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Attachment 4-8-2

Baseline Screening Assessment Report

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1 Introduction

This Baseline Screening Assessment Report has been prepared on behalf of Anglo Beef Processors (Waterford Proteins). The report forms part of the review application (Attachment 4-8-2) of the Industrial Emissions Licence (IEL) for the facility.

The purpose of the report is to determine whether or not a baseline report in accordance with the requirements under Article 22(2) of Directive 2010/75/EU on Industrial Emissions is required for the facility.

This report has been prepared in line with the European Guidance concerning baseline reports under Article 22(2) of Directive 2010/75/EU on Industrial Emissions and forms part of the IE Licence application.

The report provides information on ‘relevant hazardous substances’ used/to be used, produced or released by the installation and the possibility of soil and groundwater contamination by ‘relevant hazardous substances’ used/to be used, produced or released by the installation concerned.’

2 Methodology

This report complies with the requirements of section 86B of the EPA Act of 1992.

“Baseline report and permanent cessation of activity.

- 1) *Where an industrial emissions directive activity involves the use, production or release of relevant hazardous substances, and having regard to the possibility of soil and groundwater contamination at the site of an installation concerned, the Agency shall require an applicant under this Part for a licence or review of a licence or a revised licence relating to the activity, including such a review by the Agency of its own volition, to furnish to the Agency a baseline report in accordance with regulations under section 89.*
- 2) *In relation to an installation, a baseline report shall contain the information necessary to determine the state of contamination of soil and groundwater as the time that the report is drawn up in order that a quantified comparison may be made to the state of the site upon the permanent cessation (including cessation by abandonment) of the industrial emissions directive activity concerned and the applicant in preparing the baseline report shall include any information prescribed in regulations under section 89.*

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- 3) *Notwithstanding the generality of subsection (2), a baseline report shall include at least the following information –*
- (a) the current use and, where available, the past use of the site,*
 - (b) any available information –*
 - (i) on soil or groundwater measurements that reflect the state of the site at the time that the baseline report is drawn up, or*
 - (ii) on new soil and groundwater measurements, having regard to the possibility of soil and groundwater contamination by the hazardous substances proposed to be used, produced or released by the installation concerned.*
- 4) *Any information furnished to the Agency or to any other body under any enactment or rule of law or a law of the European Union, which complies with the requirements of subsection (2) or (3), may be furnished to the Agency in or with the baseline report.*
- 5) *For the purposes of determining the information to be contained in a baseline report under this section the Agency shall have regard to, and shall for the purposes of subsection (2), make publicly available any guidance documents published by the Commission of the European Union in accordance with Article 22(2) of the Industrial Emissions Directive.”*

The guidance published by EU Commission, *European Commission Guidance concerning baseline reports under Article 22(2) of Directive 2010/75/EU (2014/C 136/03)* on industrial emissions, has been used in the preparation of this report, in determining the information to be provided.

The objective of the baseline report/assessment is to undertake A “*once-off*” quantified assessment of soil and groundwater quality conditions at this site relative to site-specific hazardous substances both historically and currently used at the Waterford Proteins facility and to provide a baseline condition survey of the site for comparison purposes in the case of potential future hazardous emissions to ground and/or for any closure plans into the future.

The guidance document is based on eight stages with typical information required outlined below:

