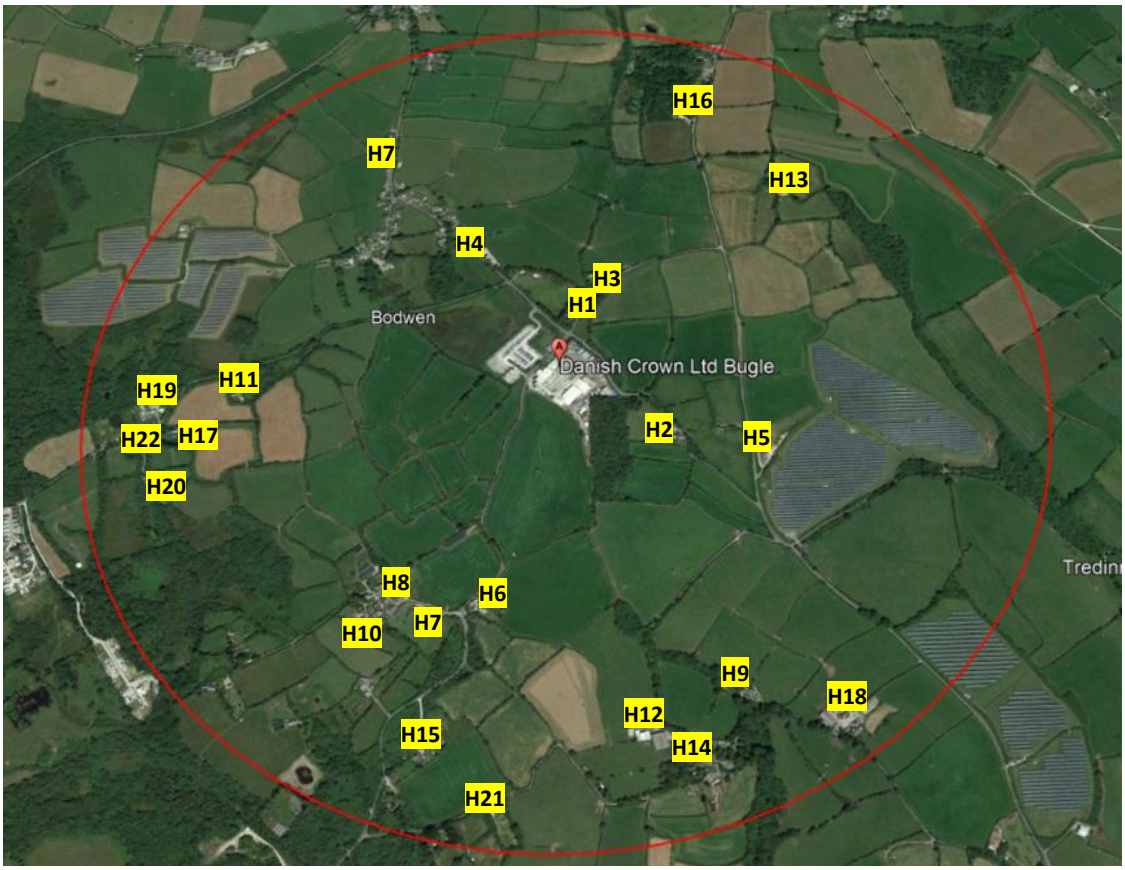


Table 1: Potentially Sensitive Human Receptors within 1km of the Installation Boundary

Ref	Name	Receptor Type	Easting	Northing	Distance from Boundary (km)	Direction
H1	Property on unnamed lane	Residential	203602	060337	0.04	NE
H2	Property on unnamed lane	Residential	203804	060037	0.11	SE
H3	Property on unnamed lane	Residential	203668	060445	0.14	NE
H4	Properties in Bodwen	Residential	203418	060499	0.25	NW
H5	Property on Unnamed Road	Residential	203990	059989	0.30	SE
H6	Hillside Cottage and Surrounding Housing	Residential	203417	059677	0.37	SW

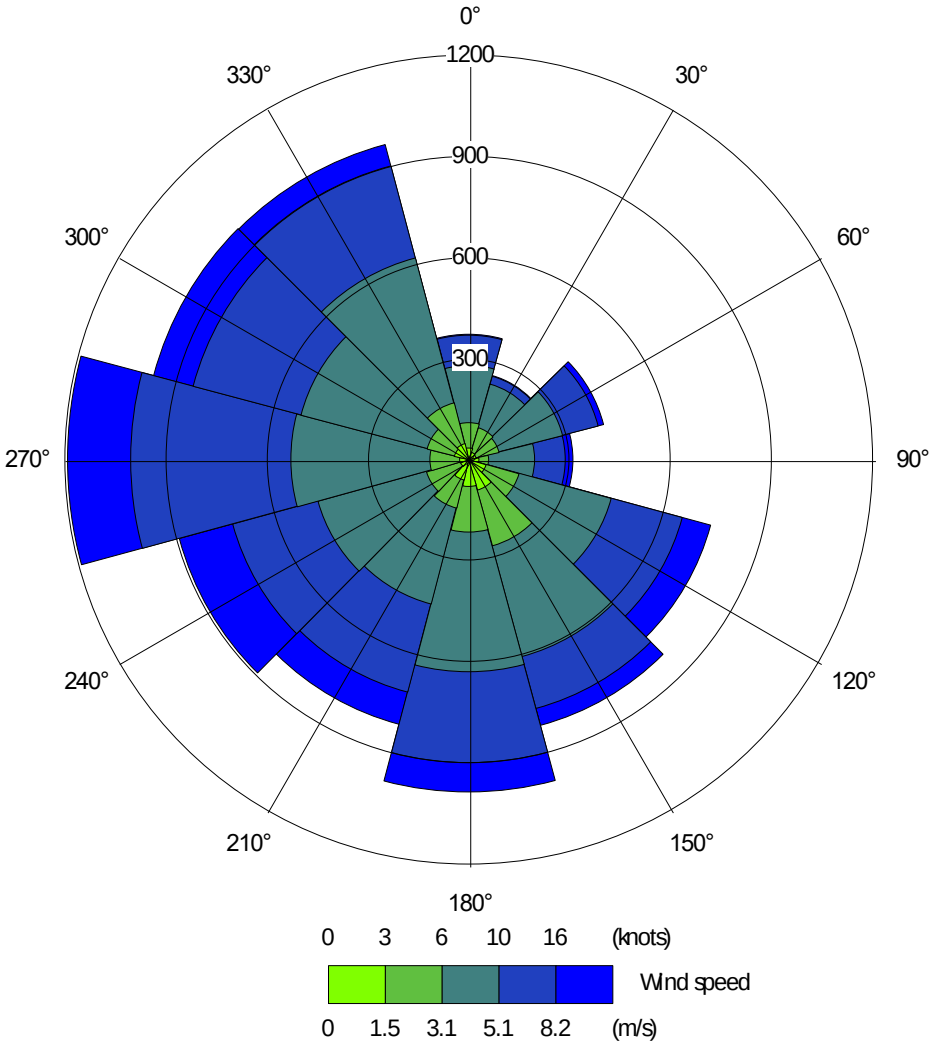
Table 1: Potentially Sensitive Human Receptors within 1km of the Installation Boundary (cont)

Ref	Name	Receptor Type	Easting	Northing	Distance from Boundary (km)	Direction
H7	Unnamed Road	Commercial	203310	059636	0.47	SW
H8	Higher Menadew Farm Cottages	Commercial (Holiday Rentals)	203259	059683	0.48	SW
H9	Property on Unnamed Road	Residential	203920	059474	0.56	SE
H10	Fig Tree Cottage	Commercial (Holiday Rental)	203193	059642	0.56	SW
H11	Minorca Lane	Commercial	202898	060174	0.59	W
H12	Lower Menadue	Commercial	203724	059393	0.59	S
H13	Sheds/ Outhouses	Commercial	204075	060686	0.60	NE
H14	Property in Lower Menadue	Residential	203832	059331	0.64	S
H15	The Cottage Canna/ Gloweth nr Bulge	Residential	203325	059399	0.66	SW
H16	Property on outskirts of Lockengate	Residential	203267	061080	0.85	NE
H17	Property off Minorca Lane	Residential	202790	060068	0.72	W
H18	Property named Chytan	Commercial /Residential	204091	059419	0.72	SE
H19	Minorca Lane	Commercial	202735	060135	0.73	W
H20	Housing off Minorca Lane	Residential	202756	059968	0.75	W
H20	Canna Farm Campsite	Commercial	203463	059258	0.76	SW
H22	Minorca Lane	Commercial	202725	060061	0.78	W

2.3. Windrose

2.3.1. Odour can also be influenced by the meteorological conditions at the site and surrounding area. The closest Meteorological Station to the site is Cardinham, Bodmin, located 12km to the north east of the Site. The wind rose for 2023, which is provided in Figure 1, shows that the wind directions is predominately westerly, with north-westerly and south-westerly components.

Figure 3: Annual Wind Rose - 2023



3. Site Activities and Potential Sources of Odour

3.1. Current Activities

3.1.1. The Installation is currently subject to two Schedule 1 Activities under the Environmental Permitting (England and Wales) Regulations 2016 as amended ("EP Regulations") as detailed in Table 2 below.