- Stages 1-3** Identifying the hazardous substances on site, the associated historical and current storage facilities and the associated site-specific potential pollution pathways associated with each substance.
- Stage 4** Confirming the site history in relation to the present use of the site and the emissions of hazardous substances which have occurred and which may give rise to pollution in the future. In particular, incidents such as spills from routine operations, changes in operational practices, site surfacing and changes in the type of hazardous substances used will require identification and confirmation.
- Stage 5** Assessing the environmental setting of the site to determine the potential migration of hazardous substances, if released, and to determine what areas require investigation to identify them in the ground. It also involves identifying the environmental media and receptors that are potentially at risk and where there are other activities in the area which release the similar hazardous substances and may cause them to migrate onto the site.
- Stage 6** Identifying the location, nature and extent of existing pollution on the site and to determine which strata and groundwater might be affected by such pollution. A comparison with potential future emissions is also required to see if particular areas are coincident. A conceptual site model (CSM) should be produced for the entire site and also for individual areas of concern at the site. The nature and complexity of the models will vary area by area and site by site.
- Stage 7** If there is sufficient information to quantify the state of soil and groundwater pollution by relevant hazardous substances following completion of Stages (1) to (6) then no further investigation or monitoring activities is required for the site. However, if insufficient information exists, then intrusive investigation activities for the site will be required.
- Stage 8** Producing a baseline report for the facility that quantifies the state of soil and groundwater pollution by relevant hazardous substances utilised and stored at the facility.

The assessment undertaken for preparation of this Baseline Screening Report has followed Stages 1-3 of the EC Guidance to determine whether a baseline report is required.

3 Site History

The facility was constructed in 1972 as a rendering plant by Clover meats. Clover meets closed in December 1984. The factory was acquired by ABP in 1985 along with the adjacent beef processing plant. The factory has operated as a rendering plant since the acquisition. The plant has been gradually upgraded over the years to the modern production facility in operation today. Major developments on the site included the installation of new cookers, crushers, presses, decanters, meal cooling, intake reception, meal offloading, thermal oxidizer, biofilter, blood storage, workshop, control room and site aesthetics. The facility was granted an IPC licence (P0040-01) in December 1997. This revised licence (P0040-02) was issued in April 2001. This licence was technically amended to an Industrial Emissions licence in December 2013. There is no known soil or groundwater contamination at the site.

4 Site Location

The site is located in Christendom, Ferrybank, Co. Kilkenny as shown in Figure 1 below. The site is situated in the Kilkenny Local Authority functional area but has a postal address in Waterford. The facility is located on a 5.5-hectare site adjacent to the estuary on the perimeter of Waterford city. The area is primarily industrial with a small number of residential dwellings in relatively close proximity to the facility.



Figure 1: Site Location Map

5 Stage 1: Identification of Hazardous Substances

The guidelines from the Commission require the following details for Stage 1:

Identify which hazardous substances are used, produced or released at the installation and produce a list of these hazardous substances.

“Hazardous substance” is defined in the Guidance as substances or mixtures as defined in Article 3 of Regulation (EC) No. 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures.

Article 3 of Regulation (EC) No. 1272/2008 defines hazardous substances and mixtures and specification of hazard classes as follows:

*A substance or a mixture fulfilling the criteria relating to physical hazards, health hazards or environmental hazards, laid down in **Parts 2 to 5 of Annex I** is hazardous and shall be classified in relation to the respective hazard classes provided for in that Annex.*

Where, in Annex I, hazard classes are differentiated on the basis of the route of exposure or the nature of the effects, the substance or mixture shall be classified in accordance with such differentiation.

The range of materials, substances, intermediates, products, fuels, and chemicals which are/will be produced or utilised by the installation can generally be categorised under the following groupings:

- Raw Materials
- Intermediates
- Products
- Cleaning Chemicals
- Boiler Treatment Chemicals
- Fuels and Lubricants
- Process Gases
- Refrigeration Gases
- Packaging Materials

A comprehensive list of all of materials produced or utilised at Waterford Proteins under each category is provided in Appendix A. Details of Danger category and

Hazard Statements are also provided. All chemicals/substances utilised on-site were assessed in terms of the risk posed to aquatic receptors. This was undertaken by considering all materials classified with Hazardous statements as follows:

- H400: Very toxic to aquatic life;
- H401: Toxic to aquatic life;
- H402: Harmful to aquatic life;
- H410: Very toxic to aquatic life with long-lasting effects;
- H411: Toxic to aquatic life with long-lasting effects;
- H412: Harmful to aquatic life with long-lasting effects;
- H413: May cause long-lasting harmful effects to aquatic life; and
- H420: Harms public health and the environment by destroying ozone in the upper atmosphere.