Table 2: Permitted Schedule 1 Activities

Schedule 1 Activity	Description of Specified Activity	Limits of Specified Activity
Section 6.8 Part A(1)(d)(i)	Treating and processing materials intended for production of food products from animal raw material (other than milk) at plant with a finished product production capacity of more than 75 tonnes per day.	From receipt of raw materials to dispatch of finished product from the installation.
Section 5.4 Part A(1)(a)(ii)	Disposal of non-hazardous waste in a facility with a capacity exceeding 50 tonnes per day by physico-chemical treatment.	From production of effluent to the point of discharge to the sewer.

3.1.2. Effluent is produced at the Installation as a result of the following:

- butchery – blood drip loss and limited quantities of floor waste passing to the drainage system;
- curing includes dry curing and/or wet brine pumping of the product – brine salt and water mix;
- smoking system – pressure system (steam and hot water heating); and
- hygiene/cleaning – 24/7 hygiene function with various chemicals.

3.1.3. The existing system prior to the variation involved only one dissolved air flotation ("DAF") unit (with a sump pit, holding balance tank) with outgoing effluent from the single DAF unit.

3.1.4. The Environmental Permit details one emission point to sewer at the Installation designated as S1. The location is shown on the Site Layout Plan (DCUK.01.01-01) submitted in Section 3 of this application.

3.2. Proposed Activities

3.2.1. This variation application proposes the addition of biological treatment of the generated effluent. Consequently, DCUK is proposing to add one additional Schedule 1 Activity as detailed in Table 3.

Table 3: Proposed Permitted Schedule 1 Activities

Schedule 1 Activity	Description of Specified Activity	Limits of Specified Activity
Section 5.4 Part A(1)(a)(i)	Disposal of non-hazardous waste in a facility with a capacity exceeding 50 tonnes per day by biological treatment.	From production of effluent to the point of discharge to the sewer.

3.2.2. There will be no change to the Directly Associated Activities ("DAAs") as a result of adding the proposed Listed Activity in this variation application.

Effluent Treatment and Drainage Arrangements

3.2.3. The location of the point source emission to sewer is proposed to remain the same with no proposed changes to the discharge point.

3.2.4. Figure 4 below illustrates the indicative layout of the proposed new effluent treatment system and the process flows are provided in Figure 5 and 6.

3.2.5. In 2008, a selector tank and aeration tank were added to the ETP along with a second DAF unit (Figure 5). In 2024, the ETP now also includes two surplus activated sludge tanks (Figure 6).

3.2.6. In accordance with CAR ID DP3631RA/0481808, this Permit variation is being submitted to capture the changes as part of the Environmental Permit to ensure it is reflective of current operations.