A review was undertaken as part of this baseline screening assessment to identify any substances produced or utilised in the Waterford Proteins facility that are defined as hazardous substances. Refer to Appendix A.

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6 Stage 2: Identifying the Relevant Hazardous Substances

The guidelines from the Commission require the following details for Stage 2:

Identify which of the hazardous substances from Stage 1 are 'relevant hazardous substances' (see Section 6.1).

Discard those hazardous substances that are incapable of contaminating soil or groundwater. Justify and record the decisions taken to exclude certain hazardous substances.

'Relevant hazardous substances' (are defined in the guidance as those substances or mixtures defined within Article 3 of Regulation (EC) No. 1272/2008 (Identified in Stage 1) which, as a result of their hazardousness, mobility, persistence and biodegradability (as well as other characteristics), are capable of contaminating soil or groundwater and are used, produced and/or released by the installation. This information has been extracted from Material Safety Data Sheets (MSDS) and used to determine whether or not the substance has the potential to cause pollution of soil and groundwater.

Based on the chemicals as detailed in Appendix A, only relevant hazardous substances that pose a potential risk to soils and groundwater were considered (i.e. hazard statements H400 to H420).

The data, together with the rationale used to interpret it, is provided in Appendix B. Each of these "relevant hazardous substances" is further assessed for risk of soil and groundwater contamination in Stage 3 of this report.

7 Stage 3: Assessment of the Site-Specific Pollution Possibility

The guidelines from the Commission require the following details for Stage 3:

For each relevant hazardous substance brought forward from Stage 2, identify the actual possibility for soil or groundwater contamination at the site of the installation, including the probability of releases and their consequences, and taking particular account of:

- *The quantities of each hazardous substance or groups of similar hazardous substances concerned;*
- *How and where hazardous substances are stored, used and to be transported around the installation;*
- *Where they pose a risk to be released; and,*
- *In case of existing installations also the measures that have been adopted to ensure that it is impossible in practice that contamination of soil or groundwater takes place.*

Each substance identified in Stage 2 as being a 'relevant hazardous substance' has been considered in the context of the site to determine whether circumstances exist which result /may result in the release of the substance in sufficient quantities to represent a pollution risk to soils or groundwater, either as a result of a single emission or as a result of accumulation from multiple emissions. Specific appraisal criteria considered are as follows:

- The quantity of each hazardous substance handled, produced or emitted in relation to its environmental effects.
- The location of each hazardous substance on the site e.g. where it is or will be delivered, stored, used, moved around the site, emitted etc., in particular in view of the characteristics of the soil and groundwater at that part of the site;
- The presence and integrity of containment mechanisms, nature and condition of site surfacing, location of drains, services or other potential conduits for migration.

The data, together with the rationale used to interpret it, is provided in Appendix C

8 Screening Summary

The risk assessment for each substance presented in this stage of the report indicates that the volumes of the substance stored, the nature of the containment system and the consequences of the events are varied but in all cases the risk assessment indicates that the risk of ground or groundwater contamination by a relevant hazardous substance is **low**.

As such, it is concluded that an intrusive baseline investigation is not required for the Waterford Proteins facility as per Section 5.3 of the Commission Guidance.

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Appendix A - Stage 1 Assessment Tables