Figure 4: Proposed Effluent Treatment Layout

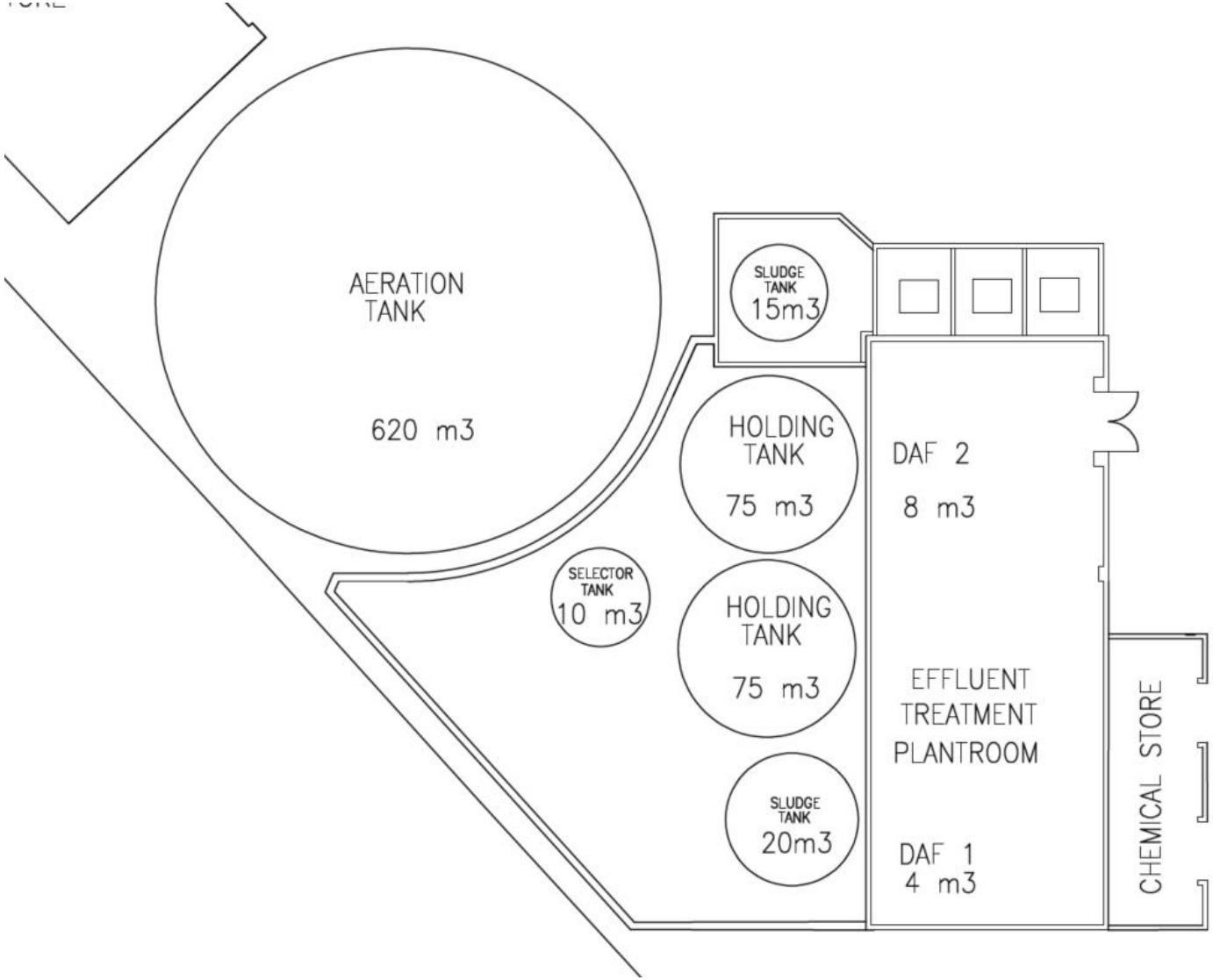


Figure 5: Proposed Effluent Treatment – Process Flow Diagram - 2008

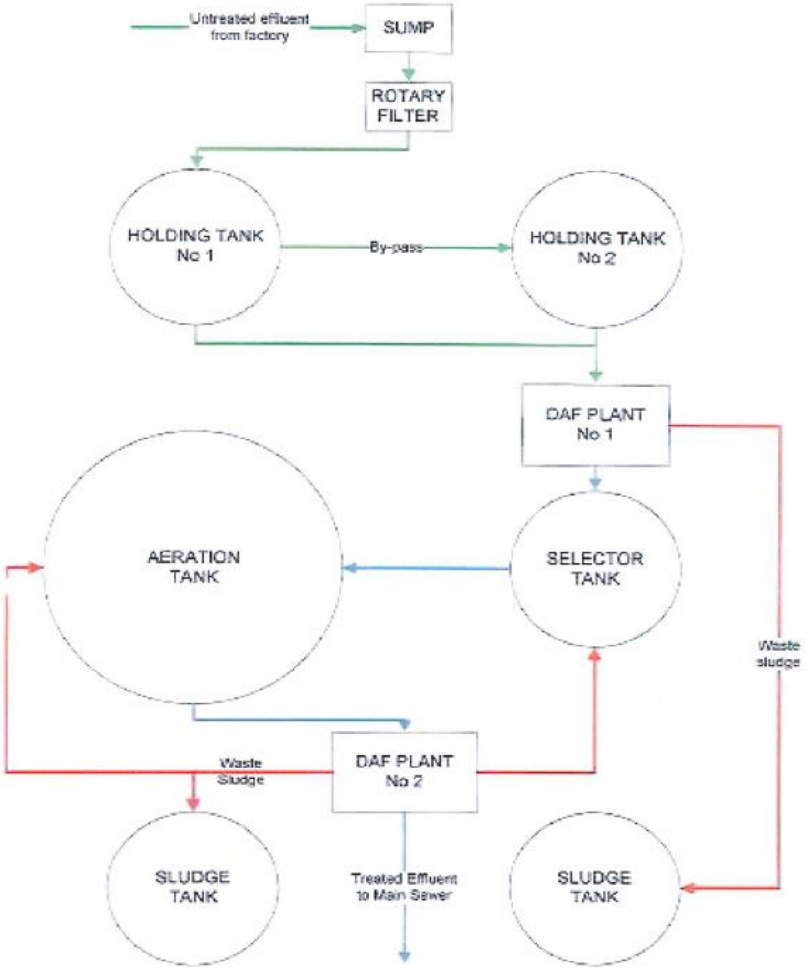
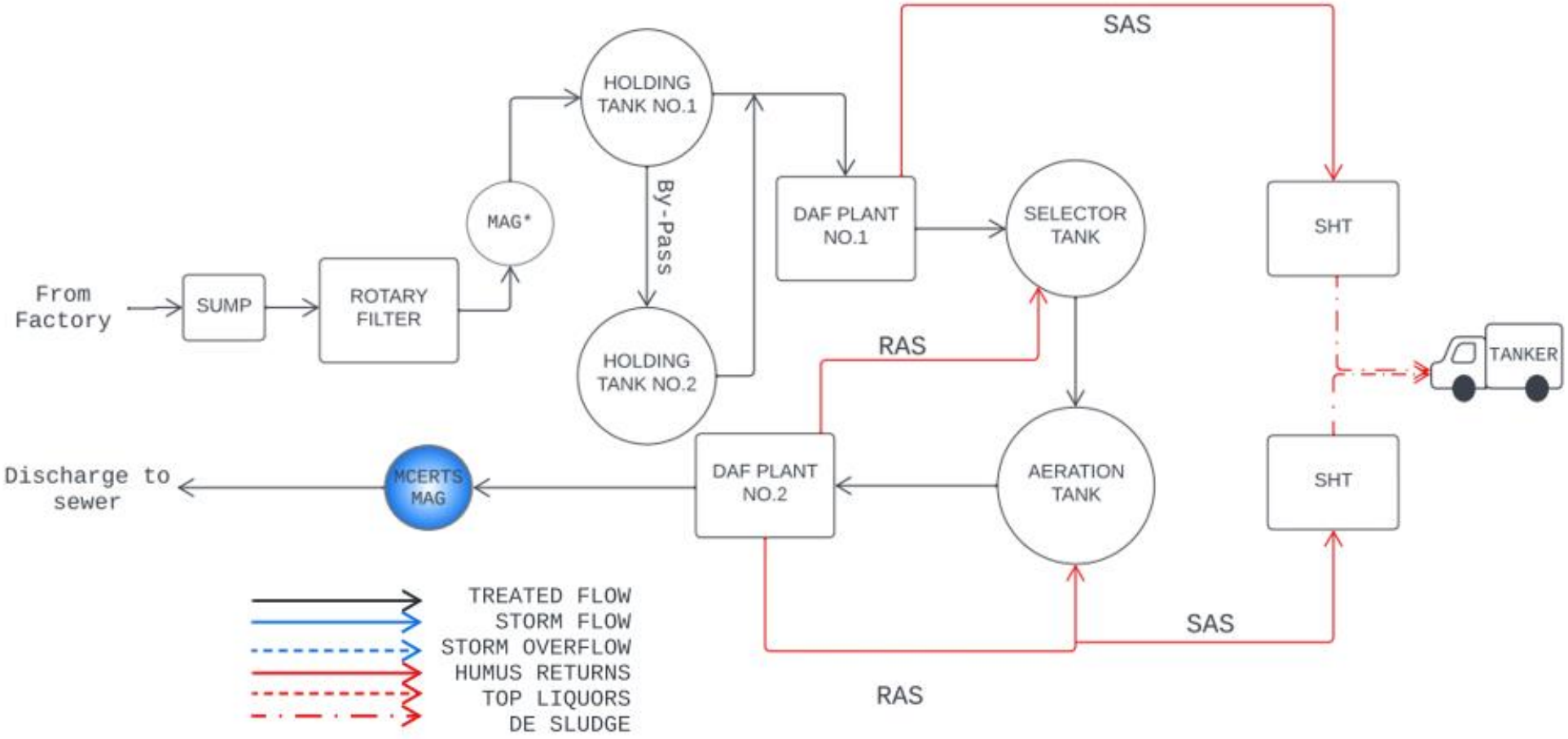


Figure 6: Proposed Effluent Treatment – Process Flow Diagram - 2024



Note to Figure: SHT – Solids Holding Tank. SAS – Surplus Activated Sludge. RAS – Return Activated Sludge.

3.3. Levels of Odour

3.3.1. Individuals may have different responses to the same odorous compounds i.e. if they find it acceptable or objectionable and offensive. Perception of odour is also influenced by other senses such as sight and taste.

3.3.2. For the purposes of this OMP, the three levels of odour as described by the EA's Horizontal Guidance Note H4 (April 2011), will be used in the assessment. The description of each level, together with the action required in each case is provided in Table 4 below.

Table 4: Three Levels of Odour

Level of Odour	Action Required
Unreasonable odour amounting to serious pollution being or is likely to be caused (regardless of whether appropriate mitigation measures are being used).	Further action must be taken
Odour pollution is or is likely to be caused beyond the site boundary.	Implement appropriate measures to minimise the odour.
No odour arises beyond the site boundary, or is likely to arise	No further action required.

3.4. Odour Sources

3.4.1. Table 5 provides an odour inventory detailing each of the activities, which have the potential to give rise to odour on-site.

Table 5: Potential On-site Odour Sources and Pathways

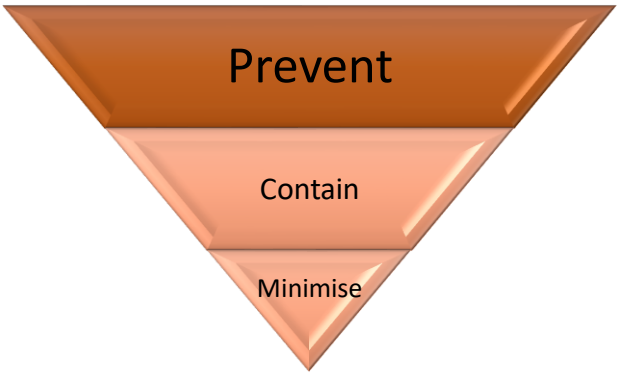
Ref	Activity	Location	Type of Emission
1	Smoker operation	Emission points A1, A4, A5 and A6	Point
2	Steam extraction	Tray wash bay	Diffuse
3	Storage of general waste	Waste compactor	Diffuse
4	Storage of meat waste	Bone skip	Diffuse
5	Effluent treatment	Effluent treatment plant	Diffuse
6	Drainage interceptors	3 located within site	Diffuse

4. OPERATIONAL PROCESS CONTROLS

4.1. Odour Management Strategy

4.1.1. Danish Crown's OMP strategy is to minimise any releases through good working practices and the use of suitable process control measures, which represent Best Available Techniques ("BAT"). A strategy based on the hierarchical structure shown in Figure 7 will be used at the Facility.

Figure 7: OMP Strategy



4.2. General Odour Control Measures

4.2.1. The techniques for odour control have taken into consideration the relevant indicative BAT requirements and Horizontal Guidance Note H4 Odour Management – How to comply with your environmental permit (April 2011).

4.2.2. The following general management techniques are employed at the Installation:

- the Installation is managed in accordance with an EMS, which is reviewed regularly to ensure it remains appropriate and up to date
- staff are suitably trained in the conditions of the Environmental Permit and EMS;
- good housekeeping regimes are implemented throughout the site building, storage areas and yard;
- regular cleaning and inspection to prevent the buildup of odorous residues;
- equipment is subject to regular maintenance and servicing as per the planned preventative maintenance programme ("PPMR");
- daily odour monitoring via sniff testing by the Environment, Health and Safety ("EH&S") department;
- relevant personnel trained in odour management procedures and all personnel will be trained in the prompt reporting of any abnormal noise so it may be rectified;
- emissions from the smoker vent through a catalytic afterburner to destroy any potential odours;
- general waste is stored in an enclosed compactor and is removed off-site 2 to 3 times per week;
- all effluents are agitated;
- the effluent plant sludge tank is emptied 3 times a week to prevent build up of

sludge and potential odours; and

- the bone skip is a dedicated covered trailer and is emptied up to twice per week.

4.2.3. Odour management measures specific to the function of the ETP include:

- Holding tank levels can be reduced during elevated ambient temperatures to reduce the retention time and the possibility of decaying organic matter;
- dissolved oxygen levels can be monitored and blower times increased to maintain sufficient dissolved oxygen levels within the tanks; and
- emptying of the sludge tanks are undertaken twice per week to reduce build up.

4.2.4. It should be noted that the effluent treatment system at the Installation has been designed to improve the way in which effluent is managed.

5. RISK ASSESSMENT

5.1. Methodology

5.1.1. A risk assessments has been undertaken using the following approach for odour:

- identification of hazards associated with the risk that have the potential to cause harm;
- identification of potential receptors i.e. what is the risk (for the purposes of this assessment, typical potential receptors have been identified)?
- pathway, i.e. how can the hazard get to the receptor?
- risk management measures employed to reduce the risk to an acceptable level;
- probability of exposure i.e. how likely is this contact?
- consequence i.e. what is the harm that can be caused? and
- assessment of overall risk.