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Ref. No.	Material/ Substance	CAS Number	Danger Category	Amount Stored (tonnes)	Nature of Use	Hazard Statement	Pollutants				Controlled Substances REACH SVHC
							EC EO (Surface Waters) Regulations 2009		EC EO (Groundwater) Regulations 2010		
							Specific pollutants	Priority (hazardous) substances	Hazardous	Non-hazardous	
1	Diesel	68814-87-9	Xn, Xi, Carc. Cat. 3, N	22	Fuel	H304 H315 H332 H351 H373 H411 H401	No	No	Yes	No	No
2	Kerosene	8008-20-6	Xn, Xi, N	2	Fuel	H226 H304 H315 H336 H411	No	No	Yes	No	No
3	Tallow	-	-	600	By-Product	-	No	No	No	No	No
4	Meat and Bone Meal	-	-	200	By-Product	-	No	No	No	No	No
5	Sodium Hypochlorite	7681-52-9	C, N	0.25	Detergent. Disinfectant.	H290 H314 H400 H411	No	No	No	No	No
6	GTH Chemical	620-67-7	-	1	Tracing chemical	-	No	No	No	No	No
7	Clean Air Chemical	68424-85-1 68131-39-5	Xi	1	Odour Neutralizer	H315 H318	No	No	No	No	No
8	Greenstuff	-	-	0.3	Spill Absorbent	-	No	No	No	No	No
9	Omala Oil HD 460	-	-	0.2	Gear Lubricant	-	No	No	No	No	No
10	CB983	19004-19-4 55965-84-9	-	0.05	Cooling water biocide	H317 H412	No	No	No	No	No
11	CB923	55566-30-8	-	0.05	Cooling water biocide	H317 H318 H361D H412	No	No	No	No	No
12	Maxol Gear Oil 85 W/140	931-384-6 112-90-3	-	0.2	Lubricant	-	No	No	No	No	No
13	Gemguard SP220	-	-	0.2	Lubricant	-	No	No	No	No	No
14	Gemguard SP680	-	-	0.2	Lubricant	-	No	No	No	No	No
15	Glygoyle HE 460	95-38-5	-	0.2	Gear Oil	-	No	No	No	No	No
16	Greenox AdBlue	57-13-6	-	1	Fuel Additive	-	No	No	No	No	No

Ref. No.	Material/ Substance	CAS Number	Danger Category	Amount Stored (tonnes)	Nature of Use	Hazard Statement	Pollutants				Controlled Substances REACH SVHC
							EC EO (Surface Waters) Regulations 2009		EC EO (Groundwater) Regulations 2010		
							Specific pollutants	Priority (hazardous) substances	Hazardous	Non-hazardous	
17	EXCEL PLUS	1310-73-2 112-34-5 1300-72-7 68891-38-3 64-02-8 97489-15-1	-	1	Caustic Detergent	H290	No	No	No	No	No
18	Chevron Oil AW	-	-	0.2	Hydraulic Oil	-	No	No	No	No	No
19	Maxol Hydramax 150	68649-42-3	-	0.2	Hydraulic Fluid	-	No	No	No	No	No
20	Maxol Indusol EP 68	68955-53-3	-	0.2	Lubricant	-	No	No	No	No	No
21	Maxol Extend 15W/40	84605-29-8	-	0.2	Lubricant	-	No	No	No	No	No
22	Maxol Gear Oil 85W/140	931-384-6 112-90-32	-	0.2	Lubricant	-	No	No	No	No	No
23	Maxol Indusol EP 220	-	-	0.2	Lubricant	-	No	No	No	No	No
24	Propane	74-98-6	F+	1	Boiler start up and heating pipes	H220 H280	No	No	No	No	No
25	SA 162	10124-43-3 7681-57-4	Xn, Xi,	0.05	Boiler Water Oxygen Scavenger	H302 H318 H412	No	No	No	No	No
26	SM306	2809-21-4	-	0.05	Boiler Water Treatment	-	No	No	No	No	No
27	Thomilmatic PreBio	497-19-8 6834-92-0 70024-69-0 15630-89-4	C, Xi	0.06	Washing powder	H318 H314	No	No	No	No	No
28	Heavy Fuel Oil	68476-33-5	Xn, Carc. Cat. 23, N	100	Fuel	H332, H350, H361, H373, H410	No	No	Yes	No	No