5.1.2. The results of the assessment is provided in Table 6.

Table 6: Odour Risk Assessment

Hazard	Receptors	Pathway	Risk Management	Probability of Exposure	Consequence	Overall Risk
Emissions to Air						
Fugitive Emissions to Air						
Odour emissions from site operations	Human population in the surrounding area	Release to Air. Installation is close enough for potential odour emissions to reach potentially sensitive receptors.	General odour management measures include: • regular cleaning and inspection to prevent the buildup of odorous residues; • equipment subject to regular maintenance and servicing as per the planned preventative maintenance programme ("PPMR"); • daily odour monitoring via sniff testing by the Environment, Health and Safety ("EH&S") department; • relevant personnel trained in odour management procedures and all personnel will be trained in the prompt reporting of any abnormal noise so it may be rectified. Odour management measures specific to the function of the ETP: • Holding tanks levels can be reduced during elevated ambient temperatures to reduce the retention time and the possibility of decaying organic matter; • dissolved oxygen levels can be monitored and blower times increased to maintain sufficient dissolved oxygen levels within the tanks; and • emptying of the sludge tanks are undertaken twice per week to reduce build up. This is only undertaken during normal working hours.	Low Risk management measures should prevent unauthorised releases from reaching the identified receptors	Possible odour nuisance	Not significant if risk management measures are strictly adhered to

Table 6: Odour Risk Assessment (Cont.)

Hazard	Receptors	Pathway	Risk Management	Probability of Exposure	Consequence	Overall Risk
Pests						
Attraction of pests due to ETP activities	Ecological and human sensitive receptors in surrounding area (see Section 2.2 and 2.3 of this ERA).	Release to Air. Installation is close enough for potential odour emissions to reach potentially sensitive receptors.	Due to the nature of the food processing activities undertaken at the Installation, strict and robust pest control management measures are implemented in the interest of food hygiene. Pest control measures are summarised as follows: • regular cleaning and strict housekeeping standards. Infrastructure kept clear and subject to housekeeping inspections and procedures. • surfacing kept clear to ensure easy cleaning where necessary; • daily site checks which include checks for the presence of pests and to ensure housekeeping standards are maintained; • all tanks are sealed; • all relevant employees are also trained to understand the signs of pest activity and the need to report any evidence of pests or pest activity to a designated manager; and • employment of an external contractor to implement and monitor a pest control programme at the Installation which includes regular visits and follow up reports of any findings. These are discussed during management meetings for prompt close-out.	Low Risk management measures should prevent unauthorised releases from reaching the identified receptors	Possible pest nuisance	Not significant if risk management measures are strictly adhered to

6. ODOUR MONITORING

6.1. Management Controls

6.1.1. The Senior management team will have overall responsibility for ensuring that odour is minimised or prevented from the Installation.

6.1.2. On a day-to-day basis the Security guard carry out routine checks of odour and report as necessary. This is undertaken as described in Section 6.2, Odour Assessment.

6.2. Odour Methodology

6.2.1. To carry out the assessment, the trained designated person / personnel will use their own sense of smell to detect odours, which may arise from within the Site. The wind roses show that the prevailing winds are predominantly north-westerly, with some south easterly components. Consequently, odour observations will initially be undertaken at the locations numbered 1-6 on the Odour Monitoring Plan (ECL Drawing DCUK.01.01/03) in Appendix 1.

6.2.2. If odour is detected, the designated person (personnel) will walk the perimeter of the site's environmental permit boundary to detect if odour can be detected at the Installation's boundary. The frequency of assessment be no less than once a day on operational days and in response to complaints.

6.2.3. If an odour assessment indicates that an odour is being detected at the environmental permit boundary, the site will be investigated for the source. Potential sources of odour and the mitigation measures proposed are detailed in Tables 5 and 6 of this OMP. If the source is detected or can be attributed to a process, action to eliminate that odour will be undertaken.

6.2.4. Further assessments will then be undertaken at any of the potentially sensitive receptors that are located down wind of the boundary on which the odour is detected.

6.2.5. All odour assessments will be recorded on the Installation's Odour Assessment Form Log (see Appendix 1) or in the site diary and these will be stored on site or electronically.

6.3. Routine Odour Assessment

6.3.1. There are two guidelines to be followed by designated personnel for the scheduling of odour assessments, and these are:

- to vary the odour assessment times to cover all the differing activities that take place on site; and/or
- if the time is close to a coffee or lunch break, schedule it to be undertaken before rather than after.

6.3.2. The assessment will involve the designated person to walk around the site's environmental permit boundary to determine if any odours can be detected. All observations will be recorded on the Odour Assessment Form (Appendix 1).

6.3.3. Should any odours be observed, the designated person will make an assessment of the sensitivity of the area, and the nature and severity of the odour.