Appendix B - Stage 2 Assessment Tables

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Ref. No.	Material/ Substance	CAS Number	Danger Category	Amount Stored (tonnes)	Nature of Use	Hazard Statement	Relevant hazardous substance? Yes/No	Reason / Data used
1	Diesel	68814-87-9	Xn, Xi, Carc. Cat. 3, N	22	Fuel	H304 H315 H332 H351 H373 H411 H401	Yes	Product contains substance classified as Dangerous for the environment according to SDS. Contains constituents with the potential to bioaccumulate.
2	Kerosene	8008-20-6	Xn, Xi, N	2	Fuel	H226 H304 H315 H336 H411	Yes	Product contains substance classified as Dangerous for the environment according to SDS. This product does not meet the criteria for PBT or vPvB substances.
3	Tallow	-	-	600	By-Product	-	No	Product is not classified as dangerous for the environment.
4	Meat and Bone Meal	-	-	200	By-Product	-	No	Product is not classified as dangerous for the environment.
5	Sodium Hypochlorite	7681-52-9	C, N	0.25	Detergent. Disinfectant.	H290 H314 H400 H411	Yes	Product contains substance classified as Dangerous for the environment according to SDS. This product does not contain any PBT or vPvB substances.
6	GTH Chemical	620-67-7	-	1	Tracing chemical	-	No	Product is not classified as dangerous for the environment according to SDS.
7	Clean Air Chemical	68424-85-1 68131-39-5	Xi	1	Odour Neutralizer	H315 H318	No	Product is not classified as dangerous for the environment according to SDS.
8	Greenstuff	-	-	0.3	Spill Absorbent	-	No	Product is not classified as dangerous for the environment according to SDS.
9	Omala Oil HD 460	-	-	0.2	Gear Lubricant	-	No	Product is not classified as dangerous for the environment according to SDS.
10	CB983	19004-19-4 55965-84-9	-	0.05	Cooling water biocide	H317 H412	Yes	Product contains substance classified as Dangerous for the environment according to SDS. None of the raw materials listed are classified as PBT / vPvB substances.
11	CB923	55566-30-8	-	0.05	Cooling water biocide	H317 H318 H361D H412	Yes	Product contains substance classified as Dangerous for the environment according to SDS. This product does not contain any PBT or vPvB substances.
12	Maxol Gear Oil 85 W/140	931-384-6 112-90-3	-	0.2	Lubricant	-	No	Product is not classified as dangerous for the environment according to SDS.

Ref. No.	Material/ Substance	CAS Number	Danger Category	Amount Stored (tonnes)	Nature of Use	Hazard Statement	Relevant hazardous substance? Yes/No	Reason / Data used
13	Gemguard SP220	-	-	0.2	Lubricant	-	No	Product is not classified as dangerous for the environment according to SDS.
14	Gemguard SP680	-	-	0.2	Lubricant	-	No	Product is not classified as dangerous for the environment according to SDS.
15	Glygoyle HE 460	95-38-5	-	0.2	Gear Oil	-	No	Product is not classified as dangerous for the environment according to SDS.
16	Greenox AdBlue	57-13-6	-	1	Fuel Additive	-	No	Product is not classified as dangerous for the environment according to SDS.
17	EXCEL PLUS	1310-73-2 112-34-5 1300-72-7 68891-38-3 64-02-8 97489-15-1	-	1	Caustic Detergent	H290	No	Product is not classified as dangerous for the environment according to SDS.
18	Chevron Oil AW	-	-	0.2	Hydraulic Oil	-	No	Product is not classified as dangerous for the environment according to SDS.
19	Maxol Hydramax 150	68649-42-3	-	0.2	Hydraulic Fluid	-	No	Product is not classified as dangerous for the environment according to SDS.
20	Maxol Indusol EP 68	68955-53-3	-	0.2	Lubricant	-	No	Product is not classified as dangerous for the environment according to SDS.
21	Maxol Extend 15W/40	84605-29-8	-	0.2	Lubricant	-	No	Product is not classified as dangerous for the environment according to SDS.
22	Maxol Gear Oil 85W/140	931-384-6 112-90-32	-	0.2	Lubricant	-	No	Product is not classified as dangerous for the environment according to SDS.
23	Maxol Indusol EP 220	-	-	0.2	Lubricant	-	No	Product is not classified as dangerous for the environment according to SDS.
24	Propane	74-98-6	F+	1	Boiler start up and heating pipes	H220 H280	No	Gaseous at STP.
25	SA 162	10124-43-3 7681-57-4	Xn, Xi,	0.05	Boiler Water Oxygen Scavenger	H302 H318 H412	Yes	Product contains substance classified as Dangerous for the environment according to SDS. This product does not contain any PBT or vPvB substances.

Ref. No.	Material/ Substance	CAS Number	Danger Category	Amount Stored (tonnes)	Nature of Use	Hazard Statement	Relevant hazardous substance? Yes/No	Reason / Data used
26	SM306	2809-21-4	-	0.05	Boiler Water Treatment	-	No	Product is not classified as dangerous for the environment according to SDS.
27	Thomilmatic PreBio	497-19-8 6834-92-0 70024-69-0 15630-89-4	C, Xi	0.06	Washing powder	H318 H314	No	Product is not classified as dangerous for the environment according to SDS.
28	Heavy Fuel Oil	68476-33-5	Xn, Carc. Cat. 23, N	100	Fuel	H332, H350, H361, H373, H410	Yes	Product contains substance classified as Dangerous for the environment according to SDS. Contains constituents with the potential to bioaccumulate.

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Appendix C - Stage 3 Assessment Tables

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Ref. No.	Material/ Substance	CAS Number	Danger Category	Amount Stored (tonnes)	Nature of Use	Hazard Statement	Relevant hazardous substance? Yes/No	Reason / Data used	Likelihood of potential pollution risk to soil/groundwater
1	Diesel	68814-87-9	Xn, Xi, Carc. Cat. 3, N	22	Fuel	H304 H315 H332 H351 H373 H411 H401	Yes	Product contains substance classified as Dangerous for the environment according to SDS. Contains constituents with the potential to bioaccumulate.	Low. Low volume stored on hardstanding area. Suitable bunded containment and storage. Routine visual inspections
2	Kerosene	8008-20-6	Xn, Xi, N	2	Fuel	H226 H304 H315 H336 H411	Yes	Product contains substance classified as Dangerous for the environment according to SDS. This product does not meet the criteria for PBT or vPvB substances.	Low. Low volume stored internally. Suitable bunded containment and storage. Routine visual inspections
5	Sodium Hypochlorite	7681-52-9	C, N	0.25	Detergent. Disinfectant.	H290 H314 H400 H411	Yes	Product contains substance classified as Dangerous for the environment according to SDS. This product does not contain any PBT or vPvB substances.	Low. Suitable containment and storage. Low volume.
10	CB983	19004-19-4 55965-84-9	-	0.05	Cooling water biocide	H317 H412	Yes	Product contains substance classified as Dangerous for the environment according to SDS. None of the raw materials listed are classified as PBT / vPvB substances.	Low. Suitable containment and storage. Low volume.
11	CB923	55566-30-8	-	0.05	Cooling water biocide	H317 H318 H361D H412	Yes	Product contains substance classified as Dangerous for the environment according to SDS. This product does not contain any PBT or vPvB substances.	Low. Suitable containment and storage. Low volume.
25	SA 162	10124-43-3 7681-57-4	Xn, Xi,	0.05	Boiler Water Oxygen Scavenger	H302 H318 H412	Yes	Product contains substance classified as Dangerous for the environment according to SDS. This product does not contain any PBT or vPvB substances.	Low. Suitable containment and storage. Low volume.
28	Heavy Fuel Oil	68476-33-5	Xn, Carc. Cat. 23, N	100	Fuel	H332, H350, H361, H373, H410	Yes	Product contains substance classified as Dangerous for the environment according to SDS. Contains constituents with the potential to bioaccumulate.	Low. Low volume stored on hardstanding area. Suitable bunded containment and storage. Routine visual inspections. No longer used on site. No reported history of spills.