6.3.4. Whilst undertaking the assessment the designated person will observe the locality for indications of other activities that may be causing sources of other odour.

6.3.5. Having completed the odour assessment, should odour be detected, the designated person will complete the Odour Assessment Form and report the conclusions immediately to the management for them to decide on necessary action should it be required to be taken.

6.3.6. Each odour assessment will have a conclusion detailing action that will be taken as a result of the assessment, even if this is no action required.

6.3.7. Completed Odour Assessment Forms will be stored on site for a minimum of two years. The forms will be available for inspection to all relevant persons (i.e. regulatory authority) during opening hours.

6.4. Training

6.4.1. All designated personnel responsible for assessing odour will be trained in the use of this procedure by persons appointed by Danish Crown.

6.4.2. Training will require the trainee to fully understand this assessment method, responsibilities and to carry out a supervised odour assessment to the satisfaction of the trainer.

6.4.3. A record of the training will be made in the training record sheets kept and available for inspection on site.

6.5. Responsibilities of the Designated Person

6.5.1. The designated person carrying out an odour assessment will have the responsibility to ensure that the precautions listed below are followed to their best ability. These include:

- not to smoke or consume strongly flavoured food or drink, including coffee, for at least half an hour before the assessment is carried out;
- not to consume confectionery or soft drinks immediately before and during the assessment;
- not to apply scented toiletries, such as perfume/aftershave immediately before or during the assessment; and
- ensure the assessment is carried out by another designated person if there is any reason the ability to detect odour is impaired e.g. cold, sore throat, sinus trouble etc.

7. Complaints

7.1. Response to Complaints

7.1.1. Any complaints will be recorded on the Odour Complaint form (see Appendix 2).

7.1.2. Information regarding the nature of the complaint will be used to assess the offensiveness of the odour. Subsequent investigation of the complaints will either confirm, fail to confirm, or further characterise the odour incident.

7.1.3. In the event of any elevated levels of odour identified by the monitoring programme, or on receipt of substantiated complaint(s), the following mitigation measures will be implemented:

- the EHS manager will notify the EA Site Inspector;
- the Site management team /Supervisor take immediate action to investigate and take appropriate remedial action;
- the Site Manager team will inform the complainant(s) of the steps which will be undertaken to mitigate the odour;

7.1.4. Once the odour source has been identified and corrective and preventative measures have been implemented, the security guard/Site Supervisor will undertake a further odour assessment to ensure that the improvements have addressed the source of the elevated levels.

APPENDIX I
Odour Assessment Form and
Odour Monitoring Plan (Drawing DCUK.01.01/03)

Odour Assessment Form

Site Conditions

Date:		**Time**	
Temperature:		**Wind Speed & Direction:**	
Cloud Cover:		**Precipitation:**	
Time:		**Assessed By:**	
Process Conditions			

Odour Assessment

	Odour Intensity (1)	On/Off Site Source?	Odour Description
Location 1			
Location 2			
Location 3			
Location 4			
Location 5			
Location 6			

Note to Table

(1) Levels of Odour Intensity: 0 = No odour; 1 = Faint; 2 = Moderate; 3 = Strong; and 4 = Very Strong.

Comments/Action Required

LEGEND

- ENVIRONMENTAL PERMIT BOUNDARY
- BUILDING
- ? ODOUR ASSESSMENT LOCATIONS

4

3

5

Factory

6

2

CHEMICAL STORE

EFFLUENT TREATMENT PLANTROOM

LPG TANKS

AERATION TANK 620m³

STORE

Trenethans

1

0m 20m 50m 100m

N

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Project Title: ENVIRONMENTAL PERMIT VARIATION APPLICATION
DANISH CROWN UK LIMITED
EBENEZER, BUGLE
SAINT AUSTELL
PL26 8RR

Drawing Title: ODOUR MONITORING PLAN

Rev	Date	Details	Chkd

Date	Scale	Drawn by	Checked by	Approved by
17/10/2024	1:1000 @ A3	GTB	SC	SC

Drawing Status: WORKING DRAWING

Drawing Number: DCUK.01.01-03

Rev: -

APPENDIX 2
Odour Complaint Form

Odour Complaint Form

Date:		
Time:		
Contact Details of Complainant		
Date of Odour:		
Time of Odour:		
Location of Odour:		
Weather at time of Incident (windspeed, and direction, temp, precipitation, cloud cover etc)		
Description of the Odour:		
Process Conditions at Time of Odour Complaint:		
Action To Be Taken:		
Follow up Odour Assessment Conclusions:		
Complaint Closed Out:	Date:	
	Name:	
	Signature:	
	Position:	